

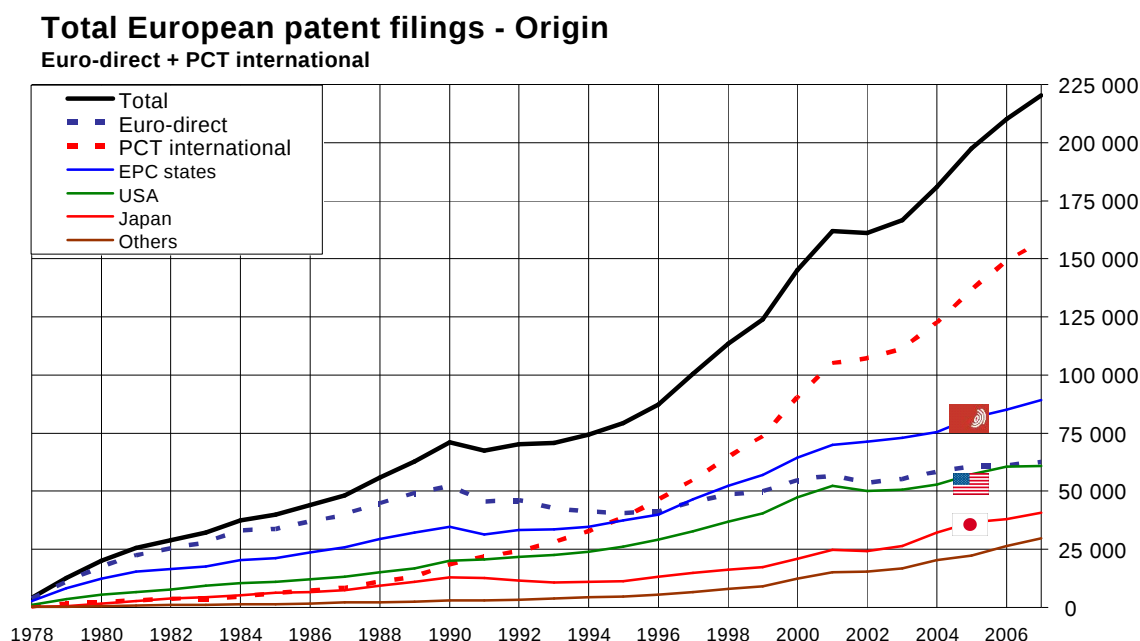
APPLICANT PANEL SURVEY 2007

OF INTENTIONS FOR FILING PATENT APPLICATIONS AT THE EUROPEAN PATENT OFFICE AND OTHER OFFICES

Munich, March 2008

Commentary by the European Patent Office

Numbers of filings at the European Patent Office continued to increase further in 2007.

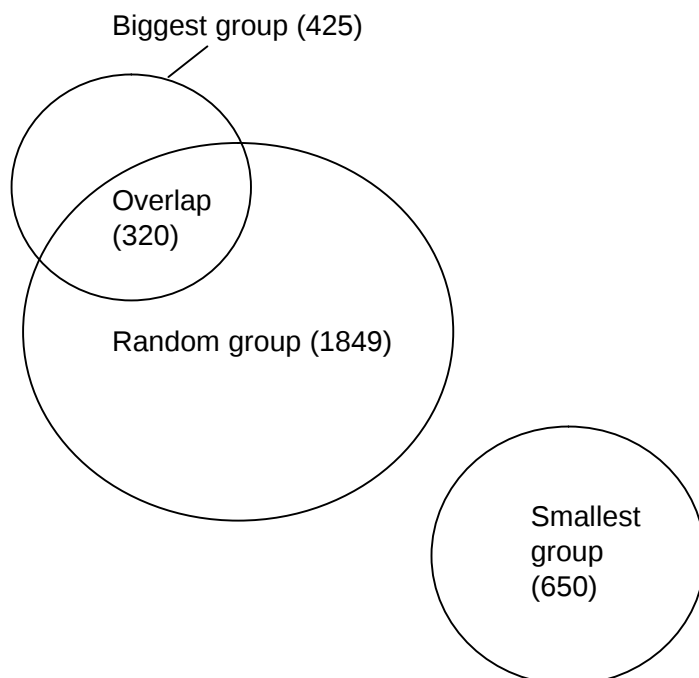


Each year, the EPO carries out a survey of filing intentions by applicants for European patents, in order to confirm likely trends. This report concerns the survey that was done in summer 2007 by the market research firm Synovate. The main purpose of the survey is to provide information on likely filing developments for the EPO's annual forecasting exercise for budgetary planning purposes.

The survey confirms a growth of about 6% in filings for 2007 compared to 2006. There continues to be optimism among applicants with regard to future numbers of patent filings. The predicted growth rates are about 11% from 2007 to 2008 and about 3% from 2008 to 2009. The survey results are subject to some statistical error, and so a spurt of filings in 2008 is not necessarily to be expected. Steady growth is however indicated over the forecast period. The survey results seem trustworthy since the observed outturn of filings for 2007 is very close to the forecast that was made. In fact all the scenarios identified in this report predict growth in EPO filings from 2007 to 2009.

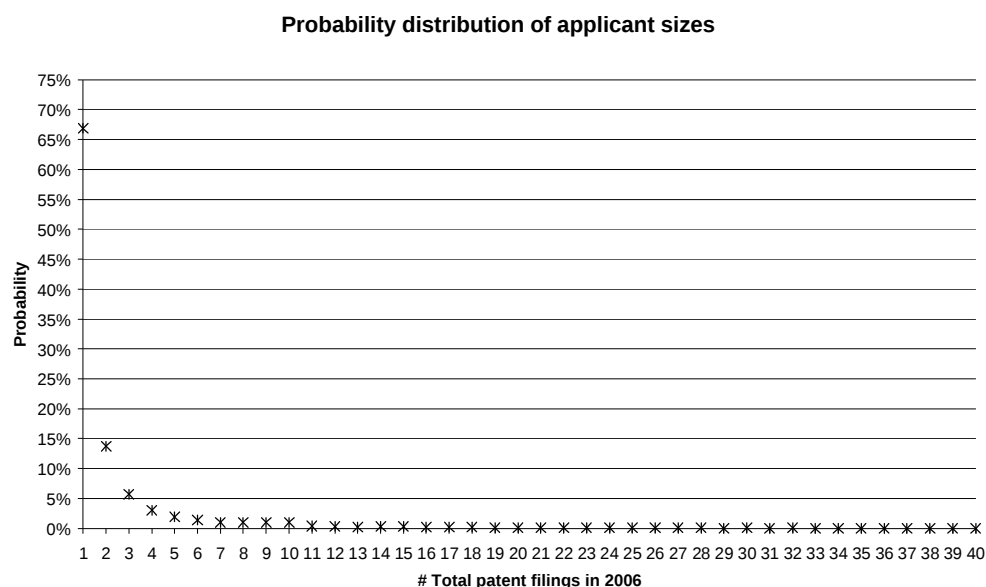
Nevertheless the world economic situation has deteriorated to some degree since the survey was carried out. A rough check was made of the average filings growth rate estimates by month of receipt of questionnaires from members of the Biggest group of sampled filers. But there was no apparent decrease in optimism over the summer months in 2007. Previous history of filings at EPO suggests that it takes a major economic shock to disrupt the steady trend of increases in filings from year to year.

Sample structure (Total gross sample)



As in previous years, the surveyed applicants included a Biggest group of about 400 of our largest clients in terms of numbers of applications. There was also a Random group of nearly 2 000 randomly selected applicants from the general population, with a sampling method that preferentially selected larger applicants. A considerable overlap exists between the Biggest group and the Random group. An innovation in this survey was to include a further randomly selected Smallest group of 650 applicants from EPC states. The members of the Smallest group made no more than two filings in 2006 according to the EPO database records. The information from the Smallest group has been combined with that of the Random group to give forecasts with slightly higher accuracy. But the main reason to include the Smallest group was to examine the economic activities of the large number of applicants that make small numbers of applications. The group contains many small and medium sized enterprises as well as individual inventors, the operations of which are of interest for innovation policy and even for the justification of the patent system itself.

The following diagram demonstrates that in fact nearly 81% of applicants made no more than 2 filings in 2006 (data described in **Annex VII**). Due to this large number of small applicants and each such applicant's low probability of selection for the main Random group, there was no overlap of the Smallest group with the other groups.



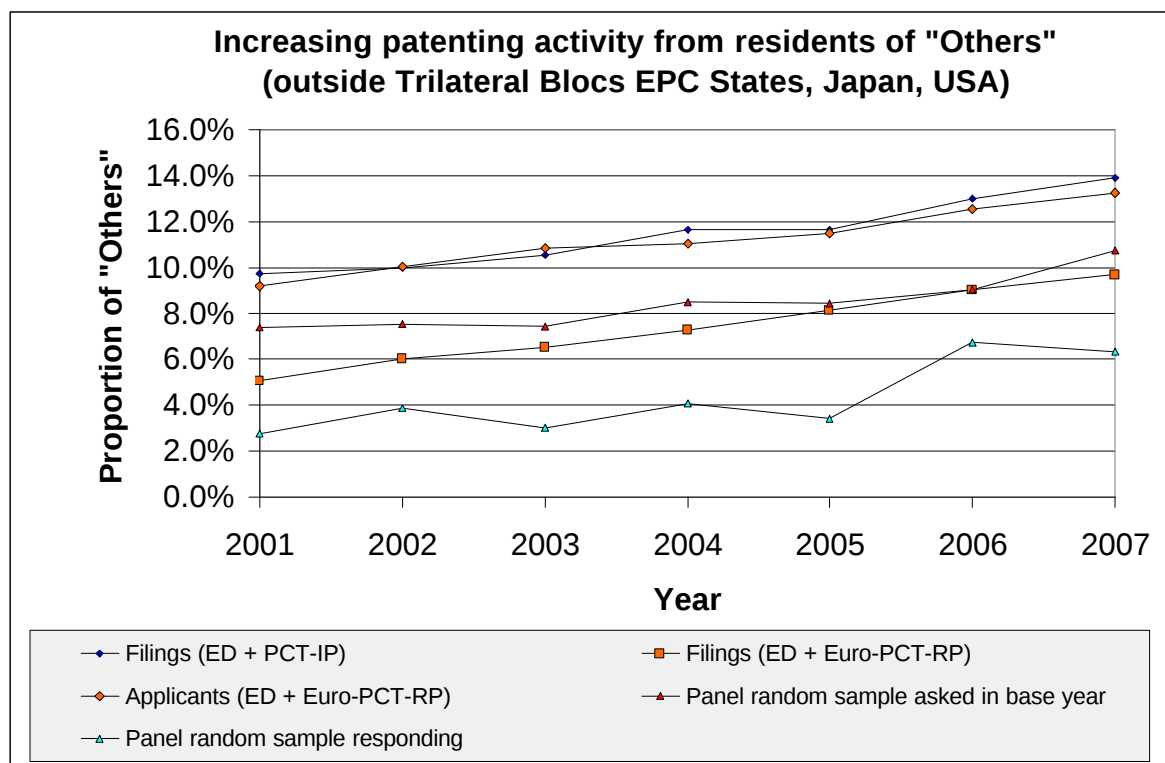
In this report, there is a presentation of the survey set-up and execution, followed by the results. Firstly some descriptive statistics are presented. Further changes have been made in the current survey to the method of reweighting results (outside the main forecasts) in order to be able to make inferences about distributions of factors among the population of applicants. The report then concentrates on estimating future inputs for the main workload items at the EPO: Direct European route filings (Euro-direct), PCT international phase filings (PCT-IP) and Euro-PCT regional phase filings (Euro-PCT-RP). There is an assessment of current results in comparison to those from previous surveys. In the annexes there are further analyses of the filing trends for applications in other national patent systems (particularly Japan and the United States, but also France, Germany and the United Kingdom), as well as descriptions of applicants' R&D budgets, the numbers of patentable inventions and first patent filings. Findings are also presented on factors influencing withdrawals of patent applications during their examination at the EPO.

The survey asks about filing intentions for three years only (in the current exercise 2007, 2008 and 2009). The set of forecasts that is identified as being most appropriate is in **Table 43**, and incorporates correction factors that compensate for previous applicants that may drop out of the system and new applicants that may appear during the forecasted years. The historical analysis in **Section 7.5** shows that incorporation of correction factors in previous surveys would have improved forecasting performance. See in particular **Figure 22**.

Another theme in the analysis of the current survey is to combine certain subsidiary classes to obtain alternative forecasted scenarios for filings. The best scenario this time was found by disregarding the residential blocs of the surveyed applicants. However further scenarios are presented that include breakdowns by residential blocs, and a particularly interesting one involves going on to remove the distinction between first and subsequent filings for the US based applicants only (**Table 23**). The terms "first filing" and "subsequent filing" have less meaning in the US patent system.

Another approach that has been taken over several previous surveys is to break applicants down by their residential blocs, but then to recombine data from residents of Others and EPC states because of the small numbers of applicants that are approached in the Others

Bloc ("Others" means countries outside the EPC states, Japan and USA, see **Tables 25** and **31**). However this no longer seems to affect the forecasted scenario very much, which reflects the fact that a greater proportion of EPO filings arrive from the Others Bloc each year. This is demonstrated in the following diagram.



Annex VI shows the results from the survey on R&D investment activities, inventions and usage of the patent system as well as withdrawal activities by applicants during patent examination. Tables are given to show a basic comparison of unweighted and weighted results. Further weighted descriptions of the inferred distributions of types of enterprises and sizes of enterprises by numbers of employees are given in **Section 5.5**. When reading these tables and graphics, care should be taken regarding the considerable statistical error created by the relatively small sample sizes on which the estimates are based. Thus, in **Figure 6** for example, it would be inappropriate to conclude that the EPO applicant population in Japan is actually deficient in companies with 1000 to 5000 employees. The broad messages do seem to be useful however. **Figures 4 to 7** indicate that the proportion of EPO applicants with less than 250 employees may be between 50 - 60% in Japan, between 70 - 80% for EPC and US, and above 80% from other countries. The weighting methods involve modelling assumptions and a continuing effort is being made to improve the approach as we carry out further surveys of these questions.

We are happy to be associated with this report and hope that you will enjoy reading it. Please provide us with feedback on any of the issues discussed. This will help us to refine our approach and to improve future surveys.

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1 Summary

1.1 Background

Since 1996, the European Patent Office (EPO) has carried out an annual "Applicant Panel Survey". Applicants are surveyed with the main objective of predicting the number of patent filings for the years 2008 and 2009. The EPO uses the predictions as one of the ways of allocating resources in order to ensure a high service level when processing future patent filings.

The design of the 2007 survey resembled the design of the preceding panel surveys since 2001 with a comparable sample size of approximately 2 000 applicants. But this time an extra group of 650 small applicants was also included. Synovate, Munich, (formerly Roland Berger Market Research) has carried out the data collection and the data entry since 2001. For the fourth year in succession, Synovate was again in charge of the data analysis and interpretation in 2007.

1.2 The 2007 survey

Applicants were selected in three groups: the Biggest group, the Random group, and the Smallest group. The total number of applicants involved was 2 615¹, with most of the Biggest group also appearing in the Random group. The Biggest and Random group samples included 1 965 and the Smallest group sample 650 applicants. A sample of smallest applicants was included in the survey in 2007 for the first time to provide additional insights into the filing behaviour of the group of small companies and individual inventors resident in Europe. The survey covered applicants for about 20% of the applications at the EPO (Direct and PCT IP filing numbers of Random sample relating to population, see **Annex IX**). In the first stage, valid addresses were found for 2 388 applicants, and contact details were established for 2 037 applicants. Questionnaires were sent out from end of May 2007, with interviews being completed by mid-September. The questionnaire contained a full matrix of questions on patent filings broken down by first and subsequent filings, not only at the EPO but also in other main worldwide patent systems. Furthermore, questions were asked to elicit information on R&D expenditures and filings by 14 joint clusters (roughly equivalent to industry segments) that are relevant to EPO operations. Descriptive information was also collected on company type and size in terms of persons employed and in terms of worldwide sales as well as operating/capital expenditure.

The total useful response rate was 40.5% of the valid addresses (966 out of 2 388), which is slightly above the 38.2% calculated for last year's survey.

¹ Numbers reported in this subsection include 11 deliberately added applicants, in contrast to the overview given in Sections 3 and 4.

1.3 Analysis of results on patent filings

The survey approach involved establishing forecasts from basic filing types and residence blocs of the applicants. The basic filings types at the EPO are first and subsequent filings, Euro-direct and PCT international phase filings (PCT-IP), and PCT applications entering the regional phase (Euro-PCT-RP). At other offices there are national filings and PCT applications entering the national phase (PCT-NP). The specific responses regarding future expectations for applicants' total filings at the EPO (Euro-direct + PCT-IP) were subject to several analyses.

This year's survey adds a Smallest group of applicants who made one or two filings in the base year. This sample was collected in order to ensure adequate resolution of the subset of applicants that have a low probability of being selected for the Random sample.

In order to make the fullest use of all the data available, the Smallest sample is imputed into the Random group via a modified weighting scheme. Details can be found in **Annex VII**. The combined sample of Random and Smallest groups will be referred to in this report as the Random & Smallest group.

Based on the Random & Smallest group without breakdown by residence bloc, growth rates for total filings (compared with 2006) can be estimated at about 3.5% in 2007, 11.9% in 2008 and 14.3% in 2009. For the Biggest group, estimated growth rates are somewhat lower. Without breakdown by residence blocs they are 2.1% for 2007, 6.1% for 2008 and 8.0% for 2009.

Comparing the predictions to the actual filings for the year 2007, shows that survey predictions are currently fairly well aligned with actual filing behaviour. The total number of actual filings increased from 210 177 in 2006 to a current estimate of 220 515 in the year 2007, implying an average growth of about 5%. Comparing this year's predictions with those from 2006, the forecasts using different methods are less volatile and confidence limits are generally narrower.

As in previous reports, forecasts are also broken down by joint clusters used at the EPO for organisational planning. Growth rates are calculated for each joint cluster, as well as on an overall basis, by combining the results for each joint cluster. Compared with the previous year's survey, the overall forecasts are more optimistic.

Overall, results from 2007 are quite similar to the results of 2005 and earlier years in terms of volatility and accuracy. It is the results of 2006 which in hindsight deviated from the usual results in terms of higher volatility and a propensity to underestimate actual filing behaviour.

This year, the concept of incorporating correction factors, based on birth and death effects of the entire population of applicants, was expanded on and thus the main filing predictions are given both with and without applying estimated birth and death effects. See **Annex VIII** for details.

As in previous years, it was also possible to analyse the questions on PCT filings entering the regional phase at the EPO. For the Biggest group, growth rates (compared with 2006) can be estimated at 6.6% in 2007, 14.0% in 2008 and 15.4% in 2009. For the Random &

Smallest groups, growth rates can be estimated at 8.4% in 2007, 17.0% in 2008 and 22.4% in 2009. As for Euro-direct and PCT international phase filings, estimates based on the Random & Smallest group are more optimistic than those based on the Biggest group.

1.4 Forecasts of future filings at the EPO

The recommended forecasts are those from the Random & Smallest group without breakdown by residence bloc and including companies with qualifying comments. This forecasting method is selected because it agrees most closely with the actual filing totals for 2007 before the addition of birth/death correction factors. At the same time the recommended approach carries the lowest deviation between its confidence limits.

As in previous years, there is no appreciable difference in the widths of confidence intervals for forecasts with or without residence bloc breakdowns. **Table 26** summarises the forecasts of the recommended approach.

The **overall survey forecast for total filings in 2007 is 217 444**, with approximate 95% confidence limits of 209 961 to 224 927, resulting in a deviation of $\pm 3.4\%$ and easily encompassing the actual number of filings of 220 515. The estimated percentage of Euro-PCT-IP filings among total filings for 2007 is 73.2%, compared to an actual value of 71.6%.

Applying the one year ahead birth/death correction factor of + 5 236 filings derived in **Annex VIII, the corrected forecast for total filings in 2007 is 222 680**. For 2008 and applying the two year ahead birth/death correction factor of + 11 996, **the corrected forecast for total filings in 2008 is 247 052**. For 2009, application of the three ahead birth death correction factor of + 15 212 leads to **a corrected forecast for total filings in 2009 of 255 343**. An analysis of forecasting performance using this method appears in **Table 43**.

1.5 Economic information about EPO applicants

An analysis appears in **Section 5** and **Annex VI** that relates to company types and economic activities of applicants, including expenditures on Research and Development (R&D), numbers of inventions and first patent filings by technical areas, as well as reasons for withdrawing patent applications during the examination process.

2 Introduction

In 2007, the European Patent Office (EPO) organised its twelfth annual "Applicant Panel Survey" on intentions regarding future numbers of patent filings. The survey was carried out via telephone and mail interviews with pre-established contact persons. The interviews, data collection and data analysis were undertaken by Synovate (formerly Roland Berger Market Research), providing the EPO with the benefit of joint experience previously gained in similar surveys from 2001 to 2006. The design of the 2007 survey was to a large extent similar to that of the previous years, using a comparable sample size for the Biggest and Random groups. A sample for smallest applicants was included in the survey in 2007 for the first time to provide additional insights into the filing behaviour of the group of small companies and individual inventors. New questions on the diffusion and use of patents for EPC resident applicants were added in 2007 as well as some questions on application withdrawals for all applicants in the survey.

The primary objective of the survey was to calculate quantitative forecasts of patent filings at the EPO and other patent offices by various filing routes and applicants' residence blocs (EPC², Japan, USA, Others). A secondary objective was to explore technological areas of patenting in order to make more detailed forecasts and to explore the relationship between R&D expenditures and patent applications. This was done on the basis of 14 joint clusters, broken down according to the technology-based classes of the patent applications and corresponding to the structure in which the EPO has organised its search, examination and opposition departments.

3 The 2007 survey

More than 2 600 applicants were approached regarding their expectations for patent filings for the coming three years, in this case for 2007, 2008 and 2009.

The parent population for the survey comprises applicants who filed patent applications at the EPO in 2006. These applicants are mainly companies, but there are also some organisations and private inventors.

The EPO provided three gross samples of applicants drawn from the EPO database of applications in early 2007:

- **"Biggest"**: This sample comprises 425 participants and is designed to represent large applicants separately.
- **"Random"**: This sample includes 1 849 participants and is designed to represent all applicants of the parent population. It was obtained from a simple random sample of applications, with the effect of over-weighting large applicants due to their larger numbers of applications.

² European Patent Convention (EPC) contracting states

- **"Smallest"**: This sample includes 650 participants and is designed to represent small applicants of the parent population. These applicants did not have more than two EPC-filings during 2006 with the first named applicant in EPC area.

All gross sample data were taken from the EPO application database (EPASYS) and considered Euro-direct and Euro-PCT regional phase filings only (PCT-IP filings were ignored for the sampling due to a lack of timeliness). All samples were drawn separately. Biggest and Random samples contain an overlap of 320 applicants who belong to both groups. Without double counting caused by the overlap, the gross sample includes a total of 2 604 applicants. The samples should adequately represent the three regions of Europe, the US and Japan. Other countries are a residual group of many countries but the simple random sampling scheme again gives them adequate representation. The applicants of the Smallest sample are solely from Europe.

The questionnaire that was used for data collection is attached as **Annex I**. It covers the following key topics:

- Current and future filings (**Section B**), split by
 - o first and subsequent filings
 - o different procedures: Euro-direct, PCT international and national/regional phase, and national procedures
 - o different countries: Germany, the UK, France, Japan, the US and Other countries
- Economic activities, split by the 14 joint cluster organisational groupings used for examinations at the EPO; including the total number of inventions considered for patent applications, the percentage of inventions that are actually patented, Research and Development expenditures (**Section C**)
- Withdrawing and reasons for withdrawals in terms of percentages (**Section D**)
- Company details, such as organisation type and number of employees, approximate size of sales, size of operating and capital expenditure, whether part of a national or international group of companies, founding year (**Sections C and E**)
- Information on the diffusion and use of patents (**Section F**); asked to EPC resident applicants only

The questionnaire was broadly similar to that used in 2006. Nevertheless, two versions of the questionnaire were used in 2007 depending on the residence of the applicants: EPC and non-EPC version. The EPC version was extended by the new part F on the diffusion and use of patents. Parts A to E were identical between the two versions. Therefore the following changes from the previous survey apply to both versions,

The main part B of the questionnaire remained unchanged to allow comparisons. In part C the number of full-time researchers was removed. A question on size of operating and capital expenditure was added. Question C (b) was rephrased (general percentage of inventions that are actually patented). Within part D the questions on patenting behaviour were replaced by questions regarding withdrawing and reasons for withdrawals. In part E information on the founding year of the company was requested.

Participants were given the opportunity to make general comments at the beginning of the questionnaire (**Section A**). A summary of the comments received is included in **Annex II**.

The main question (in **Section B**) asked for the numbers of filings already made in the base year (2006), as well as estimates for future filings for the years 2007, 2008 and 2009. An option was provided to give information in the form of growth rates rather than actual numbers. Growth rates on a year-by-year basis were a permitted alternative because previous experience showed that the interviewees had difficulties calculating growth rates from a single base year. However, for the results in the report, we have adopted the convention of indicating growth rates with respect to a base year (in this case 2006).

The questionnaire was accompanied by an official letter of recommendation from the President of the EPO³ in order to motivate respondents to participate. This letter contained information on the background of the study, the target group and data protection, a contact person at the EPO in cases of doubt, and stated that the report of the results would be published on the Internet. In addition, a cover letter from Synovate provided information on the survey procedure.

Both the letters and questionnaires were personalised, i.e. the company name, the address, the name of the contact person and the identification number were printed on each questionnaire and reference letter. The letters and questionnaires sent were written in English, French, German or Japanese.

Due to the changes in the questionnaire, it was tested in seven pre-test interviews in Germany, Austria, and Great Britain. For this purpose, the correct contact persons were researched and contacted by telephone. If they agreed to take part in the survey, the questionnaire was sent via fax and discussed by phone in a follow-up call. The pre-test interviews resulted in some changes in wording. The answers given in the pre-test interviews were included in the analysis.

The main interviews took place from end of May to mid-September 2007. Most questionnaires were completed by the respondents themselves. Substantive telephone interviews were required in only about 4% of cases (36 interviews). In 2007 all responses were included in the dataset and the analysis. Maybe the lack of late returns was due to a clear communication of the finish date at the end of the survey or due to a later cut-off date in comparison to previous years. In total, 966 interviews were completed in 2007. Of these, 747 interviews were completed for the Biggest and Random samples. For the Smallest sample, 219 interviews were conducted.

³ A new version of the letter with the signature of the new President of the EPO was used from July 1st 2007.

4 Response rates

An account of the execution of the survey is provided in the methodology report, from which the following information has been extracted. The EPO provided lists containing a total of 2 604 selected applicants. The researchers strove to identify contact names, addresses and telephone numbers, and 2 379 addresses were confirmed. Of these, contact was established with 2 037 applicants (adjusted sample) for survey purposes.

Despite some concerns regarding the extended questionnaire for residents of EPC countries, the response rate is only slightly lower than the high response rate of the previous year and comparable to the response rate in 2005.

Table 1 shows the total number of applicants that were selected for the survey, the number that dropped out for various reasons, and the final numbers of responses received. For the Smallest group, addresses were harder to find or to validate than for the Biggest and Random groups, due to a higher share of small companies and individual inventors than in the Biggest or Random groups (16% loss due to addresses not found compared to 1% and 7% in the Biggest and Random groups).

Item	Total		Biggest		Random		Smallest	
	n	%	n	%	n	%	n	%
Total gross sample	2 604	100.0	425	100.0	1 849	100.0	650	100.0
Addresses not found	225	8.6	6	1.4	121	6.5	103	15.8
Addresses found	2 379	91.4	419	98.6	1 728	93.5	547	84.2
Addresses found	2 379	100.0	419	100.0	1 728	100.0	547	100.0
Dropouts (1)	342	14.4	62	14.8	236	13.7	88	16.1
Adjusted sample	2 037	85.6	357	85.2	1 492	86.3	459	83.9
Dropouts (2)	1 071	45.0	143	34.1	793	45.9	240	43.9
Total responses	966	40.6	214	51.1	699	40.5	219	40.0

- (1) Company was identical to another already identified in the sample; company could not be reached; contact was sick/on vacation; an appropriate contact was not found; company being restructured etc.
- (2) Questionnaire not returned though promised; no time available for dealing with the matter; no interest in filling out the questionnaire; data too confidential; company policy; returned questionnaire too late; participated in other EPO surveys etc.

Table 1: Sample and responses received

Table 2 shows the distribution of the applicant population in 2006, broken down by residence bloc (applicants for Euro-direct and PCT-IP, see also **Annex IX**).

Residence bloc	Applicants (popula- tion)	
		%
EPC countries	24 338	42.8
Japan	4 410	7.8
USA	17 730	31.2
Other countries	10 418	18.3
Total	56 896	100.0

Table 2: Population size (applicants for Euro-direct and PCT-IP)

Table 3 shows the aggregated information as in **Table 1**, but additionally broken down by the applicants' residence bloc (and leading countries). Compared with the previous survey, the overall response rate is slightly higher (40.6% in 2007 compared with 38.2% in 2006).

Residence bloc	Applicants selected (sample)		Addresses found	Adjusted sample	Responses	Response rate [%]
		%				
EPC countries thereof:	1 586	60.9	1 428	1 249	612	42.9
- Germany	525	20.2	510	478	251	49.2
- France	193	7.4	175	115	39	22.3
- UK	156	6.0	127	115	53	41.7
- Italy	145	5.6	129	119	54	41.9
- Netherlands	86	3.3	74	58	24	32.4
- Switzerland	138	5.3	130	115	63	48.5
Japan	267	10.3	255	219	167	65.5
USA	551	21.2	534	434	143	26.8
Other countries thereof:	200	7.7	162	135	44	27.2
- Korea	42	1.6	30	21	3	10.0
- Australia	34	1.3	31	30	11	35.5
- Canada	21	0.8	19	17	6	31.6
- China	14	0.5	12	8	4	33.3
Total	2 604	100.0	2 379	2 037	966	40.6

Table 3: Total sample and responses received by bloc (Biggest, Random, and Smallest groups, net numbers)

Table 4 and **Table 5** describe the Random group and the Biggest group (including their overlap) in greater detail. **Table 6** shows the response rate for the Smallest group.

Residence bloc	Applicants selected (sample)	%	Addresses found	Adjusted sample	Responses	Response rate [%]
EPC countries thereof:	196	46.1	194	172	96	49.5
- Germany	89	20.9	89	80	47	52.8
- France	30	7.1	28	24	10	35.7
- UK	11	2.6	11	10	5	45.5
- Italy	5	1.2	5	4	3	60.0
- Netherlands	10	2.4	10	9	3	30.0
- Switzerland	22	5.2	22	19	9	40.9
Japan	100	23.5	96	87	72	75.0
USA	113	26.6	113	87	41	36.3
Other countries thereof:	16	3.8	16	11	5	31.3
- Korea	7	1.6	7	3	1	14.3
- Canada	3	0.7	3	3	1	33.3
- Barbados	2	0.5	2	1	0	0.0
- China	1	0.2	1	1	1	100.0
Total	425	100.0	419	357	214	51.1

Table 4: Biggest group sample (including overlapping members of the Random group)

Residence bloc	Applicants selected		Addresses found	Adjusted sample	Responses	Response rate [%]
	(sample)	%				
EPC countries thereof:	875	47.3	821	737	363	44.2
- Germany	305	16.5	298	273	141	47.3
- France	112	6.1	110	96	32	29.1
- UK	81	4.4	70	66	32	45.7
- Italy	71	3.8	65	60	29	44.6
- Netherlands	47	2.5	42	32	14	33.3
- Switzerland	88	4.8	82	72	40	48.8
Japan	251	13.6	239	206	156	65.3
USA	525	28.4	508	415	136	26.8
Other countries thereof:	198	10.7	160	134	44	27.5
- Korea	42	2.3	30	21	3	10.0
- Australia	34	1.8	31	30	11	35.5
- Canada	21	1.1	19	17	6	31.6
- China	14	0.5	12	8	4	33.3
Total	1 849	100.0	1 728	1 492	699	40.5

Table 5: Random group sample (including overlapping members of the Biggest group)

Residence bloc	Applicants selected		Addresses found	Adjusted sample	Responses	Response rate [%]
	(sample)	%				
Total (EPC) thereof:	650	100.0	547	459	219	40.0
- Germany	191	29.4	183	179	93	50.8
- France	73	11.2	58	13	4	6.9
- UK	71	10.9	53	46	19	35.8
- Italy	72	11.1	62	57	24	38.7
- Netherlands	35	5.4	28	22	9	32.1
- Switzerland	44	6.8	42	38	22	52.4

Table 6: Smallest group sample (solely EPC countries)

Regarding the Random group sample, **Table 5** shows high response rates for Germany, UK, Italy and Switzerland. In Italy, the response rate increased from 27% in 2006 to 45% in 2007. In France the response rate increased from 20% in 2006 to 29% in 2007. For Great Britain, the response rate declined from 53% in 2006 to 46% in 2007, which is slightly higher than the response rate in 2005 (42%). **Annex IX** provides an alternative breakdown of the samples, showing the coverage proportions of the underlying populations in terms of both applicants and applications.

The researchers checked the plausibility of the responses received (**Annex III**). In cases where possible difficulties were identified, a follow-up interview was conducted to verify the responses.

5 Respondent profile

In **Sections C** and **E** of the questionnaire, respondents were asked to indicate the profile of the company, including company/organisation type, the number of persons employed and the joint clusters that best describe the applicants' business. A new **Section F** inquiring about diffusion and uses of patents (particularly involving licensing) was added to the questionnaire for EPC based applicants this year. Results for Section F are expected to be published as part of a forthcoming OECD STI Working paper and are not discussed further in this report.

5.1 All respondents

These findings represent the totality of responses to the survey, but they are almost the same as the results for the combined Random & Smallest group. The Random group and the Smallest group both represent probabilistic samples from the applicant population. It is considered most appropriate for the main forecasting exercises of this report to analyse and report results separately for the Biggest, the Random, and the Random & Smallest groups, and not to provide combined results for all respondents. The Smallest group on its own provides useful information on economic factors pertinent to smaller enterprises (see **Annex VI**).

5.2 Respondents from the Biggest group

The majority of respondents in the Biggest group are classified as private enterprises, accounting for more than 98% of the sample. Government-performed R&D, other public sector organisations and other non-public organisations account for 0.6% each. In terms of numbers of employees, the majority of respondents in the Biggest group have 1 000 or more employees, accounting overall for more than 95%. In short, most of the applicants from the Biggest group are private enterprises and employ at least 1 000 persons.

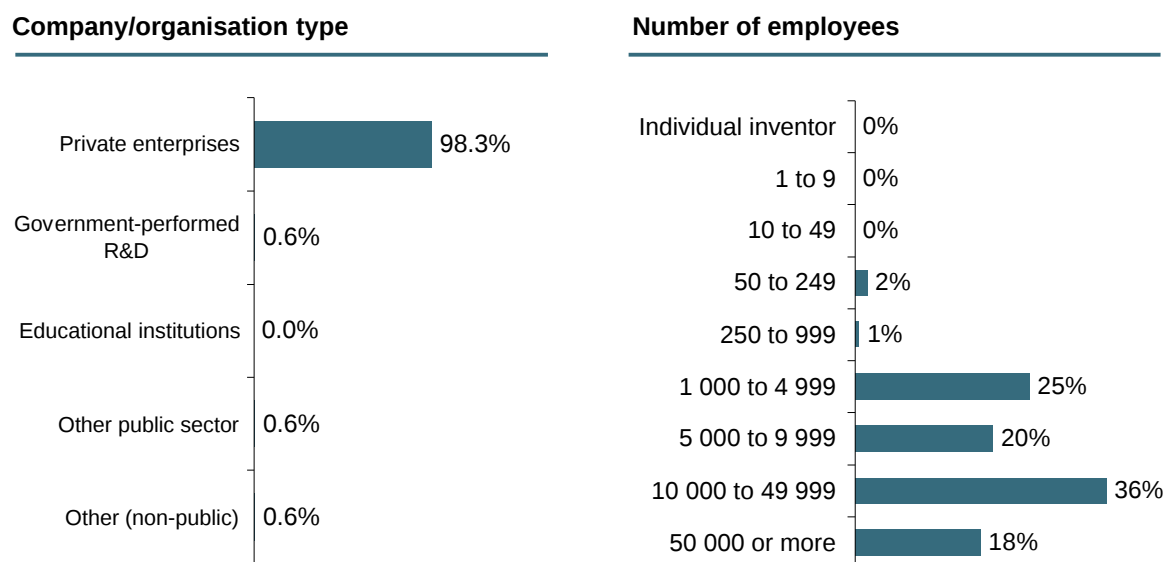


Figure 1: Biggest group by company/organisation type and numbers of employees

Broken down by residence bloc, the distributions are as shown in the following two tables:

Biggest group

By type of company/organisation

Total and breakdown by residence bloc

Residence bloc	Private enterprises	Government-performed R&D	Educational institutions	Other public sector	Other (non-public)	Grand total	No. of cases
Total	98.3%	0.6%	0.0%	0.6%	0.6%	100%	181
EP	97%	1%	0%	1%	0%	100%	77
JP	100%	0%	0%	0%	0%	100%	69
OT	100%	0%	0%	0%	0%	100%	3
US	97%	0%	0%	0%	3%	100%	32

Table 7: Biggest group by type of company/organisation and residence bloc

Biggest group

By number of employees

Total and breakdown by residence bloc

Residence bloc	Individual inventor	1 to 9	10 to 49	50 to 249	250 to 999	1 000 to 4 999	5 000 to 9 999	10 000 to 49 999	50 000 or more	Grand total	No. of cases
Total	0%	0%	0%	2%	1%	25%	20%	36%	18%	100%	174
EP	0%	0%	0%	4%	1%	23%	19%	32%	21%	100%	75
JA	0%	0%	0%	0%	0%	37%	27%	28%	7%	100%	67
OT	0%	0%	0%	0%	0%	0%	33%	0%	67%	100%	3
US	0%	0%	0%	0%	0%	3%	3%	66%	28%	100%	29

Table 8: Biggest group by number of employees and residence bloc

5.3 Respondents from the Random group

More than 95% of the Random group applicants are private enterprises. Educational institutions are ranked second with a percentage of 3.2%. Government-performed R&D accounts for 0.3%, other public and non-public institutions account for less than 1% each.

In terms of the numbers of employees, most companies in the Random group have at least 1 000 employees, accounting for 56% of the sample. However, the profile regarding the number of employees is more evenly distributed compared to the Biggest group distribution. It is clear that the Random group contains a larger proportion of small companies than the Biggest group does. There were no individual inventors from either Japan or US.

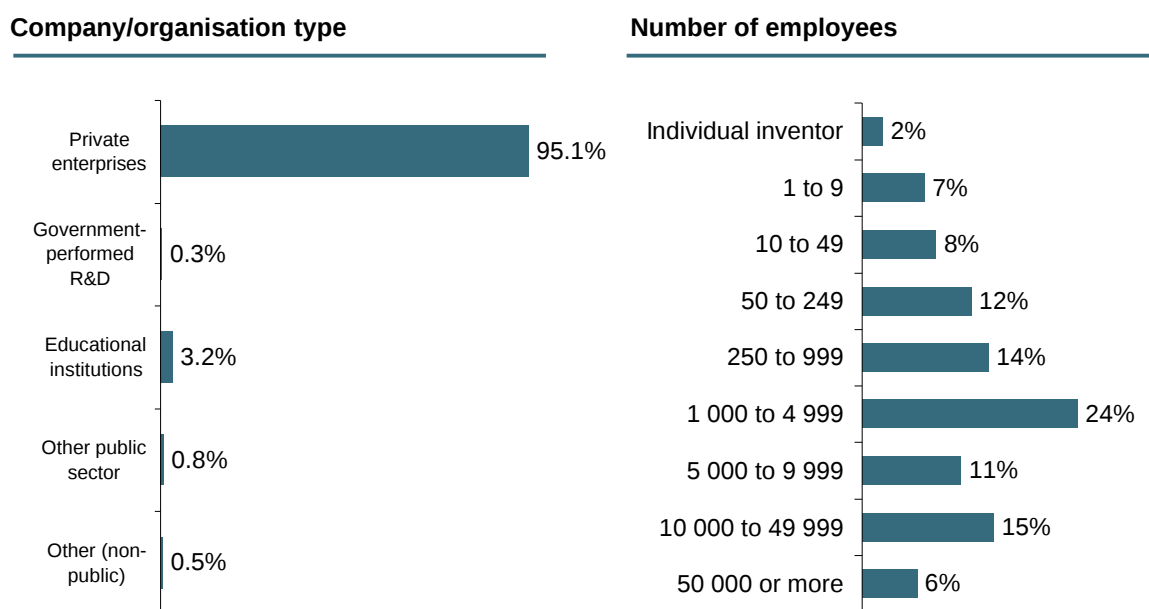


Figure 2: Random group by company/organisation type and number of employees

Random group

By type of company/organisation

Total and breakdown by residence bloc

Residence bloc	Private enterprises	Government-performed R&D	Educational institutions	Other public sector	Other (non-public)	Grand total	No. of cases
Total	95.1%	0.3%	3.2%	0.8%	0.5%	100%	592
EP	95%	1%	4%	1%	0%	100%	303
JA	99%	0%	1%	0%	0%	100%	147
OT	82%	0%	12%	6%	0%	100%	34
US	94%	0%	3%	1%	2%	100%	108

Table 9: Random group broken down by company type and residence bloc

Random group
By number of employees
Total and breakdown by residence bloc

Residence bloc	Individual inventor	1 to 9	10 to 49	50 to 249	250 to 999	1 000 to 4 999	5 000 to 9 999	10 000 to 49 999	50 000 or more	Grand total	No. of cases
Total	2%	7%	8%	12%	14%	24%	11%	15%	6%	100%	571
EP	4%	8%	9%	15%	16%	20%	9%	12%	7%	100%	292
JA	0%	0%	4%	6%	11%	43%	17%	16%	3%	100%	145
OT	3%	21%	12%	15%	12%	18%	12%	0%	6%	100%	33
US	0%	11%	10%	12%	14%	11%	9%	25%	9%	100%	101

Table 10: Random group broken down by persons employed and residence bloc

5.4 Respondents from the Smallest group [EPC residents only]

The distribution of respondents from the Smallest group by type of company/organisation is rather similar to the Random group distribution. More than 94% of the Smallest group applicants are private enterprises. Educational institutions are ranked second with a percentage of 3.4%. Government-performed R&D accounts for the remaining 2.3%.

In terms of the numbers of employees, most companies in the Smallest group have less than 250 employees, accounting for 74% of the sample. Clearly, Smallest group applicants are on average smaller than applicants from the Random group and much smaller than applicants from the Biggest group.

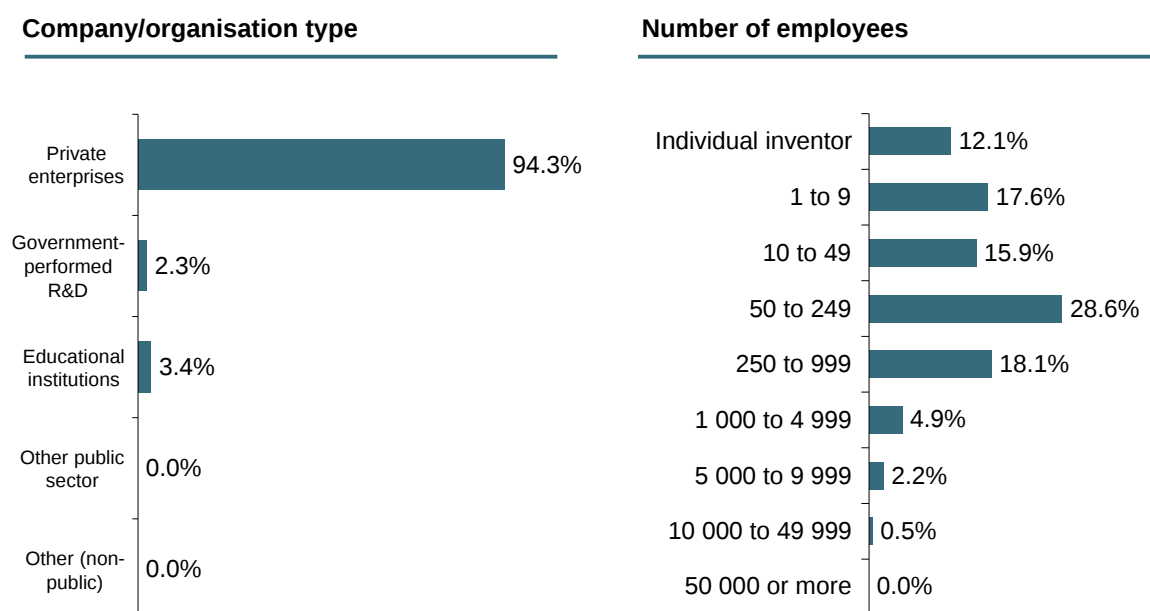


Figure 3: Smallest group by company/organisation type and number of employees

Smallest group

By type of company/organisation

Total and breakdown by residence bloc

Residence bloc	Private enterprises	Government-performed R&D	Educational institutions	Other public sector	Other (non-public)	Grand total	No. of cases
Total	94.3%	2.3%	3.4%	0.0%	0.0%	100%	176
EP	94%	2%	3%	0%	0%	100%	176

Table 11: Smallest group broken down by company type and residence bloc

Smallest group

By number of employees

Total and breakdown by residence bloc

Residence bloc	Individual inventor	1 to 9	10 to 49	50 to 249	250 to 999	1 000 to 4 999	5 000 to 9 999	10 000 to 49 999	50 000 or more	Grand total	No. of cases
Total	12%	18%	16%	29%	18%	5%	2%	1%	0%	100%	182
EP	12%	18%	16%	29%	18%	5%	2%	1%	0%	100%	182

Table 12: Smallest group broken down by persons employed and residence bloc

5.5 Estimated composition of the population of EPO applicants

Useful statistics to describe the populations of applicants and applications can be drawn from a combination of the Random group and the Smallest group. Estimating the composition of the population of EPO applicants from the Random & Smallest group fundamentally follows the *extended structural weights* procedure described in *Applicant Panel Survey 2006 report*⁴ to reduce the skewness of the sample towards larger applicants.

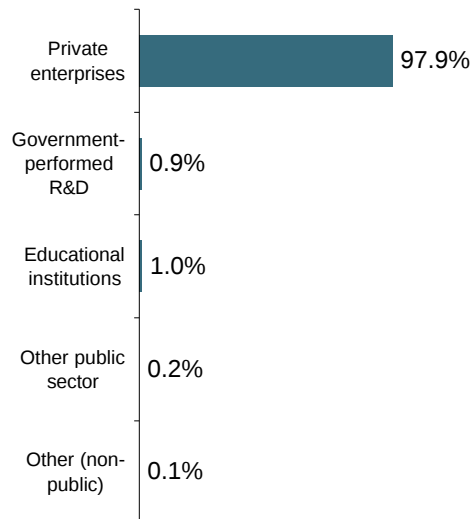
However, this year the procedure has been fine tuned to calculate residence bloc specific multiplicative factors and to compensate for the increased probability of selection of small EPC based applicants in the sample. For details, please see **Annex VII**.

It should be noted that extended structural weights carry very large weight spans – the largest weight being over 100 and the smallest weight less than 0.001. Thus, results based on extended structural weights need to be treated with extreme care as they can be very heavily influenced by a few or even a single high weight case.

Extended structural weights are applied for estimating distributions for the applicant population by company/organisation type and the number of employees, giving the following results:

⁴ cf. Applicant Panel Survey 2006 report: p. 18.

Company/organisation type



Number of employees

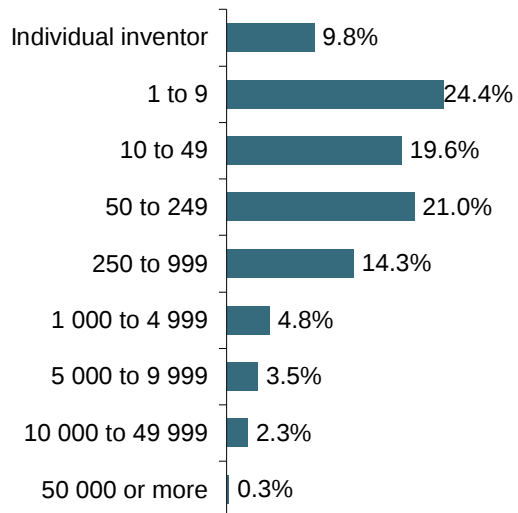
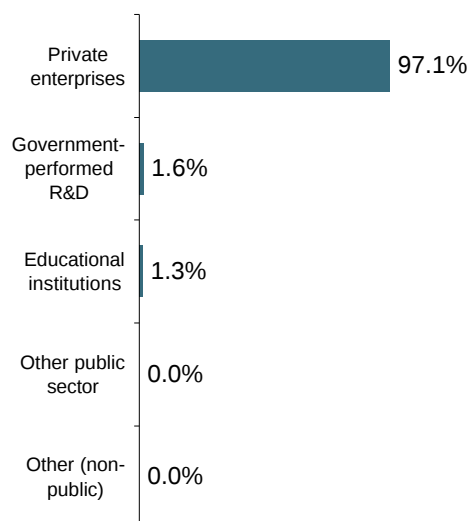


Figure 4: Estimated distribution of the EPO applicant population by company/organisation type and number of employees

Separated by residence bloc, the applicant distributions can be summarized as follows:

Company/organisation type



Number of employees

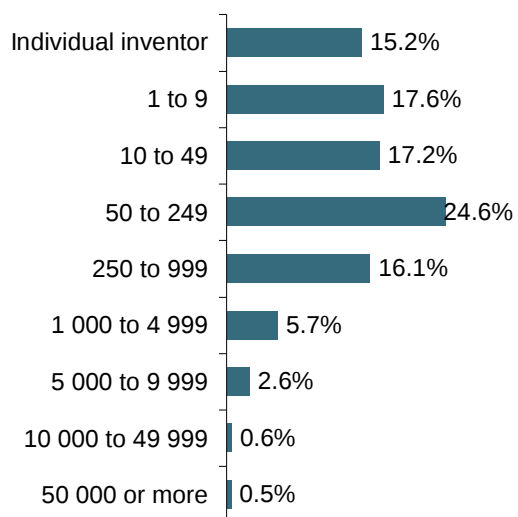
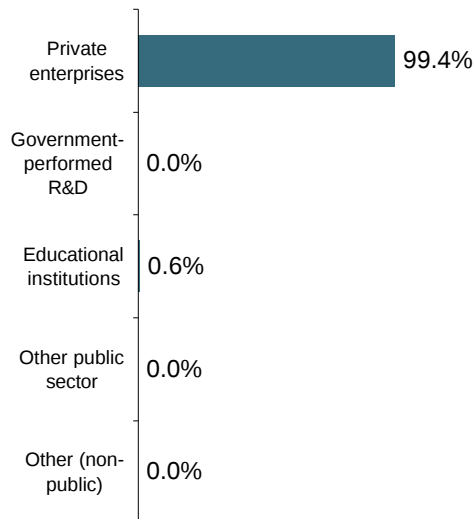


Figure 5: Estimated distribution of the EPO applicant population in the EPC (EP) residence bloc by company/organisation type and number of employees

Company/organisation type



Number of employees

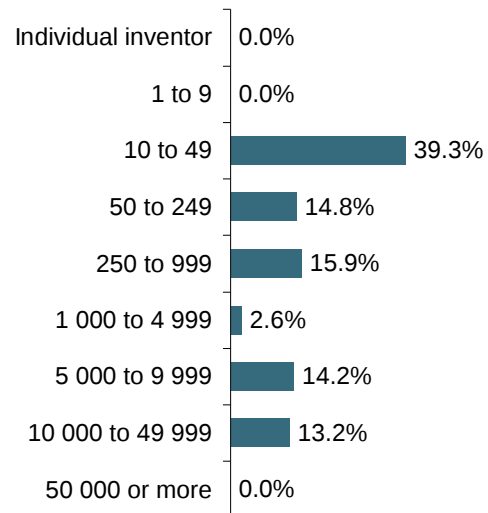
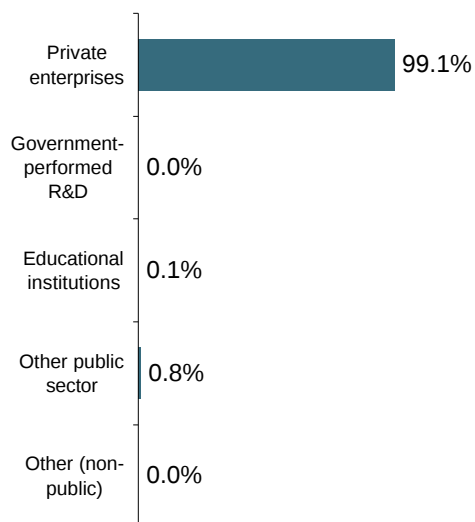


Figure 6: Estimated distribution of the EPO applicant population in the Japan (JA) residence bloc by company/organisation type and number of employees

Company/organisation type



Number of employees

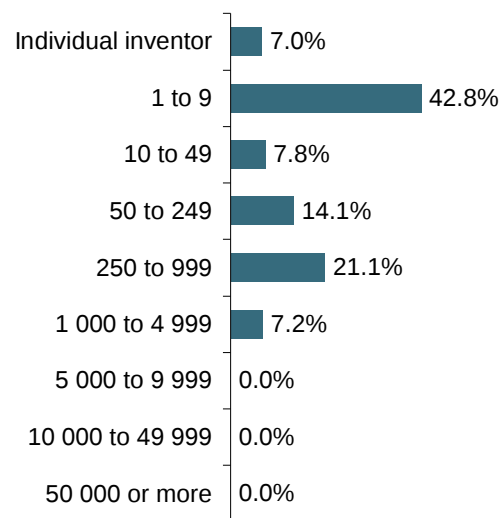
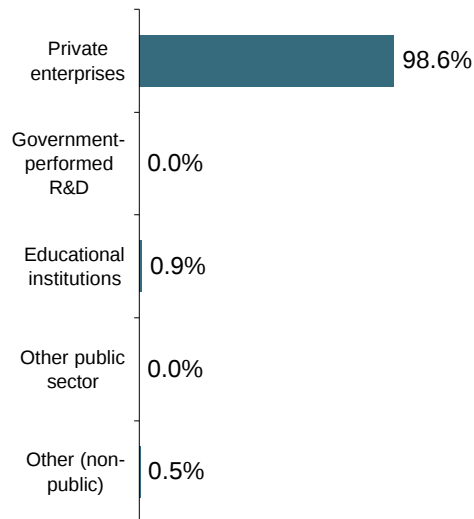


Figure 7: Estimated distribution of the EPO applicant population in the Others (OT) residence bloc by company/organisation type and number of employees

Company/organisation type



Number of employees

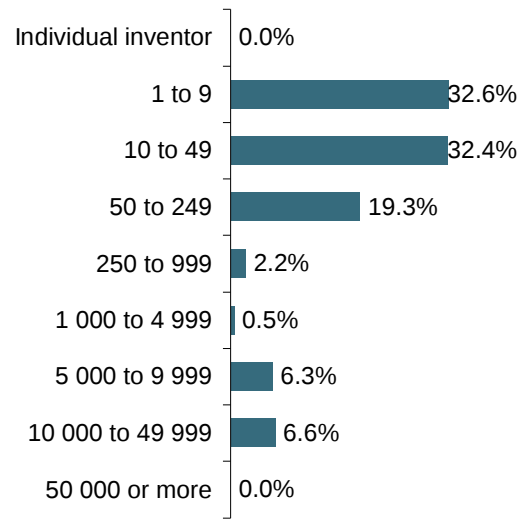


Figure 8: Estimated distribution of the EPO applicant population in the US residence bloc by company/organisation type and number of employees

As expected, the percentages are now considerably shifted towards smaller companies.

Estimation incorporating structural weights
By type of company/organisation
Total and breakdown by residence bloc

Residence bloc	Private enterprises	Government-performed R&D	Educational institutions	Other public sector	Other (non-public)	Total
Total	97.9%	0.9%	1.0%	0.2%	0.1%	100%
EP	97.1%	1.6%	1.3%	0.0%	0.0%	100%
JA	99.4%	0.0%	0.6%	0.0%	0.0%	100%
OT	99.1%	0.0%	0.1%	0.8%	0.0%	100%
US	98.6%	0.0%	0.9%	0.0%	0.5%	100%

Table 13: Estimated distribution of EPO applicants by type of company/organisation

Estimation incorporating structural weights
By number of employees
Total and breakdown by residence bloc

Residence bloc	Individual inventor	1 to 9	10 to 49	50 to 249	250 to 999	1 000 to 4 999	5 000 to 9 999	10 000 to 49 999	50 000 or more	Total
Total	9.8%	24.4%	19.6%	21.0%	14.3%	4.8%	3.5%	2.3%	0.3%	100%
EP	15.2%	17.6%	17.2%	24.6%	16.1%	5.7%	2.6%	0.6%	0.5%	100%
JA	0.0%	0.0%	39.3%	14.8%	15.9%	2.6%	14.2%	13.2%	0.0%	100%
OT	7.0%	42.8%	7.8%	14.1%	21.1%	7.2%	0.0%	0.0%	0.0%	100%
US	0.0%	32.6%	32.4%	19.3%	2.2%	0.5%	6.3%	6.6%	0.0%	100%

Table 14: Estimated distribution of EPO applicants by number of employees

5.6 EPO joint clusters

All applicants in the survey were asked to describe themselves in terms of membership of one or more of the EPO joint clusters (questionnaire **Section C**).

Figure 9 shows the number of responses per joint cluster in the Biggest group, **Figure 10** in the Random group and **Figure 11** shows the number of responses per joint cluster for the Smallest group. **Figure 12** shows the number of responses per joint cluster for Random & Smallest group.

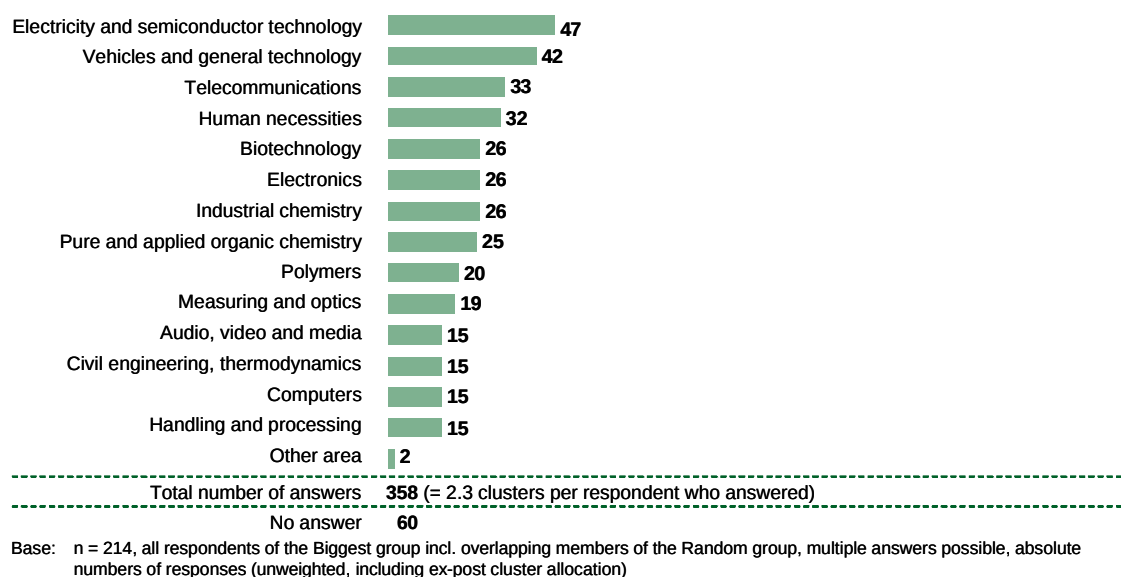


Figure 9: Number of responses per joint cluster (Biggest group)

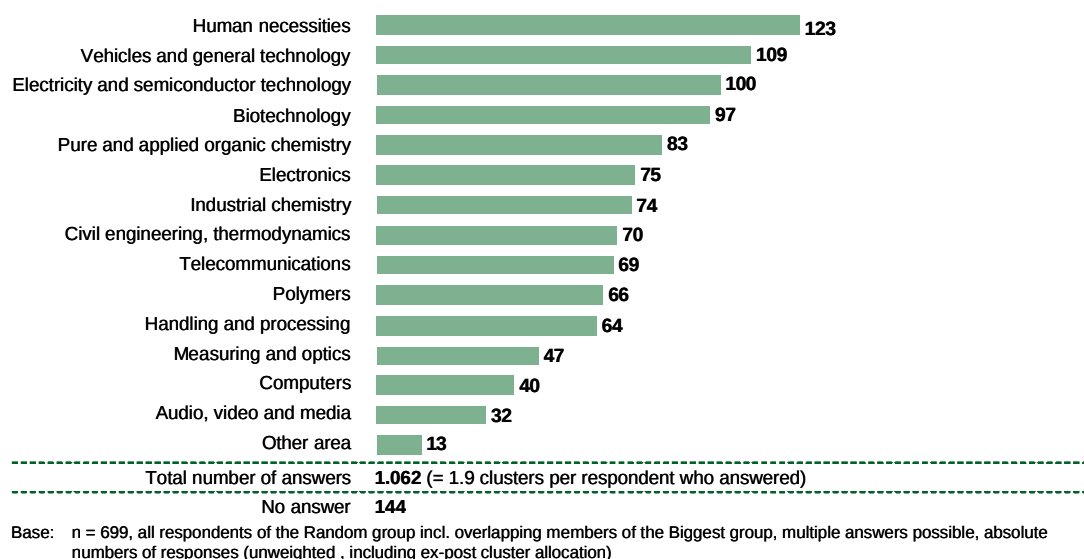


Figure 10: Number of responses per joint cluster (Random group)

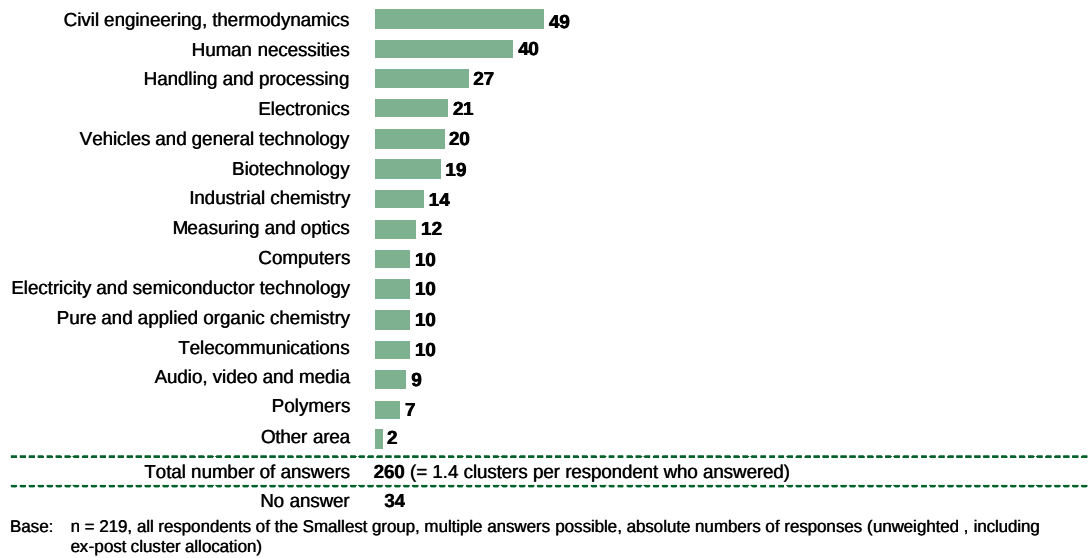


Figure 11: Number of responses per joint cluster (Smallest group)

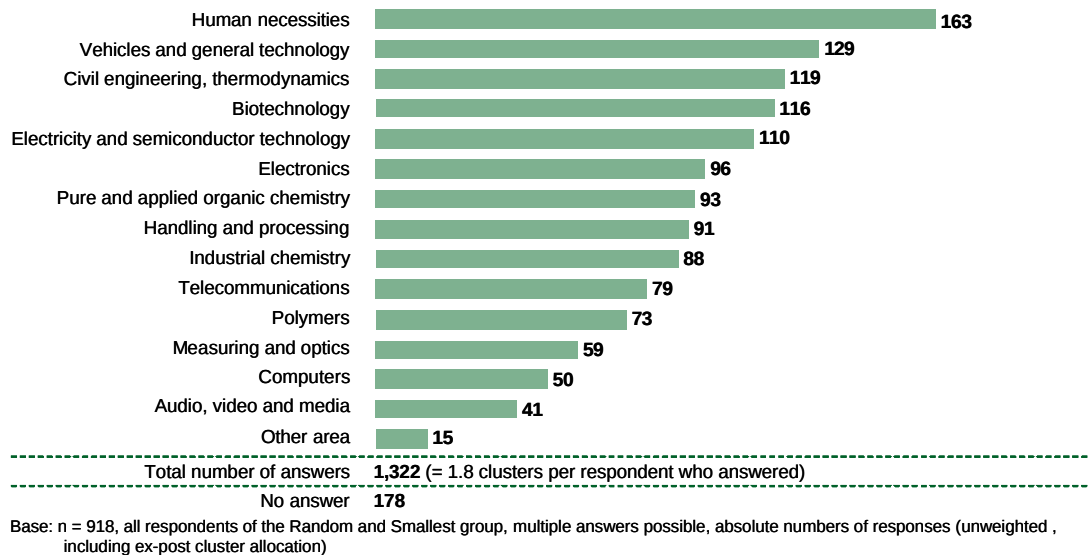
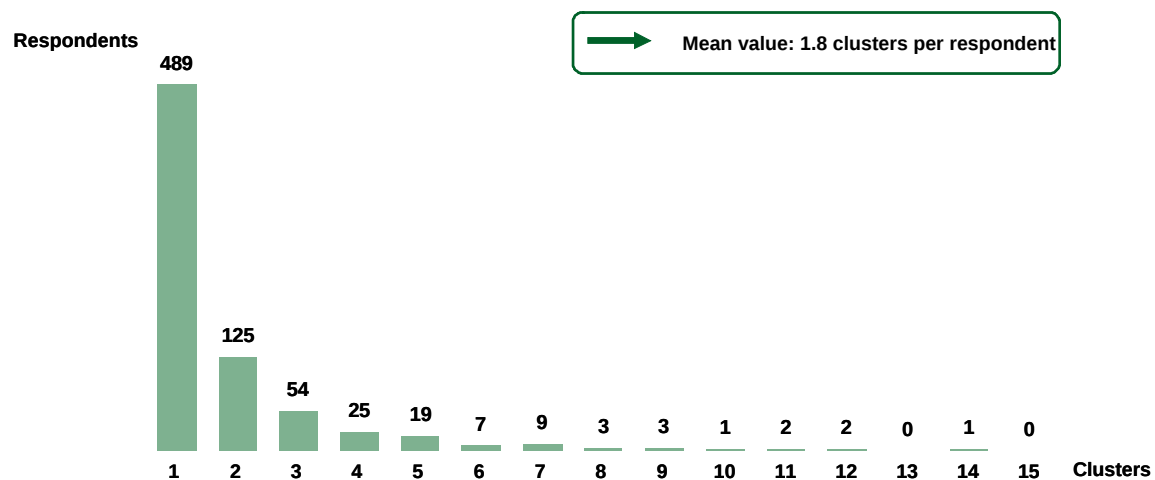


Figure 12: Number of responses per joint cluster (Random & Smallest group)

Figure 13 shows the distribution of responses in the Random & Smallest group by the number of clusters chosen. On average, the interviewees reported data for 1.8 joint clusters, almost the same as 1.9 as reported by the Random group. (The Random group in the previous 2006 survey also reported data for 1.9 joint clusters on average.)



Base: n = 740, all respondents of the Random and Smallest group who provided cluster information, absolute numbers of respondents (unweighted)

Figure 13: Numbers of joint clusters selected per respondent (Random & Smallest group)

Table 15 below indicates which combinations of clusters are cited most frequently. It shows a two-way matrix describing the joint cluster combinations selected by the interviewees of the Random & Smallest group. The table indicates pairwise combinations but, as Figure 13 has shown, responses sometimes indicate activities in considerably more than two joint clusters.

Joint cluster	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Other areas
1. Audio, video and media	41	6	4	10	13	15	2	5	7	11	5	7	19	10	1
2. Biotechnology	6	116	10	10	14	16	9	29	22	22	24	42	9	7	3
3. Civil engineering, thermodynamics	4	10	119	7	14	15	13	13	17	12	13	9	9	19	4
4. Computers	10	10	7	50	22	26	5	10	10	17	8	12	20	8	3
5. Electricity/semiconductor tech.	13	14	14	22	110	49	15	16	20	24	20	17	33	20	4
6. Electronics	15	16	15	26	49	96	12	20	19	26	16	16	36	19	5
7. Handling and processing	2	9	13	5	15	12	91	15	16	11	13	9	8	15	1
8. Human necessities	5	29	13	10	16	20	15	163	18	12	19	26	6	19	2
9. Industrial chemistry	7	22	17	10	20	19	16	18	88	20	32	26	10	16	4
10. Measuring and optics	11	22	12	17	24	26	11	12	20	59	15	22	20	10	4
11. Polymers	5	24	13	8	20	16	13	19	32	15	73	30	9	15	3
12. Pure/applied organic chemistry	7	42	9	12	17	16	9	26	26	22	30	93	15	12	5
13. Telecommunications	19	9	9	20	33	36	8	6	10	20	9	15	79	20	4
14. Vehicles and general technology	10	7	19	8	20	19	15	19	16	10	15	12	20	129	4
Other areas	1	3	4	3	4	5	1	2	4	4	3	5	4	4	15

Base: n = 740, all respondents in the Random and Smallest group who provided cluster information, absolute numbers of respondents (unweighted)

Table 15: Number of responses per joint cluster combination (two-way matrix, Random & Smallest group)

6 Methodology and Structure of Results

The main part of the survey covers the predictions of future patent filings and the basic approach was the same as in the previous surveys. For a detailed description of the methodology please refer to the *Applicant Panel Survey 2003 report*. The survey data from the main questions in **Section B** of the questionnaire are used to measure patent growth rates. For the Biggest group, growth rates are calculated as a **composite index**.⁵ Growth rates in the Random group and the Random & Smallest group are calculated as a **Q-index**.⁶

With the addition of the Smallest group in this year's survey and in order to make a combined Random & Smallest group that uses the additional resolution for small applicants, the Q-Index was modified so that the relative weight of small applicants in the combined group remains at the level given by the weighted Random group alone. For details of this modified weighting scheme, please refer to **Annex VII**.

A natural logarithmic transformation was applied to the data before calculating the Q-index.⁷ As introduced last year, a finite population correction (fpc) has been included when calculating the confidence limits for forecasts of total patent filings. Details on the construction of the fpc are given in the Applicant Panel Survey 2006 report⁸. The fpc values were obtained as follows from the EPO database counts of Euro-direct and Euro-PCT-RP filings.

Residence bloc	fpc
Total	0.24
EP	0.19
JA	0.54
OT	0.16
US	0.18

Finite population correction factor values shown here apply to the whole sample (Biggest combined with Random and Smallest groups) and were used in the current analysis. The factors for the Random & Smallest group alone are slightly smaller, but insignificantly so. In fact the fpc that was used is conservative because it is based on database counts for filings by respondents, while the reported counts for base year filings by the respondents were somewhat higher (see **Annex IX**). Respondents often answer on behalf of larger corporate entities than those represented by the applicant numbers for which they were selected. This is an advantage in that it increases the coverage of the population by the sample.

When analysing data subsets, e.g. breakdowns by residence blocs or joint clusters, cases arise where the sample size falls below a critical threshold of five or less respondents. In such cases, both the composite index and Q-index are replaced by an average growth value taken from the corresponding analysis on the next available level of aggregation. In the results tables, the replacement of growth indices with average values is marked with an asterisk (*).

⁵ cf. Applicant Panel Survey 2001 report: Annex III.

⁶ cf. Applicant panel Survey 2002 report: Section IV.1, Annex IV.

⁷ cf. Applicant panel Survey 2002 report: Annex IV.

⁸ cf. Applicant panel Survey 2006 report: Annex VII, page 79.

Once the growth indices were calculated based on the survey results, they were multiplied by the actual numbers of filings in the base year 2006 in order to generate explicit forecasts. Data on Euro-direct, PCT-IP and Euro-PCT-RP filings for 2006 and 2007 were supplied by the EPO on January 31, 2008, and reflect the state of knowledge as of that date. The average numbers of filings in the base year that are reported by the respondents considerably exceed the numbers of filings in the EPO database for the same respondents.

The patent filing predictions are presented in various **breakdown scenarios**, e.g. with forecasts by residence bloc or joint cluster. Based on the resulting forecasts by breakdown, an overall growth forecast is derived for each year. Of particular interest for the EPO are filing predictions on the level of the 14 joint clusters. As the Random group and Random & Smallest group constitute random samples across applications, the responses can be disaggregated by joint cluster as an alternative to the breakdown by residence bloc. A breakdown of the responses by both factors simultaneously is not provided, as there would not have been enough data in the subdivided groups to allow for reliable growth estimates.

In many cases, the responses on growth forecasts in the questionnaire (**Section B**) made it necessary for the researchers to validate the responses, usually by conducting a clarifying conversation with the respondent. In some cases, more substantial **qualifying comments** were given for the interpretation of the results. These cases are specifically marked for the data analyses in order to forecast growth estimates including and excluding the respective responses.

As a means of analysing and reducing distortions by outliers, the technique of **winsorisation** was applied.⁹ Thereby, the data were adjusted by replacing growth indices after logarithmic transformation. Indices that fall below the 5% percentile and indices that lie above the 95% percentile are replaced by the respective percentile. The adjusted data are then used for carrying out Q-index calculations according to the various breakdown scenarios. The winsorisation analyses show that no individual outliers are excessively distorting the results. Overall, the exercise supports the growth forecasts obtained. However, the resulting tables do not contribute further insights and are not included in this report.

Nonparametric bootstrapping was carried out to validate the stability of the forecast results in terms of the analytically calculated standard errors of the growth indices¹⁰. Again this year, the bootstrap results confirm the validity of the analytic formulae that are routinely used throughout the report. Due to limited further insights, the bootstrapping analysis results are not included in this report.

In the survey, the principal questions of interest for the EPO concern forecasts of future Euro-direct filings, PCT-IP filings, total filings (Euro-direct and PCT-IP), and Euro-PCT-RP filings. Forecast results for the first three types of filings at the EPO are presented in **Section 7**. Results on forecasts of Euro-PCT-RP filings are covered in **Section 8**.

Annex VI (Section 15) gives an analysis of the approximate size of budget items (including R&D) per applicant and their relations to the numbers of first patent filings in each joint cluster. In addition, findings on withdrawal activity and motivations for withdrawals are presented. In this section, structural weighting is applied in the manner described in **Section 5.5** above.

⁹ cf. Applicant Panel Survey 2006: Section 7.5.

¹⁰ cf. Applicant Panel Survey 2006: Section 7.5.

7 Forecasts for patent filings at the EPO

In **Sections 7.1, 7.2 and 7.3**, results for the Biggest group, the Random group and the Random & Smallest group are presented respectively. Detailed results for all sample groupings broken down by joint cluster are discussed in **Section 7.4**. An assessment of the results presented, a recommendation of which forecast to use and a comparison with previous panel surveys is provided in **Section 7.5**. For all tables in the following sections, corresponding tables with details on the numbers of cases can be found in **Annex IV (Section 13)**.

7.1 Biggest group

The Biggest group is based on a sample of 425 selected applicants for Euro-direct filings and Euro PCT-RP filings, of which 214 responded to the Applicant Panel Survey 2007.

It was considered appropriate to calculate growth rates for the Biggest group as a composite index (CI).¹¹ Detailed information on the forecasts by filing type and route are shown in **Table 16** and **Table 17**. No confidence limits are given for the estimates as this is a survey of the intentions of the Biggest applicants and not a random statistical sample. The forecasts for the absolute number of both Euro-direct and PCT-IP filings are illustrated in **Figure 14**. The numbers of patent filings are based on the forecasts with no subsidiary breakdown.

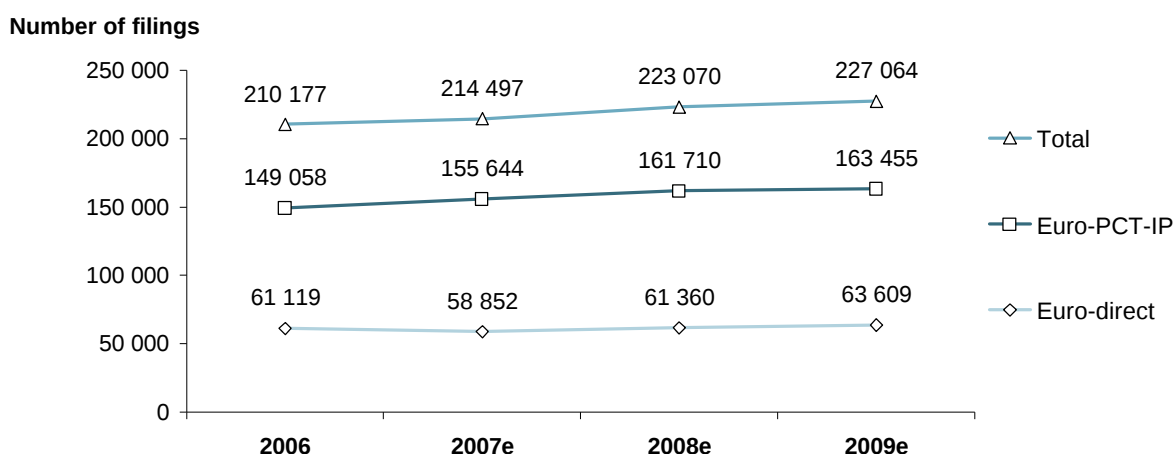


Figure 14: Forecasts for EPO filings – Biggest group with no subsidiary breakdown

¹¹ cf. Applicant Panel Survey 2001 report: Annex III.

Biggest group
No subsidiary breakdown
Composite indices

			Year							
			2006		2007		2008		2009	
Filing type	Filing route	Res. bloc	Actual filings	Index 07	Predicted filings	Actual filings	Index 08	Predicted filings	Index 09	Predicted filings
First	Euro-direct	Total	18 384	0.9572	17 597	20 170	1.0007	18 397	1.0345	19 018
	Euro-PCT-IP	Total	12 715	1.0571	13 441	14 078	1.0677	13 576	1.0844	13 788
Subsequent	Euro-direct	Total	42 735	0.9654	41 256	42 511	1.0053	42 963	1.0434	44 592
	Euro-PCT-IP	Total	136 343	1.0430	142 204	143 755	1.0865	148 135	1.0977	149 666
All	Euro-direct	Total	61 119		58 852	62 681		61 360		63 609
	Euro-PCT-IP	Total	149 058		155 644	157 833		161 710		163 455
Grand total		Total	210 177		214 497	220 514		223 070		227 064
Growth from 2006					2.1%			6.1%		8.0%
Implied %Euro-PCT-IP			70.9%		72.6%	71.6%		72.5%		72.0%

Table 16: Forecasts for EPO filings – Biggest group with no subsidiary breakdown

Biggest group
Breakdown by residence bloc
Composite indices

			Year							
			2006	2007		2008		2009		
Filing type	Filing route	Res. bloc	Actual filings	Index 07	Predicted filings	Actual filings	Index 08	Predicted filings	Index 09	Predicted filings
First	Euro-direct	EP	15 829	0.9168	14 513	17 536	0.9717	15 381	0.9944	15 741
		JA	287	0.9420	270	303	0.9630	276	0.9790	281
		OT	1 194	0.9572 *	1 143	1 309	1.0007 *	1 195	1.0345 *	1 235
		US	1 074	0.9322	1 001	1 022	0.8631	927	0.8991	966
		Total	18 384		16 927	20 170		17 779		18 222
First	Euro-PCT-IP	EP	3 451	1.0494	3 621	3 876	1.1465	3 957	1.1817	4 078
		JA	2 642	1.0687	2 824	2 817	1.0504	2 775	1.0454	2 762
		OT	4 828	1.0571 *	5 104	5 565	1.0677 *	5 155	1.0844 *	5 236
		US	1 794	1.1009	1 975	1 820	1.0794	1 936	1.1389	2 043
		Total	12 715		13 524	14 078		13 823		14 119
Subsequent	Euro-direct	EP	18 569	0.9953	18 482	17 980	1.0780	20 017	1.0854	20 154
		JA	10 630	0.9413	10 006	10 809	0.9661	10 270	1.0152	10 792
		OT	4 863	0.9654 *	4 695	5 404	1.0053 *	4 889	1.0434 *	5 074
		US	8 673	0.9686	8 401	8 318	0.9542	8 276	1.0450	9 064
		Total	42 735		41 583	42 511		43 451		45 084
Subsequent	Euro-PCT-IP	EP	47 289	1.0148	47 988	49 855	1.0753	50 851	1.1007	52 051
		JA	24 398	1.1023	26 895	26 808	1.1395	27 802	1.1601	28 305
		OT	15 603	1.0430 *	16 274	17 333	1.0865 *	16 952	1.0977 *	17 128
		US	49 053	0.9843	48 281	49 759	1.0228	50 171	0.9975	48 931
		Total	136 343		139 437	143 755		145 777		146 415
All	Euro-direct	EP	34 398		32 994	35 516		35 398		35 895
		JA	10 917		10 277	11 112		10 546		11 073
		OT	6 057		5 838	6 713		6 084		6 309
		US	9 747		9 402	9 340		9 203		10 029
		Total	61 119		58 510	62 681		61 231		63 307
All	Euro-PCT-IP	EP	50 740		51 609	53 731		54 808		56 129
		JA	27 040		29 718	29 625		30 577		31 067
		OT	20 431		21 377	22 898		22 107		22 363
		US	50 847		50 256	51 579		52 108		50 974
		Total	149 058		152 961	157 833		159 600		160 534
Grand total	Total	EP	85 138		84 604	89 247		90 206		92 024
		JA	37 957		39 995	40 737		41 123		42 140
		OT	26 488		27 215	29 611		28 191		28 673
		US	60 594		59 658	60 919		61 310		61 004
		Total	210 177		211 471	220 514		220 831		223 841
Growth from 2006					0.6%			5.1%		6.5%
Implied Euro-PCT-IP					72.3%	71.6%		72.3%		71.7%

Table 17: Forecasts for EPO filings – Biggest group, broken down by residence bloc

7.2 Random group

The Random group is based on a sample of 1 849 selected applicants for Euro-direct filings and Euro PCT-RP filings, of which 699 responded to the survey.

For responses from the Random group, the Q-index method was used following logarithmic transformation of the data.¹² The resulting forecasts for numbers of patent filings calculated for the Random group without a breakdown by residence bloc are illustrated in **Figure 15** and **Table 18**. **Table 19** shows details on the forecasts by filing type and route where the four residence blocs Europe (EP), Japan (JA), Other (OT) and the US are differentiated. All result tables for the Random group analyses show Q-indices with their standard errors¹³, the resulting filing forecasts and the 95% confidence intervals based thereon.

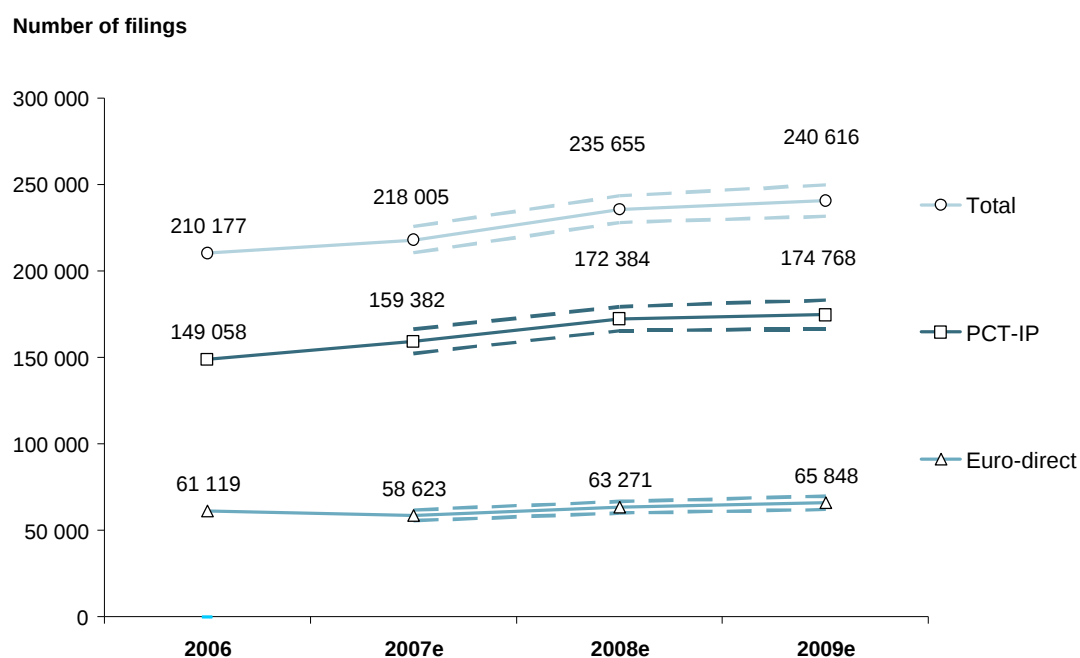


Figure 15: Forecasts for EPO filings – Random group without breakdown by residence bloc (dotted lines illustrate 95% confidence limits)

Various forecasts for EPO filings based on the Random group sample are presented, resulting from different residence bloc breakdowns, combinations of Euro-direct and PCT-IP filings and the inclusion/exclusion of respondents with qualifying comments (cf. **Section 6**). The corresponding analysis to **Table 18**, with no subsidiary breakdown, was used for the recommended filing forecasts in the 2005 report. This recommendation was based mostly on the narrower confidence interval of the forecasts and better adherence to known filing figures of the survey year compared to the analysis broken down by residence bloc. Comparing the width of the confidence intervals shown in **Table 18** (analysis with no subsidiary breakdown) and **Table 19** (analysis with breakdown by residence bloc), this holds true for this year's predictions once again.

¹² cf. Applicant Panel Survey 2002 report: Section IV.1, Annex IV.

¹³ In Table 18 and following tables based on analysis of randomly sampled groups, the reported quantities S.E. 07, S.E. 08, S.E. 09 are standard errors of the logarithms of the respective Q-Index estimates. cf. Applicant Panel Survey 2002 report, Annex IV.

To address the shifting of filings between different filing routes, alternative breakdown scenarios have been analysed and are presented in **Table 20 to 25**. **Table 20** and **Table 21** show the growth forecasts when Euro-direct and Euro-PCT-IP filing routes are combined with and without breakdown by residence bloc respectively. The forecasts given in **Table 22** are based on an analysis where Euro-direct and Euro-PCT-IP filings are combined for the US residence bloc only. In contrast to the previous year, the three analyses combining Euro-direct and Euro-PCT-IP filings do not result in narrower confidence limits compared to the previous two analyses. There remains the possibility of US applicants confusing first and subsequent filings due to the fact that the distinction is not entirely clear in the USPTO process. To address this possibility **Table 23** shows predictions obtained by combining first and subsequent filing numbers for the US bloc only.

As in previous applicant panel survey reports, a further analysis was carried out with no subsidiary breakdown, but after excluding cases in which researchers made qualifying comments (**Table 24**). The analysis excluding cases with qualifying comments was repeated with a breakdown by residence bloc combining the residence blocs "EP" and "OT" to account for the critical sample size of the "Other" category (**Table 25**).

Random group
No subsidiary breakdown
Q-Indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year											
			2006			2007			2008			2009		
Filing type	Filing route	Res. bloc	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings	
First	Euro-direct	Total	18 384	0.9274	0.0542	17 049	20 170	1.0247	0.0503	18 838	1.0708	0.0566	19 686	
		LCL				15 234				16 979			17 497	
		UCL				18 865				20 698			21 877	
First	Euro-PCT-IP	Total	12 715	1.1260	0.0340	14 318	14 078	1.1915	0.0335	15 150	1.2536	0.0394	15 940	
		LCL				13 364				14 155			14 706	
		UCL				15 272				16 145			17 177	
Subsequent	Euro-direct	Total	42 735	0.9728	0.0297	41 573	42 511	1.0397	0.0318	44 433	1.0802	0.0340	46 162	
		LCL				39 154				41 660			43 083	
		UCL				43 993				47 205			49 241	
Subsequent	Euro-PCT-IP	Total	136 343	1.0640	0.0242	145 065	143 755	1.1532	0.0226	157 234	1.1649	0.0264	158 829	
		LCL				138 192				150 252			150 596	
		UCL				151 937				164 216			167 061	
All	Euro-direct	Total	61 119			58 623	62 681			63 271			65 848	
		LCL				55 597				59 933			62 070	
		UCL				61 648				66 609			69 626	
All	Euro-PCT-IP	Total	149 058			159 382	157 833			172 384			174 768	
		LCL				152 444				165 331			166 444	
		UCL				166 321				179 437			183 093	
Grand total			Total	210 177			218 005	220 514			235 655			240 616
			LCL				210 436				227 852			231 477
			UCL				225 574				243 458			249 757
Growth from 2006						3.7%					12.1%			14.5%
Implied % Euro-PCT-IP				70.9%		73.1%	71.6%			73.2%			72.6%	
Deviation in % of forecast						3.5%				3.3%			3.8%	

Table 18: Forecasts for EPO filings – Random group with no subsidiary breakdown

Random group
Breakdown by residence bloc
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year											
			2006	2007				2008				2009		
Filing type	Filing route	Res. bloc	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings	
First	Euro-direct	EP	15 829	1.0076	0.0506	15 949	17 536	1.1243	0.0768	17 796	1.1805	0.0885	18 687	
		JA	287	0.9607	0.0469	276	303	0.9696	0.0545	278	1.0115	0.0620	290	
		OT	1 194	1.0455	0.0450	1 248	1 309	1.1037	0.0591	1 318	1.1843	0.0787	1 414	
		US	1 074	0.6995	0.2021	751	1 022	0.8085	0.1438	868	0.8352	0.1519	897	
		Total	18 384			18 224	20 170			20 261			21 288	
		LCL				16 606			17 553			18 007		
		UCL				19 842			22 969			24 569		
First	Euro-PCT-IP	EP	3 451	1.2309	0.0531	4 248	3 876	1.3047	0.0479	4 502	1.3895	0.0564	4 795	
		JA	2 642	1.1124	0.0498	2 939	2 817	1.1228	0.0525	2 966	1.1488	0.0626	3 035	
		OT	4 828	0.9594	0.0664	4 632	5 565	1.0073	0.0548	4 863	1.0193	0.0588	4 921	
		US	1 794	1.0698	0.0479	1 919	1 820	1.2109	0.0719	2 172	1.3130	0.0918	2 355	
		Total	12 715			13 738	14 078			14 505			15 107	
		LCL				12 915			13 704			14 144		
		UCL				14 561			15 305			16 070		
Subsequent	Euro-direct	EP	18 569	1.0279	0.0522	19 087	17 980	1.0987	0.0527	20 401	1.1515	0.0608	21 382	
		JA	10 630	0.9358	0.0334	9 948	10 809	1.0052	0.0391	10 685	1.0262	0.0380	10 909	
		OT	4 863	1.0784	0.0918	5 244	5 404	1.0643	0.0934	5 176	1.0783	0.0974	5 244	
		US	8 673	0.8947	0.0801	7 760	8 318	0.9546	0.0885	8 280	1.0190	0.0911	8 837	
		Total	42 735			42 039	42 511			44 541			46 372	
		LCL				39 459			41 689			43 098		
		UCL				44 619			47 393			49 646		
Subsequent	Euro-PCT-IP	EP	47 289	1.0532	0.0395	49 804	49 855	1.1788	0.0448	55 742	1.2136	0.0498	57 388	
		JA	24 398	1.1571	0.0298	28 230	26 808	1.1812	0.0228	28 820	1.1925	0.0178	29 096	
		OT	15 603	0.9780	0.1299	15 260	17 333	1.2426	0.0619	19 389	1.3254	0.0991	20 680	
		US	49 053	0.9509	0.0500	46 644	49 759	1.0517	0.0483	51 588	1.0064	0.0806	49 367	
		Total	136 343			139 938	143 755			155 539			156 531	
		LCL				132 586			148 116			146 022		
		UCL				147 291			162 961			167 040		
All	Euro-direct	EP	34 398			35 036	35 516			38 198			40 069	
		JA	10 917			10 224	11 112			10 963			11 199	
		OT	6 057			6 493	6 713			6 493			6 658	
		US	9 747			8 511	9 340			9 148			9 734	
		Total	61 119			60 263	62 681			64 802			67 661	
		LCL				57 217			60 869			63 026		
		UCL				63 309			68 735			72 296		
All	Euro-PCT-IP	EP	50 740			54 052				60 245			62 184	
		JA	27 040			31 169				31 786			32 131	
		OT	20 431			19 892				24 252			25 601	
		US	50 847			48 563				53 760			51 722	
		Total	149 058			153 676	157 833			170 043			171 638	
		LCL				146 278			162 578			161 085		
		UCL				161 075			177 508			182 191		
Grand total	Total	EP	85 138			89 088				98 442			102 253	
		JA	37 957			41 393				42 749			43 330	
		OT	26 488			26 385				30 746			32 259	
		US	60 594			57 074				62 908			61 457	
		Total	210 177			213 939	220 514			234 845			239 299	
		LCL				205 938			226 407			227 773		
		UCL				221 941			243 283			250 825		
Growth from 2006						1.8%				11.7%		13.9%		
Implied Euro-PCT-IP						71.8%	71.6%			72.4%		71.7%		
Deviation in % of forecast						3.7%				3.6%		4.8%		

Table 19: Forecasts for EPO filings – Random group broken down by residence bloc

Random group
No subsidiary breakdown
Q-Indices
Euro-direct and Euro-PCT-IP filings combined

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year										
			2006		2007				2008			2009	
Filing type	Filing route	Res. bloc	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings
First	All	Total	31 099	0.9704	0.0440	30 180	34 248	1.0209	0.0438	31 750	1.0556	0.0479	32 828
		LCL				27 574				29 022			29 742
		UCL				32 786				34 478			35 914
Subsequent	All	Total	179 078	1.0097	0.0199	180 806	186 266	1.0780	0.0212	193 053	1.1053	0.0229	197 939
		LCL				173 748				185 023			189 033
		UCL				187 865				201 083			206 845
Grand total		Total	210 177			210 986	220 514			224 803			230 766
		LCL				203 462				216 323			221 341
		UCL				218 510				233 284			240 192
Growth from 2006						0.4%				7.0%			9.8%
Deviation in % of forecast						3.6%				3.8%			4.1%

Table 20: Forecasts for EPO filings – Random group with no subsidiary breakdown (Euro-direct and PCT-IP filings combined)

Random group
Breakdown by residence bloc
Q-indices
Euro-direct and Euro-PCT-IP filings combined

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year										
			2006		2007			2008			2009		
Filing type	Filing route	Res. bloc	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings
First	All	EP	19 280	1.0463	0.0523	20 173	21 412	1.1013	0.0776	21 233	1.1318	0.0862	21 822
		JA	2 929	1.0526	0.0394	3 083	3 120	1.0582	0.0514	3 100	1.0854	0.0564	3 179
		OT	6 022	1.0203	0.0529	6 144	6 874	1.0346	0.0632	6 230	1.0877	0.0661	6 550
		US	2 868	0.7524	0.1439	2 158	2 842	0.8542	0.1219	2 450	0.8974	0.1328	2 574
		Total	31 099			31 558	34 248			33 012			34 125
		LCL				29 293			29 611			30 245	
Subsequent	All	EP	65 858	1.0521	0.0390	69 291	67 835	1.1171	0.0419	73 573	1.1432	0.0469	75 287
		JA	35 028	1.0382	0.0178	36 366	37 617	1.0913	0.0201	38 227	1.1225	0.0205	39 320
		OT	20 466	0.9906	0.1043	20 274	22 737	1.0787	0.0626	22 077	1.0642	0.0535	21 781
		US	57 726	0.8835	0.0596	51 001	58 077	0.9806	0.0586	56 603	1.0056	0.0628	58 050
		Total	179 078			176 932	186 266			190 481			194 437
		LCL				167 828			181 068			184 085	
Grand total	Total	EP	85 138			89 464	89 247			94 806			97 109
		JA	37 957			39 449	40 737			41 327			42 500
		OT	26 488			26 418	29 611			28 308			28 330
		US	60 594			53 159	60 919			59 053			60 624
		Total	210 177			208 490	220 514			223 493			228 562
		LCL				199 108			213 485			217 507	
Growth from 2006						-0.8%				6.3%		8.7%	
Deviation in % of forecast						4.5%				4.5%		4.8%	

Table 21: Forecasts for EPO filings – Random group, broken down by residence bloc (Euro-direct and PCT-IP filings combined)

Random group
Breakdown by residence bloc
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year										
			2006	2007				2008			2009		
Filing type	Filing route	Res. bloc	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings
First	Euro-direct	EP	15 829	1.0076	0.0506	15 949	17 536	1.1243	0.0768	17 796	1.1805	0.0885	18 687
		JA	287	0.9607	0.0469	276	303	0.9696	0.0545	278	1.0115	0.0620	290
		OT	1 194	1.0455	0.0450	1 248	1 309	1.1037	0.0591	1 318	1.1843	0.0787	1 414
		Total \ US	17 310			17 473	19 148			19 392			20 391
		LCL				15 884				16 696			17 121
		UCL				19 062				22 089			23 666
First	Euro-PCT-IP	EP	3 451	1.2309	0.0531	4 248	3 876	1.3047	0.0479	4 502	1.3895	0.0564	4 795
		JA	2 642	1.1124	0.0498	2 939	2 817	1.1228	0.0525	2 966	1.1488	0.0626	3 035
		OT	4 828	0.9594	0.0664	4 632	5 565	1.0073	0.0548	4 863	1.0193	0.0588	4 921
		Total \ US	10 921			11 819	12 258			12 332			12 751
		LCL				11 016				11 593			11 888
		UCL				12 622				13 072			13 611
Subsequent	Euro-direct	EP	18 569	1.0279	0.0522	19 087	17 980	1.0987	0.0527	20 401	1.1515	0.0608	21 382
		JA	10 630	0.9358	0.0334	9 948	10 809	1.0052	0.0391	10 685	1.0262	0.0380	10 909
		OT	4 863	1.0784	0.0918	5 244	5 404	1.0643	0.0934	5 176	1.0783	0.0974	5 244
		Total \ US	34 062			34 279	34 193			36 262			37 535
		LCL				32 008				33 802			34 672
		UCL				36 551				38 721			40 399
Subsequent	Euro-PCT-IP	EP	47 289	1.0532	0.0395	49 804	49 855	1.1788	0.0448	55 742	1.2136	0.0498	57 388
		JA	24 398	1.1571	0.0298	28 230	26 808	1.1812	0.0228	28 820	1.1925	0.0178	29 096
		OT	15 603	0.9780	0.1299	15 260	17 333	1.2426	0.0619	19 389	1.3254	0.0991	20 680
		Total \ US	87 290			93 294	93 996			103 951			107 164
		LCL				87 542				98 365			100 168
		UCL				99 046				109 537			114 166
First+Subsequent	Euro-direct+ Euro-PCT-IP	US	60 594	0.8359	0.0710	50 649	60 919	0.9664	0.0695	58 560	0.9978	0.0702	60 462
		LCL				43 570				50 557			52 111
		UCL				57 727				66 563			68 812
Grand total	Total	EP	85 138			89 088	89 247			98 442			102 253
		JA	37 957			41 393	40 737			42 749			43 330
		OT	26 488			26 385	29 611			30 746			32 259
		US	60 594			50 649	60 919			58 560			60 462
		Total	210 177			207 514	220 514			230 497			238 304
		LCL				190 020				211 013			215 961
		UCL				225 007				249 982			260 646
Growth from 2006						-1.3%				9.7%			13.4%
Deviation in % of forecast						8.4%				8.5%			9.4%

Table 22: Forecasts for EPO filings – Random group, broken down by residence bloc (Euro-direct and PCT-IP filings combined for US residence bloc only)

Random group
Breakdown by residence bloc
Q-indices
Euro-direct and Euro-PCT-IP filings combined

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year										
			2006	2007				2008			2009		
Filing type	Filing route	Res. bloc	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings
First	All	EP	19 280	1.0463	0.0523	20 173	21 412	1.1013	0.0776	21 233	1.1318	0.0862	21 822
		JA	2 929	1.0526	0.0394	3 083	3 120	1.0582	0.0514	3 100	1.0854	0.0564	3 179
		OT	6 022	1.0203	0.0529	6 144	6 874	1.0346	0.0632	6 230	1.0877	0.0661	6 550
		Total \ US	28 231			29 400	31 406			30 563			31 551
		LCL				27 221				27 213			27 731
		UCL				31 580				33 912			35 372
Subsequent	All	EP	65 858	1.0521	0.0390	69 291	67 835	1.1171	0.0419	73 573	1.1432	0.0469	75 287
		JA	35 028	1.0382	0.0178	36 366	37 617	1.0913	0.0201	38 227	1.1225	0.0205	39 320
		OT	20 466	0.9906	0.1043	20 274	22 737	1.0787	0.0626	22 077	1.0642	0.0535	21 781
		Total \ US	121 352			125 931	128 189			133 878			136 387
		LCL				119 062				127 082			128 917
		UCL				132 800				140 673			143 857
First+Subsequent	All	US	60 594	0.8359	0.0710	50 649	60 919	0.9664	0.0695	58 560	0.9978	0.0702	60 462
		LCL				43 570				50 557			52 111
		UCL				57 727				66 563			68 812
Grand total	Total	EP	85 138			89 464	89 247			94 806			97 109
		JA	37 957			39 449	40 737			41 327			42 500
		OT	26 488			26 418	29 611			28 308			28 330
		US	60 594			50 649	60 919			58 560			60 462
		Total	210 177			205 980	220 514			223 000			228 400
		LCL				195 879				211 980			216 563
		UCL				216 081				234 021			240 238
Growth from 2006						-2.0%				6.1%			8.7%
Deviation in % of forecast						4.9%				4.9%			5.2%

Table 23: Forecasts for EPO filings – Random group, broken down by residence bloc (First and subsequent filings combined for US residence bloc only)

Random group

No subsidiary breakdown (excluding companies with qualifying comments)

Q-indices

S.E. indicates standard error of logarithm

LCL/UCL indicates lower/upper 95% confidence limit

Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year										
			2006	2007				2008			2009		
Filing type	Filing route	Res. bloc	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings
First	Euro-direct	Total	18 384	0.9024	0.0596	16 590	20 170	0.9918	0.0532	18 233	1.0315	0.0597	18 963
		LCL				14 648				16 328			16 737
		UCL				18 532				20 139			21 189
First	Euro-PCT-IP	Total	12 715	1.1239	0.0357	14 290	14 078	1.1821	0.0346	15 030	1.2305	0.0394	15 646
		LCL				13 290				14 010			14 437
		UCL				15 290				16 051			16 855
Subsequent	Euro-direct	Total	42 735	0.9663	0.0296	41 293	42 511	1.0240	0.0310	43 762	1.0621	0.0332	45 390
		LCL				38 897				41 097			42 438
		UCL				43 689				46 427			48 342
Subsequent	Euro-PCT-IP	Total	136 343	1.0657	0.0252	145 302	143 755	1.1537	0.0235	157 303	1.1619	0.0279	158 412
		LCL				138 135				150 045			149 753
		UCL				152 469				164 560			167 071
All	Euro-direct	Total	61 119			57 883	62 681			61 996			64 353
		LCL				54 799				58 720			60 656
		UCL				60 967				65 272			68 050
All	Euro-PCT-IP	Total	149 058			159 592	157 833			172 333			174 058
		LCL				152 356				165 005			165 315
		UCL				166 829				179 662			182 801
Grand total		Total	210 177			217 475	220 514			234 329			238 411
		LCL				209 609				226 301			228 918
		UCL				225 342				242 357			247 903
Growth from 2006						3.5%				11.5%			13.4%
Implied % Euro-PCT-IP			70.9%			73.4%	71.6%			73.5%			73.0%
Deviation in % of forecast						3.6%				3.4%			4.0%

Table 24: Forecasts for EPO filings – Random group with no subsidiary breakdown (excluding companies with qualifying comments)

Random group

Breakdown by residence bloc ("other" incorporated in EP; excluding companies with qualifying comments)
Q-indices

S.E. indicates standard error of logarithm

LCL/UCL indicates lower/upper 95% confidence limit

Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year											
			2006	2007				2008				2009		
Filing type	Filing route	Res. bloc	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings	
First	Euro-direct	EP/OT	17 023	0.9841	0.0483	16 752	18 845	1.0740	0.0700	18 283	1.1212	0.0815	19 086	
		JA	287	0.9587	0.0479	275	303	0.9752	0.0565	280	1.0186	0.0645	292	
		US	1 074	0.6939	0.2093	745	1 022	0.8123	0.1508	872	0.8403	0.1594	902	
		Total	18 384			17 772	20 170			19 435			20 280	
		LCL				16 151			16 904				17 201	
		UCL				19 393			21 967			23 359		
First	Euro-PCT-IP	EP/OT	8 279	1.1432	0.0567	9 465	9 441	1.1974	0.0451	9 913	1.2399	0.0475	10 265	
		JA	2 642	1.1236	0.0540	2 969	2 817	1.1282	0.0568	2 981	1.1573	0.0685	3 058	
		US	1 794	1.0833	0.0479	1 943	1 820	1.2234	0.0734	2 195	1.3041	0.0880	2 340	
		Total	12 715			14 377	14 078			15 088			15 662	
		LCL				13 261			14 097			14 543		
		UCL				15 492			16 080			16 781		
Subsequent	Euro-direct	EP/OT	23 432	1.0141	0.0484	23 763	23 384	1.0577	0.0441	24 783	1.1039	0.0512	25 867	
		JA	10 630	0.9312	0.0345	9 898	10 809	1.0009	0.0406	10 640	1.0223	0.0394	10 867	
		US	8 673	0.9180	0.0789	7 962	8 318	0.9797	0.0925	8 497	1.0368	0.0960	8 992	
		Total	42 735			41 624	42 511			43 920			45 726	
		LCL				38 962			41 141			42 506		
		UCL				44 286			46 700			48 947		
Subsequent	Euro-PCT-IP	EP/OT	62 892	1.0398	0.0386	65 393	67 188	1.1765	0.0446	73 995	1.2074	0.0506	75 936	
		JA	24 398	1.1659	0.0309	28 446	26 808	1.1868	0.0236	28 956	1.2030	0.0181	29 352	
		US	49 053	0.9582	0.0527	47 004	49 759	1.0570	0.0520	51 849	1.0010	0.0875	49 104	
		Total	136 343			140 843	143 755			154 800			154 392	
		LCL				133 695			146 330			142 996		
		UCL				147 991			163 271			165 789		
All	Euro-direct	EP/OT	40 455			40 515	42 229			43 066			44 952	
		JA	10 917			10 174	11 112			10 920			11 159	
		US	9 747			8 707	9 340			9 370			9 895	
		Total	61 119			59 396	62 681			63 355			66 007	
		LCL				56 279			59 596			61 551		
		UCL				62 513			67 115			70 462		
All	Euro-PCT-IP	EP/OT	71 171			74 858	76 629			83 908			86 201	
		JA	27 040			31 414	29 625			31 937			32 409	
		US	50 847			48 947	51 579			54 044			51 444	
		Total	149 058			155 219	157 833			169 889			170 055	
		LCL				147 985			161 360			158 603		
		UCL				162 454			178 417			181 506		
Grand total	Total	EP/OT	111 626			115 373	118 858			126 975			131 154	
		JA	37 957			41 588	40 737			42 857			43 569	
		US	60 594			57 655	60 919			63 413			61 339	
		Total	210 177			214 616	220 514			233 244			236 061	
		LCL				206 738			223 924			223 774		
		UCL				222 494			242 565			248 349		
Growth from 2006						2.1%				11.0%			12.3%	
Implied Euro-PCT-IP						72.3%	71.6%			72.8%			72.0%	
Deviation in % of forecast						3.7%				4.0%			5.2%	

Table 25: Forecasts for EPO - Random group, broken down by residence bloc ("Other" incorporated in EPC; excluding companies with qualifying comments)

7.3 Random & Smallest group

The Random & Smallest group is based on a combined sample of 1 849 randomly selected applicants for Euro-direct filings and Euro PCT-RP filings (the Random group) and 650 randomly selected applicants from the EPC Bloc for Euro-direct filings and Euro PCT-RP filings each of whom made at most 2 previous filings (the Smallest group). In addition to the 699 responses of the Random group, 219 responses from the Smallest group are available, resulting in a combined sample size of 918 for the Random & Smallest group.

For the purpose of obtaining growth estimates an extension of the weighting scheme for the Random group was used. (See **Annex VII**).

For responses from the Random & Smallest group, the Q-index method was used following logarithmic transformation of the data.¹⁴ The resulting forecasts for numbers of patent filings calculated for the Random & Smallest group without breakdown by residence bloc are illustrated in **Figure 16** and **Table 26**. **Table 27** shows details on the forecasts by filing type and route and where the four residence blocs Europe (EP), Japan (JA), Other (OT) and the US are differentiated. It should be noted that the only differences between **Table 26** et seq. and the respective equivalent **Table 19** et seq. occur for the EPC Bloc where the Smallest group is now included. As above, the result tables show Q-indices with the resulting filings forecasts and the 95% confidence intervals based thereon.

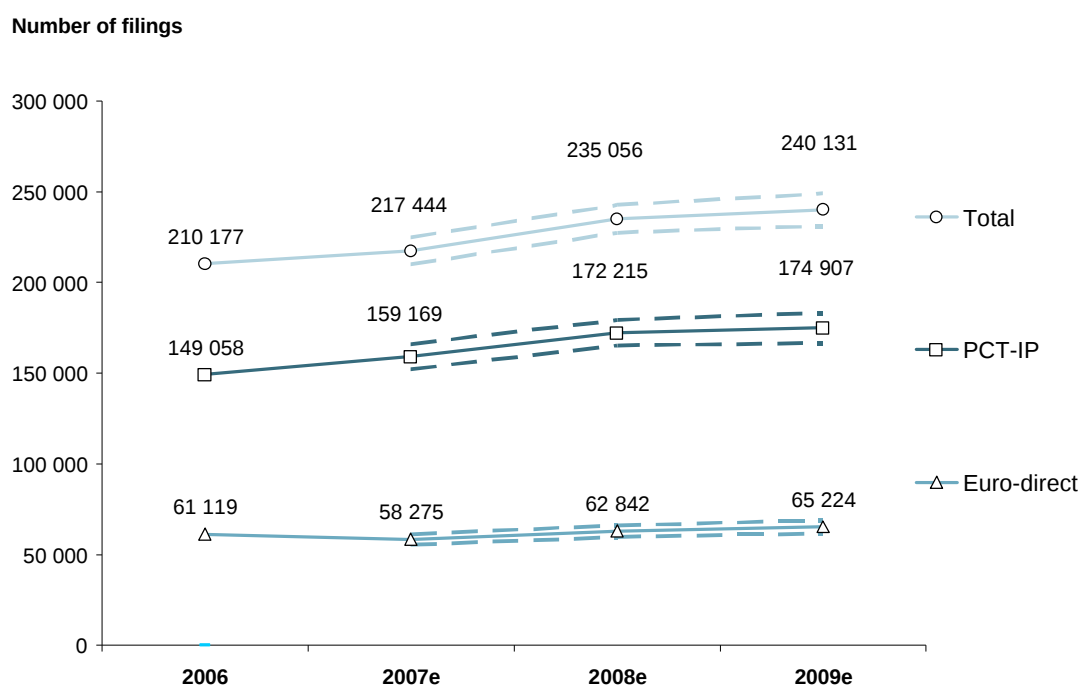


Figure 16: Forecasts for EPO filings – Random & Smallest group without breakdown by residence bloc (dotted lines illustrate 95% confidence limits)

Various forecasts for EPO filings based on the Random & Smallest group sample are presented, resulting from different residence bloc breakdowns, combinations of Euro-direct and PCT-IP filings and the inclusion/exclusion of respondents with qualifying comments (cf. **Section 6**). These tables are parallel to those already provided in **Section 7.2** for the

¹⁴ cf. Applicant Panel Survey 2002 report: Section IV.1, Annex IV.

Random group alone. **Table 26** shows the EPO filings forecasts based on an analysis with no subsidiary breakdown. As was the case for the Random group forecasts, Random & Smallest group forecasts without residence bloc breakdown have somewhat narrower confidence bands than forecasts using the residence bloc breakdown.

To address the shifting of filings between different filing routes, alternative breakdown scenarios have been analysed and are presented in **Table 28** to **31**. **Table 28** and **Table 29** show the resulting growth forecasts when Euro-direct and Euro-PCT-IP filing routes are combined with and without breakdown by residence bloc respectively. In contrast to last year, the three analyses combining Euro-direct and Euro-PCT-IP filings do not produce narrower confidence limits than the comparable analyses without such combinations.

As in previous applicant panel survey reports, a further analysis was carried out with no subsidiary breakdown, but after excluding cases in which researchers made qualifying comments (**Table 30**). The analysis excluding cases with qualifying comments was repeated with a breakdown by residence bloc combining the residence blocs "EP" and "OT" to account for the critical sample size of the "Other" category (**Table 31**).

Random & Smallest group
No subsidiary breakdown
Q-Indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year												
Filing type	Filing route	Res. bloc	2006	2007				2008				2009			
			Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings		
First	Euro-direct	Total LCL UCL	18 384	0.9171	0.0534	16 860 15 093 18 627	20 170	1.0108	0.0486	18 582 16 809 20 355	1.0564	0.0549	19 422 17 328 21 516		
First	Euro-PCT-IP	Total LCL UCL	12 715	1.1163	0.0335	14 194 13 263 15 126	14 078	1.1806	0.0321	15 011 14 582 16 065	1.2392	0.0380	15 757 14 582 16 931		
Subsequent	Euro-direct	Total LCL UCL	42 735	0.9691	0.0293	41 415 39 039 43 791	42 511	1.0357	0.0312	44 260 41 554 46 965	1.0718	0.0330	45 802 42 841 48 764		
Subsequent	Euro-PCT-IP	Total LCL UCL	136 343	1.0633	0.0240	144 974 138 166 151 783	143 755	1.1530	0.0225	157 203 150 283 164 123	1.1673	0.0263	159 150 150 943 167 358		
All	Euro-direct	Total LCL UCL	61 119			58 275 55 314 61 237	62 681			62 842 59 607 66 076			65 224 61 597 68 851		
All	Euro-PCT-IP	Total LCL UCL	149 058			159 169 152 297 166 040	157 833			172 215 166 615 179 199			174 907 166 615 183 198		
Grand total			Total LCL UCL	210 177			217 444 209 961 224 927	220 514			235 056 227 359 242 753			240 131 231 081 249 180	
Growth from 2006						3.5%				11.8%			14.3%		
Implied %Euro-PCT-IP			70.9%			73.2%	71.6%			73.3%			72.8%		
Deviation in % of forecast						3.4%				3.3%			3.8%		

Table 26: Forecasts for EPO filings – Random & Smallest group with no subsidiary breakdown

Random & Smallest group
Breakdown by residence bloc
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year											
			2006	2007				2008				2009		
Filing type	Filing route	Res. bloc	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings	
First	Euro-direct	EP	15 829	0.9868	0.0469	15 620	17 536	1.0952	0.0714	17 336	1.1499	0.0829	18 203	
		JA	287	0.9607	0.0469	276	303	0.9696	0.0545	278	1.0115	0.0620	290	
		OT	1 194	1.0455	0.0450	1 248	1 309	1.1037	0.0591	1 318	1.1843	0.0787	1 414	
		US	1 074	0.6995	0.2021	751	1 022	0.8085	0.1438	868	0.8352	0.1519	897	
		Total	18 384			17 896	20 170			19 800			20 804	
	LCL					16 420				17 346			17 809	
	UCL					19 371				22 255			23 799	
First	Euro-PCT-IP	EP	3 451	1.2021	0.0533	4 149	3 876	1.2701	0.0418	4 383	1.3461	0.0488	4 645	
		JA	2 642	1.1124	0.0498	2 939	2 817	1.1228	0.0525	2 966	1.1488	0.0626	3 035	
		OT	4 828	0.9594	0.0664	4 632	5 565	1.0073	0.0548	4 863	1.0193	0.0588	4 921	
		US	1 794	1.0698	0.0479	1 919	1 820	1.2109	0.0719	2 172	1.3130	0.0918	2 355	
		Total	12 715			13 639	14 078			14 385			14 957	
	LCL					12 820				13 616			14 039	
	UCL					14 457				15 154			15 875	
Subsequent	Euro-direct	EP	18 569	1.0193	0.0508	18 927	17 980	1.0896	0.0506	20 234	1.1315	0.0571	21 011	
		JA	10 630	0.9358	0.0334	9 948	10 809	1.0052	0.0391	10 685	1.0262	0.0380	10 909	
		OT	4 863	1.0784	0.0918	5 244	5 404	1.0643	0.0934	5 176	1.0783	0.0974	5 244	
		US	8 673	0.8947	0.0801	7 760	8 318	0.9546	0.0885	8 280	1.0190	0.0911	8 837	
		Total	42 735			41 879	42 511			44 374			46 001	
	LCL					39 353				41 596			42 876	
	UCL					44 406				47 151			49 126	
Subsequent	Euro-PCT-IP	EP	47 289	1.0517	0.0386	49 736	49 855	1.1783	0.0442	55 722	1.2198	0.0499	57 682	
		JA	24 398	1.1571	0.0298	28 230	26 808	1.1812	0.0228	28 820	1.1925	0.0178	29 096	
		OT	15 603	0.9780	0.1299	15 260	17 333	1.2426	0.0619	19 389	1.3254	0.0991	20 680	
		US	49 053	0.9509	0.0500	46 644	49 759	1.0517	0.0483	51 588	1.0064	0.0806	49 367	
		Total	136 343			139 870	143 755			155 518			156 825	
	LCL					132 561				148 137			146 299	
	UCL					147 178				162 900			167 351	
All	Euro-direct	EP	34 398			34 548	35 516			37 569			39 214	
		JA	10 917			10 224	11 112			10 963			11 199	
		OT	6 057			6 493	6 713			6 493			6 658	
		US	9 747			8 511	9 340			9 148			9 734	
		Total	61 119			59 775	62 681			64 174			66 805	
	LCL					56 849				60 467			62 476	
	UCL					62 701				67 880			71 134	
All	Euro-PCT-IP	EP	50 740			53 884				60 105			62 328	
		JA	27 040			31 169				31 786			32 131	
		OT	20 431			19 892				24 252			25 601	
		US	50 847			48 563				53 760			51 722	
		Total	149 058			153 509	157 833			169 903			171 782	
	LCL					146 154				162 482			161 216	
	UCL					160 863				177 325			182 348	
Grand total	Total	EP	85 138			88 432				97 674			101 541	
		JA	37 957			41 393				42 749			43 330	
		OT	26 488			26 385				30 746			32 259	
		US	60 594			57 074				62 908			61 457	
		Total	210 177			213 284	220 514			234 077			238 587	
	LCL					205 369				225 782			227 169	
	UCL					221 199				242 372			250 006	
Growth from 2006						1.5%				11.4%			13.5%	
Implied Euro-PCT-IP						72.0%	71.6%			72.6%			72.0%	
Deviation in % of forecast						3.7%				3.5%			4.8%	

Table 27: Forecasts for EPO filings – Random & Smallest group broken down by residence bloc

Random & Smallest group
No subsidiary breakdown
Q-indices
Euro-direct and Euro-PCT-IP filings combined

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year										
			2006	2007				2008			2009		
Filing type	Filing route	Res. bloc	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings
First	All	Total	31 099	0.9622	0.0434	29 924	34 248	1.0134	0.0430	31 516	1.0496	0.0471	32 640
		LCL				27 374				28 857			29 624
		UCL				32 474				34 175			35 657
Subsequent	All	Total	179 078	1.0107	0.0197	180 988	186 266	1.0789	0.0209	193 203	1.1060	0.0227	198 060
		LCL				174 007				185 275			189 245
		UCL				187 968				201 130			206 875
Grand total		Total	210 177			210 911	220 514			224 719			230 701
		LCL				203 480				216 357			221 384
		UCL				218 343				233 080			240 018
Growth from 2006						0.3%				6.9%			9.8%
Deviation in % of forecast						3.5%				3.7%			4.0%

Table 28: Forecasts for EPO filings – Random & Smallest group with no subsidiary breakdown (Euro-direct and PCT-IP filings combined)

Random & Smallest group
Breakdown by residence bloc
Q-indices
Euro-direct and Euro-PCT-IP filings combined

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year										
Filing type	Filing route	Res. bloc	2006	2007				2008			2009		
			Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings
First	All	EP	19 280	1.0222	0.0467	19 707	21 412	1.0809	0.0725	20 839	1.1147	0.0812	21 491
		JA	2 929	1.0526	0.0394	3 083	3 120	1.0582	0.0514	3 100	1.0854	0.0564	3 179
		OT	6 022	1.0203	0.0529	6 144	6 874	1.0346	0.0632	6 230	1.0877	0.0661	6 550
		US	2 868	0.7524	0.1439	2 158	2 842	0.8542	0.1219	2 450	0.8974	0.1328	2 574
		Total	31 099			31 093	34 248			32 619			33 794
		LCL				29 066				29 473			30 173
		UCL				33 119				35 765			37 414
Subsequent	All	EP	65 858	1.0546	0.0383	69 456	67 835	1.1191	0.0409	73 703	1.1449	0.0461	75 403
		JA	35 028	1.0382	0.0178	36 366	37 617	1.0913	0.0201	38 227	1.1225	0.0205	39 320
		OT	20 466	0.9906	0.1043	20 274	22 737	1.0787	0.0626	22 077	1.0642	0.0535	21 781
		US	57 726	0.8835	0.0596	51 001	58 077	0.9806	0.0586	56 603	1.0056	0.0628	58 050
		Total	179 078			177 098	186 266			190 611			194 554
		LCL				168 042				181 277			184 269
		UCL				186 154				199 945			204 838
Grand total	Total	EP	85 138			89 164	89 247			94 542			96 894
		JA	37 957			39 449	40 737			41 327			42 500
		OT	26 488			26 418	29 611			28 308			28 330
		US	60 594			53 159	60 919			59 053			60 624
		Total	210 177			208 191	220 514			223 230			228 347
		LCL				198 911				213 380			217 444
		UCL				217 470				233 080			239 251
Growth from 2006						-0.9%				6.2%			8.6%
Deviation in % of forecast						4.5%				4.4%			4.8%

Table 29: Forecasts for EPO filings – Random & Smallest group, broken down by residence bloc (Euro-direct and PCT-IP filings combined)

Random & Smallest group
No subsidiary breakdown (excluding companies with qualifying comments)
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year										
			2006	2007				2008				2009	
Filing type	Filing route	Res. bloc	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings
First	Euro-direct	Total	18 384	0.9002	0.0590	16 550	20 170	0.9835	0.0518	18 081	1.0257	0.0586	18 857
		LCL				14 630				16 240			16 684
		UCL				18 469				19 922			21 030
First	Euro-PCT-IP	Total	12 715	1.1179	0.0350	14 214	14 078	1.1743	0.0333	14 931	1.2194	0.0379	15 505
		LCL				13 237				13 955			14 351
		UCL				15 192				15 908			16 659
Subsequent	Euro-direct	Total	42 735	0.9622	0.0292	41 118	42 511	1.0245	0.0308	43 783	1.0587	0.0326	45 243
		LCL				38 760				41 136			42 346
		UCL				43 477				46 430			48 140
Subsequent	Euro-PCT-IP	Total	136 343	1.0654	0.0250	145 261	143 755	1.1535	0.0233	157 275	1.1629	0.0277	158 551
		LCL				138 153				150 077			149 933
		UCL				152 370				164 472			167 169
All	Euro-direct	Total	61 119			57 668	62 681			61 864			64 100
		LCL				54 627				58 640			60 479
		UCL				60 709				65 088			67 721
All	Euro-PCT-IP	Total	149 058			159 476	157 833			172 206			174 056
		LCL				152 300				164 943			165 361
		UCL				166 652				179 470			182 751
Grand total		Total	210 177			217 144	220 514			234 070			238 156
		LCL				209 351				226 124			228 737
		UCL				224 938				242 017			247 575
Growth from 2006						3.3%				11.4%			13.3%
Implied %Euro-PCT-IP			70.9%			73.4%	71.6%			73.6%			73.1%
Deviation in % of forecast						3.6%				3.4%			4.0%

Table 30: Forecasts for EPO filings – Random & Smallest group with no subsidiary breakdown (excluding companies with qualifying comments)

Random & Smallest group

Breakdown by residence bloc ("other" incorporated in EP; excluding companies with qualifying comments)

Q-indices

S.E. indicates standard error of logarithm

LCL/UCL indicates lower/upper 95% confidence limit

Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year												
			2006	2007				2008				2009			
Filing type	Filing route	Res. bloc	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings		
First	Euro-direct	EP/OT	17 023	0.9796	0.0467	16 676	18 845	1.0579	0.0663	18 008	1.1096	0.0786	18 889		
		JA	287	0.9587	0.0479	275	303	0.9752	0.0565	290	1.0186	0.0645	292		
		US	1 074	0.6939	0.2093	745	1 022	0.8123	0.1508	872	0.8403	0.1594	902		
		Total	18 384			17 696	20 170			19 160			20 083		
		LCL				16 135			16 797			17 144			
First	Euro-PCT-IP	EP/OT	8 279	1.1306	0.0556	9 360	9 441	1.1810	0.0416	9 778	1.2176	0.0433	10 080		
		JA	2 642	1.1236	0.0540	2 969	2 817	1.1282	0.0568	2 981	1.1573	0.0685	3 058		
		US	1 794	1.0833	0.0479	1 943	1 820	1.2234	0.0734	2 195	1.3041	0.0880	2 340		
		Total	12 715			14 272	14 078			14 953			15 477		
		LCL				13 186			14 032			14 443			
Subsequent	Euro-direct	EP/OT	23 432	1.0050	0.0472	23 550	23 384	1.0589	0.0434	24 812	1.0965	0.0495	25 693		
		JA	10 630	0.9312	0.0345	9 898	10 809	1.0009	0.0406	10 640	1.0223	0.0394	10 867		
		US	8 673	0.9180	0.0789	7 962	8 318	0.9797	0.0925	8 497	1.0368	0.0960	8 992		
		Total	42 735			41 410	42 511			43 949			45 553		
		LCL				38 813			41 195			42 416			
Subsequent	Euro-PCT-IP	EP/OT	62 892	1.0392	0.0378	65 359	67 188	1.1762	0.0440	73 971	1.2102	0.0504	76 113		
		JA	24 398	1.1659	0.0309	28 446	26 808	1.1868	0.0236	28 956	1.2030	0.0181	29 352		
		US	49 053	0.9582	0.0527	47 004	49 759	1.0570	0.0520	51 849	1.0010	0.0875	49 104		
		Total	136 343			140 809	143 755			154 776			154 569		
		LCL				133 726			146 367			143 182			
All	Euro-direct	EP/OT	40 455			40 226	42 229			42 820			44 582		
		JA	10 917			10 174	11 112			10 920			11 159		
		US	9 747			8 707	9 340			9 370			9 895		
		Total	61 119			59 107	62 681			63 109			65 636		
		LCL				56 076			59 481			61 338			
All	Euro-PCT-IP	EP/OT	71 171			74 719	76 629			83 749			86 194		
		JA	27 040			31 414	29 625			31 937			32 409		
		US	50 847			48 947	51 579			54 044			51 444		
		Total	149 058			155 081	157 833			169 729			170 047		
		LCL				147 916			161 270			158 613			
Grand total	Total	EP/OT	111 626			114 945	118 858			126 569			130 776		
		JA	37 957			41 588	40 737			42 857			43 569		
		US	60 594			57 655	60 919			63 413			61 339		
		Total	210 177			214 187	220 514			232 838			235 683		
		LCL				206 408			223 634			223 468			
Growth from 2006						1.9%				10.8%			12.1%		
Implied Euro-PCT-IP						72.4%	71.6%			72.9%			72.2%		
Deviation in % of forecast						3.6%				4.0%			5.2%		

Table 31: Forecasts for EPO - Random & Smallest group, broken down by residence bloc ("Other" incorporated in EPC; excluding companies with qualifying comments)

7.4 Results broken down by joint cluster

The forecasts for EPO filings were analysed with primary breakdowns by joint clusters based on the information provided in questionnaire **Sections B** (filings) and **C** (joint cluster activities). For the Biggest group the composite index was calculated, and for the Random group and the Random & Smallest group Q-indices were calculated. The resulting forecasts for the absolute numbers of patent filings based on the **Random group** broken down by joint clusters are illustrated in **Figure 17** (corresponding to **Table 35**).

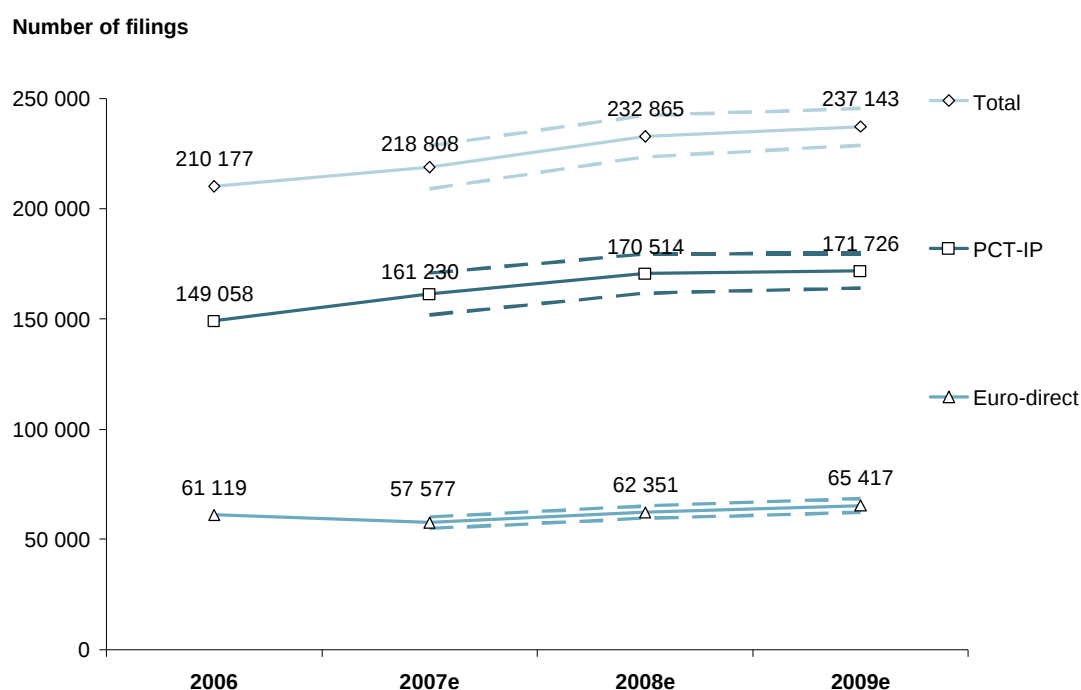


Figure 17: Forecasts for EPO filings based on breakdown by joint cluster for the Random group (dotted lines illustrating 95% confidence limits)

The resulting forecasts for the absolute numbers of patent filings based on the **Random & Smallest group** broken down by joint clusters are illustrated in **Figure 18** (corresponding to **Table 37**).

Number of filings

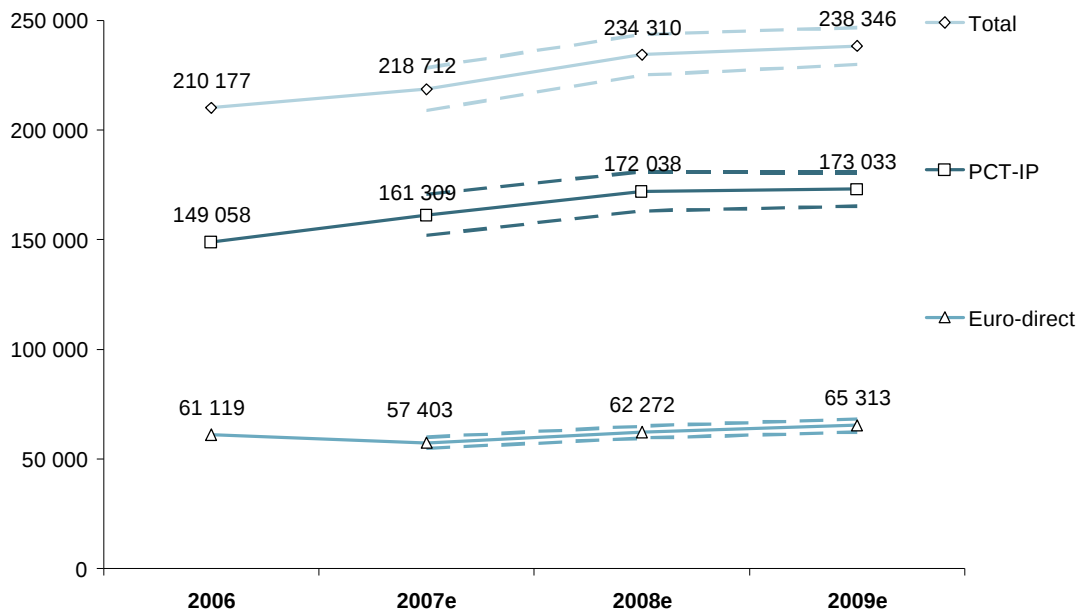


Figure 18: Forecasts for EPO filings based on breakdown by joint cluster for the Random & Smallest group (dotted lines illustrating 95% confidence limits)

The forecasts of filings by filing type, filing route and joint cluster for the Biggest group are shown in **Table 32** and **Table 33**. Detailed results for the Random group are presented in **Table 34** and **Table 35**. Results for the Random & Smallest group are given in **Table 36** and **Table 37**.

As before, in tables covering Random group and Random & Smallest group forecasts, the standard errors of the (log) Q-indices are given and confidence intervals are calculated. However, when deriving the standard error, a correction factor has to be included to avoid distortions caused by multiple joint cluster classifications. This correction factor takes into account the average repetition factor of 1.9 for the Random group, and widens the confidence limits by multiplying standard errors by 1.38, the square root of 1.9. As before for the calculation of standard errors, a finite population correction is also applied that narrows the confidence limits¹⁵.

Since the breakdown of the sample into 14 sub-groups results in rather few observations per sub-group, some of the individual Q-indices per joint cluster have relatively large standard errors. Overall, the aggregated forecasts for total filings are not too dissimilar to those for a breakdown by residence bloc (E.G. Compare **Table 27** and **Table 37**). This gives confidence in the forecasts for individual joint clusters. However, it is not suggested that the total filing forecasts based on the joint cluster breakdown should be used for the overall forecast of EPO filings. As the respondents were allowed to choose more than one cluster to indicate their main business, it has to be taken into account that all of the answers provided in Section B of the questionnaire are used to calculate the Q-index for each joint cluster reported for that applicant. Differing respondent behaviour as a function of cluster is not considered. For this reason, it appears to be better to use a forecast for

¹⁵ cf. Applicant panel Survey 2006 report: Annex VII, page 79.

total filings without a breakdown by joint cluster. The approach based on joint clusters is however particularly useful for business planning as it provides forecasts for individual joint clusters of the various primary combinations of first, subsequent, Euro-direct and Euro-PCT-IP filings.

Biggest group
Breakdown by EPO joint cluster
Composite indices

			Year							
			2006		2007		2008		2009	
Filing type	Filing route	Cluster	Actual filings	Index 07	Predicted filings	Actual filings	Index 08	Predicted filings	Index 09	Predicted filings
First	Euro-direct	Audio, Video & Media	1 141	1.0353	1 182	1 106	1.1121	1 269	1.1731	1 339
		Biotechnology	1 235	0.9804	1 211	1 525	0.9539	1 178	1.0097	1 247
		Civil Engineering & Thermodynamics	1 283	0.7876	1 011	1 460	1.0007 *	1 284	1.0345 *	1 328
		Computer	970	0.9572 *	928	1 038	1.0007 *	971	1.0345 *	1 003
		Electricity & Electrical Machines	1 176	0.8879	1 044	1 247	0.8691	1 022	0.8686	1 021
		Electronics	1 014	0.9816	996	968	0.9985	1 013	1.0333	1 048
		Handling and Processing	1 658	0.9545	1 582	1 836	0.9167	1 519	0.8472	1 404
		Human Necessities	1 280	0.8301	1 063	1 404	0.8185	1 048	0.8249	1 056
		Industrial Chemistry	1 843	1.0000	1 843	2 054	1.0739	1 979	1.1208	2 066
		Measuring, Optics	1 013	0.9638	977	1 072	0.9891	1 002	0.9891	1 002
		Polymers	1 045	1.0336	1 080	1 087	1.1949	1 248	1.2583	1 314
		Pure & Applied Organic Chemistry	2 130	1.0723	2 284	2 463	1.1765	2 506	1.2721	2 710
		Telecommunications	1 562	0.9650	1 507	1 774	0.9959	1 555	1.0356	1 617
		Vehicles & General Technology	1 033	0.8375	865	1 136	0.8330	861	0.8337	862
		Total	18 384		17 573	20 170		18 456		19 018
First	Euro-PCT-IP	Audio, Video & Media	850	1.0846	922	941	1.0677 *	907	1.0844 *	922
		Biotechnology	629	1.0942	689	773	1.2027	757	1.2703	800
		Civil Engineering & Thermodynamics	874	1.0571 *	924	944	1.0677 *	934	1.0844 *	948
		Computer	886	1.0571 *	937	728	1.0677 *	946	1.0844 *	961
		Electricity & Electrical Machines	1 105	1.0803	1 194	1 153	1.1202	1 238	1.1183	1 236
		Electronics	600	1.1140	669	555	1.0808	649	1.0926	656
		Handling and Processing	971	1.0519	1 021	1 052	1.2074	1 172	1.3185	1 280
		Human Necessities	1 345	1.2488	1 679	1 495	1.1798	1 586	1.1946	1 606
		Industrial Chemistry	1 182	1.1172	1 320	1 434	1.2414	1 467	1.2759	1 508
		Measuring, Optics	757	1.1404	864	837	1.0677 *	808	1.0844 *	821
		Polymers	556	1.0571 *	587	796	1.0677 *	593	1.0844 *	603
		Pure & Applied Organic Chemistry	1 037	1.1494	1 192	1 376	2.0000	2 075	2.2273	2 311
		Telecommunications	1 078	1.0959	1 182	1 117	1.0692	1 153	1.0710	1 155
		Vehicles & General Technology	844	1.1594	978	878	1.1794	995	1.2152	1 026
		Total	12 715		14 158	14 078		15 281		15 831
Subsequent	Euro-direct	Audio, Video & Media	3 403	1.0811	3 679	3 334	1.2060	4 104	1.2773	4 347
		Biotechnology	1 011	0.9003	911	1 030	0.9704	981	1.0164	1 028
		Civil Engineering & Thermodynamics	4 429	0.9730	4 309	4 658	0.9965	4 413	1.1272	4 992
		Computer	2 102	1.0184	2 141	1 942	0.9627	2 023	0.9741	2 047
		Electricity & Electrical Machines	4 194	0.9931	4 165	3 841	1.0382	4 354	1.0895	4 569
		Electronics	2 436	0.9343	2 276	2 123	0.9450	2 302	0.9692	2 361
		Handling and Processing	5 586	1.0468	5 848	5 529	1.1247	6 283	1.1616	6 489
		Human Necessities	3 581	0.8974	3 214	3 785	0.9615	3 443	1.0362	3 711
		Industrial Chemistry	2 906	0.8977	2 609	2 970	1.1571	3 363	1.1538	3 353
		Measuring, Optics	2 624	0.9713	2 549	2 674	1.0082	2 645	1.0264	2 693
		Polymers	1 197	1.0104	1 210	1 150	1.1340	1 358	1.1194	1 340
		Pure & Applied Organic Chemistry	1 322	1.0921	1 444	1 321	1.0931	1 446	1.1058	1 462
		Telecommunications	2 903	0.9461	2 747	2 905	0.9311	2 703	1.0204	2 962
		Vehicles & General Technology	5 040	0.9334	4 704	5 250	0.9787	4 932	1.0535	5 310
		Total	42 735		41 804	42 511		44 352		46 664
Subsequent	Euro-PCT-IP	Audio, Video & Media	8 164	1.1787	9 623	9 389	1.1475	9 368	1.0906	8 904
		Biotechnology	7 822	1.0843	8 481	7 823	1.0822	8 464	1.0194	7 973
		Civil Engineering & Thermodynamics	8 576	0.9179	7 871	9 655	0.9594	8 227	1.0977 *	9 414
		Computer	8 186	0.9795	8 018	8 248	1.0114	8 279	0.9743	7 976
		Electricity & Electrical Machines	11 281	1.0009	11 290	11 997	1.0195	11 500	0.9886	11 152
		Electronics	5 852	0.9310	5 448	5 634	0.9798	5 733	0.9684	5 667
		Handling and Processing	11 417	0.9094	10 383	11 660	0.9885	11 286	1.0271	11 726
		Human Necessities	12 986	0.9280	12 051	13 602	0.9793	12 717	0.9983	12 964
		Industrial Chemistry	12 451	1.1031	13 734	13 262	1.1429	14 231	1.1306	14 078
		Measuring, Optics	8 063	1.0829	8 731	8 671	1.0724	8 647	1.0333	8 332
		Polymers	7 204	1.2145	8 749	7 148	1.1782	8 488	1.1295	8 137
		Pure & Applied Organic Chemistry	15 057	1.1275	16 976	15 333	1.1292	17 002	1.0950	16 487
		Telecommunications	10 636	0.9941	10 573	12 213	1.0249	10 900	1.0106	10 748
		Vehicles & General Technology	8 649	0.9670	8 364	9 120	1.0513	9 093	1.0652	9 213
		Total	136 343		140 292	143 755		143 937		142 769

Table 32: Forecasts for EPO filings at the EPO – Biggest group (first and subsequent filings, broken down by joint cluster)

Biggest group
Breakdown by EPO joint cluster
Composite indices

			Year							
			2006	2007		2008		2009		
Filing type	Filing route	Cluster	Actual filings	Index 07	Predicted filings	Actual filings	Index 08	Predicted filings	Index 09	Predicted filings
All	Euro-direct	Audio, Video & Media	4 545		4 861	4 440		5 374		5 686
		Biotechnology	2 246		2 121	2 555		2 160		2 275
		Civil Engineering & Thermodynamics	5 712		5 320	6 118		5 698		6 320
		Computer	3 072		3 069	2 980		2 994		3 051
		Electricity & Electrical Machines	5 369		5 208	5 088		5 375		5 590
		Electronics	3 450		3 271	3 091		3 315		3 409
		Handling and Processing	7 244		7 430	7 365		7 802		7 893
		Human Necessities	4 862		4 277	5 188		4 491		4 767
		Industrial Chemistry	4 749		4 452	5 023		5 342		5 419
		Measuring, Optics	3 637		3 525	3 746		3 648		3 695
		Polymers	2 242		2 290	2 237		2 606		2 655
		Pure & Applied Organic Chemistry	3 453		3 729	3 784		3 952		4 172
		Telecommunications	4 465		4 254	4 679		4 258		4 580
		Vehicles & General Technology	6 073		5 570	6 386		5 793		6 171
			Total	61 119		59 377	62 681		62 808	
All	Euro-PCT-IP	Audio, Video & Media	9 014		10 544	10 330		10 276		9 825
		Biotechnology	8 451		9 170	8 596		9 221		8 773
		Civil Engineering & Thermodynamics	9 450		8 796	10 599		9 161		10 362
		Computer	9 072		8 955	8 977		9 226		8 937
		Electricity & Electrical Machines	12 386		12 484	13 149		12 739		12 388
		Electronics	6 452		6 117	6 189		6 382		6 323
		Handling and Processing	12 387		11 404	12 712		12 458		13 006
		Human Necessities	14 331		13 730	15 097		14 304		14 570
		Industrial Chemistry	13 633		15 055	14 695		15 698		15 585
		Measuring, Optics	8 820		9 595	9 508		9 455		9 153
		Polymers	7 760		9 336	7 944		9 081		8 739
		Pure & Applied Organic Chemistry	16 095		18 169	16 710		19 077		18 798
		Telecommunications	11 714		11 755	13 329		12 053		11 903
		Vehicles & General Technology	9 493		9 342	9 998		10 088		10 239
			Total	149 058		154 451	157 833		159 218	
Grand total	Total	Audio, Video & Media	13 558		15 405	14 769		15 650		15 511
		Biotechnology	10 698		11 291	11 151		11 381		11 048
		Civil Engineering & Thermodynamics	15 162		14 116	16 716		14 858		16 682
		Computer	12 144		12 024	11 957		12 220		11 988
		Electricity & Electrical Machines	17 755		17 693	18 237		18 114		17 978
		Electronics	9 902		9 388	9 280		9 697		9 732
		Handling and Processing	19 631		18 834	20 077		20 260		20 899
		Human Necessities	19 192		18 006	20 286		18 795		19 337
		Industrial Chemistry	18 382		19 506	19 719		21 040		21 004
		Measuring, Optics	12 457		13 120	13 254		13 103		12 848
		Polymers	10 002		11 626	10 181		11 687		11 394
		Pure & Applied Organic Chemistry	19 547		21 898	20 494		23 029		22 970
		Telecommunications	16 179		16 009	18 008		16 312		16 483
		Vehicles & General Technology	15 567		14 912	16 384		15 881		16 410
			Total	210 177		213 827	220 514		222 026	
Growth from 2006					1.7%			5.6%		6.7%
Implied Euro-PCT-IP					72.2%	71.6%		71.7%		70.7%

Table 33: Forecasts for EPO filings – Biggest group (total filings, broken down by joint cluster)

Random group
Breakdown by EPO joint cluster
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year										
			2006		2007		2008		2009				
Filing type	Filing route	Cluster	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual Filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings
First	Euro-direct	Audio, Video & Media	1 141	0.8292	0.3432	946	1 106	1.0547	0.1467	1 204	1.0977	0.1613	1 253
		Biotechnology	1 235	0.9646	0.1646	1 191	1 525	1.0517	0.2116	1 299	1.1248	0.2380	1 389
		Civil Engineering & Thermodynamics	1 283	0.8771	0.1177	1 126	1 460	0.8710	0.1374	1 118	0.9001	0.1662	1 155
		Computer	970	1.1487	0.0586	1 114	1 038	1.2168	0.0624	1 180	1.2547	0.0725	1 217
		Electricity & Electrical Machines	1 176	0.8915	0.0959	1 048	1 247	0.8882	0.1175	1 044	0.9218	0.1334	1 084
		Electronics	1 014	0.9505	0.0977	964	968	0.9543	0.1249	968	0.9754	0.1416	989
		Handling and Processing	1 658	1.0242	0.1224	1 698	1 836	1.0577	0.1381	1 753	1.1054	0.1452	1 832
		Human Necessities	1 280	0.9344	0.1231	1 196	1 404	0.9654	0.1511	1 236	1.0321	0.1932	1 322
		Industrial Chemistry	1 843	1.2005	0.0932	2 212	2 054	1.3772	0.1017	2 538	1.5362	0.1224	2 831
		Measuring, Optics	1 013	0.9262	0.2231	938	1 072	0.9605	0.2208	982	0.9627	0.2226	975
		Polymers	1 045	1.1221	0.1087	1 172	1 087	1.3151	0.1104	1 374	1.5714	0.1544	1 641
		Pure & Applied Organic Chemistry	2 130	1.1026	0.0871	2 349	2 463	1.2583	0.0905	2 681	1.3902	0.1038	2 903
		Telecommunications	1 562	0.8140	0.1596	1 271	1 774	0.9093	0.1255	1 420	0.9556	0.1457	1 492
		Vehicles & General Technology	1 033	0.8929	0.0921	923	1 136	0.9023	0.1168	932	0.9215	0.1314	952
		Total	18 384			18 150	20 170			19 729			21 095
LCL				16 802				18 322			19 350		
UCL				19 498				21 136			22 840		
First	Euro-PCT-IP	Audio, Video & Media	850	1.1337	0.0741	963	941	1.1176	0.0682	950	1.1325	0.1088	962
		Biotechnology	629	0.9371	0.1810	590	773	1.3348	0.2004	840	1.4866	0.2303	936
		Civil Engineering & Thermodynamics	874	1.3456	0.0717	1 177	944	1.2860	0.0718	1 125	1.4033	0.1264	1 227
		Computer	886	1.1373	0.0978	1 008	728	1.1385 *	0.1179 *	1 009	1.1719 *	0.1370 *	1 039
		Electricity & Electrical Machines	1 105	1.2230	0.0751	1 352	1 153	1.2264	0.0526	1 356	1.2719	0.0676	1 406
		Electronics	600	1.2290	0.0801	738	555	1.2163	0.0749	730	1.2507	0.0879	751
		Handling and Processing	971	1.2754	0.1223	1 238	1 052	1.6171	0.2307	1 570	1.9616	0.2731	1 910
		Human Necessities	1 345	1.2966	0.0705	1 743	1 495	1.3265	0.0646	1 783	1.4204	0.1040	1 904
		Industrial Chemistry	1 182	1.4939	0.1631	1 765	1 434	1.9098	0.2352	2 257	2.3883	0.3007	2 790
		Measuring, Optics	757	1.2214	0.0986	925	837	1.3739	0.2240	1 040	1.4468	0.2666	1 096
		Polymers	556	1.1789	0.1429	655	796	1.3415	0.1613	745	1.5535	0.2285	863
		Pure & Applied Organic Chemistry	1 037	1.4523	0.1636	1 507	1 376	1.9413	0.2795	2 014	2.1836	0.3101	2 265
		Telecommunications	1 078	1.1879	0.0698	1 281	1 117	1.2000	0.0610	1 294	1.2177	0.0722	1 313
		Vehicles & General Technology	844	1.3233	0.0622	1 117	878	1.3693	0.0852	1 156	1.4672	0.1225	1 238
		Total	12 715			16 058	14 078			17 868			19 708
LCL				15 046				15 937			16 927		
UCL				17 070				19 800			22 490		
Subsequent	Euro-direct	Audio, Video & Media	3 403	0.9627	0.0894	3 276	3 334	1.1176	0.0839	3 803	1.2060	0.0867	4 104
		Biotechnology	1 011	0.9157	0.2311	926	1 030	0.9554	0.2326	966	1.0308	0.2368	1 043
		Civil Engineering & Thermodynamics	4 429	0.8448	0.0830	3 742	4 658	0.9381	0.0920	4 155	0.9978	0.1261	4 419
		Computer	2 102	0.9424	0.0717	1 981	1 942	1.0274	0.0574	2 159	1.0550	0.0823	2 217
		Electricity & Electrical Machines	4 194	0.9668	0.0741	4 054	3 841	1.0233	0.0820	4 291	1.0227	0.0740	4 289
		Electronics	2 436	0.9039	0.0684	2 202	2 123	0.9603	0.0624	2 339	0.9491	0.0583	2 312
		Handling and Processing	5 586	0.9055	0.1152	5 058	5 529	0.9703	0.0908	5 420	1.0663	0.0825	5 957
		Human Necessities	3 581	0.9392	0.1091	3 364	3 785	0.9766	0.0916	3 497	1.0317	0.1185	3 695
		Industrial Chemistry	2 906	0.9983	0.1167	2 901	2 970	1.1585	0.1379	3 367	1.0804	0.1051	3 140
		Measuring, Optics	2 624	0.8717	0.1530	2 287	2 674	0.9345	0.1713	2 452	0.9492	0.1715	2 491
		Polymers	1 197	0.9681	0.0854	1 159	1 150	1.0883	0.0795	1 303	1.1097	0.0864	1 329
		Pure & Applied Organic Chemistry	1 322	1.1390	0.1117	1 506	1 321	1.1104	0.1084	1 468	1.1939	0.1083	1 579
		Telecommunications	2 903	0.8683	0.0808	2 521	2 905	0.9009	0.0847	2 615	0.9465	0.0911	2 748
		Vehicles & General Technology	5 040	0.8829	0.0723	4 450	5 250	0.9494	0.0647	4 785	0.9922	0.0765	5 001
		Total	42 735			39 427	42 511			42 623			44 322
LCL				37 210				40 299			41 796		
UCL				41 645				44 946			46 848		
Subsequent	Euro-PCT-IP	Audio, Video & Media	8 164	1.3522	0.1771	11 039	9 389	1.3124	0.1524	10 714	1.1932	0.0772	9 741
		Biotechnology	7 822	1.0574	0.1589	8 270	7 823	1.1281	0.1363	8 823	1.1070	0.0993	8 659
		Civil Engineering & Thermodynamics	8 576	1.0646	0.1456	9 130	9 655	1.1339	0.1492	9 724	1.1787	0.1764	10 108
		Computer	8 186	0.9968	0.0588	8 160	8 248	1.0142	0.0732	8 302	0.9889	0.0845	8 095
		Electricity & Electrical Machines	11 281	1.0528	0.0808	11 876	11 997	1.0989	0.0719	12 396	1.0697	0.0570	12 066
		Electronics	5 852	0.9869	0.0521	5 775	5 634	1.0238	0.0521	5 991	1.0327	0.0613	6 043
		Handling and Processing	11 417	0.9578	0.0949	10 935	11 660	1.0638	0.0847	12 111	1.1209	0.0657	12 797
		Human Necessities	12 986	0.9870	0.0673	12 817	13 602	1.0810	0.0713	14 038	1.1243	0.0838	14 601
		Industrial Chemistry	12 451	1.1152	0.1446	13 886	13 262	1.1736	0.1247	14 613	1.1664	0.0918	14 523
		Measuring, Optics	8 063	1.1106	0.1582	8 954	8 671	1.1105	0.1485	8 954	1.0642	0.1057	8 581
		Polymers	7 204	1.1418	0.1440	8 225	7 148	1.1368	0.1203	8 189	1.1731	0.0847	8 451
		Pure & Applied Organic Chemistry	15 057	1.1009	0.1130	16 577	15 333	1.1953	0.0919	17 998	1.1890	0.0519	17 903
		Telecommunications	10 636	0.9759	0.0551	10 379	12 213	1.0243	0.0593	10 894	1.0341	0.0663	10 998
		Vehicles & General Technology	8 649	1.0577	0.0752	9 148	9 120	1.1442	0.0823	9 897	1.0929	0.1062	9 453
		Total	136 349			145 172	143 755			152 645			152 016
LCL				135 816				143 914			144 671		
UCL				154 528				161 376			159 365		

Table 34: Forecasts for EPO filings at the EPO – Random group (first and subsequent filings, broken down by joint cluster)

Random group
Breakdown by EPO joint cluster
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year										
Filing type	Filing route	Cluster	2006	2007			2008			2009			
			Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual Filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings
First	Euro-direct	Audio, Video & Media	1 141	0.8292	0.3432	946	1 106	1.0547	0.1467	1 204	1.0977	0.1613	1 253
		Biotechnology	1 235	0.9646	0.1646	1 191	1 525	1.0517	0.2116	1 299	1.1248	0.2380	1 389
		Civil Engineering & Thermodynamics	1 283	0.8771	0.1177	1 126	1 460	0.8710	0.1374	1 118	0.9001	0.1662	1 155
All	Euro-direct	Audio, Video & Media	4 545			4 223	4 440			5 007			5 357
		Biotechnology	2 246			2 118	2 555			2 265			2 432
		Civil Engineering & Thermodynamics	5 712			4 867	6 118			5 273			5 574
		Computer	3 072			3 095	2 980			3 340			3 434
		Electricity & Electrical Machines	5 369			5 102	5 088			5 335			5 372
		Electronics	3 450			3 166	3 091			3 307			3 301
		Handling and Processing	7 244			6 756	7 365			7 173			7 789
		Human Necessities	4 862			4 560	5 188			4 734			5 016
		Industrial Chemistry	4 749			5 114	5 023			5 905			5 971
		Measuring, Optics	3 637			3 226	3 746			3 433			3 466
		Polymers	2 242			2 331	2 237			2 677			2 970
		Pure & Applied Organic Chemistry	3 453			3 855	3 784			4 149			4 541
		Telecommunications	4 465			3 792	4 679			4 035			4 240
		Vehicles & General Technology	6 073			5 372	6 386			5 717			5 953
		Total	61 119			57 577	62 681			62 351			65 417
		LCL				54 982			59 635				62 347
		UCL				60 172			65 068				68 487
All	Euro-PCT-IP	Audio, Video & Media	9 014			12 003	10 330			11 664			10 703
		Biotechnology	8 451			8 860	8 596			9 664			9 595
		Civil Engineering & Thermodynamics	9 450			10 306	10 599			10 849			11 335
		Computer	9 072			9 168	8 977			9 311			9 133
		Electricity & Electrical Machines	12 386			13 228	13 149			13 751			13 472
		Electronics	6 452			6 513	6 189			6 721			6 794
		Handling and Processing	12 387			12 173	12 712			13 681			14 701
		Human Necessities	14 331			14 561	15 097			15 822			16 511
		Industrial Chemistry	13 633			15 651	14 695			16 869			17 322
		Measuring, Optics	8 820			9 879	9 508			9 994			9 677
		Polymers	7 760			8 880	7 944			8 935			9 314
		Pure & Applied Organic Chemistry	16 095			18 083	16 710			20 012			20 168
		Telecommunications	11 714			11 660	13 329			12 188			12 311
		Vehicles & General Technology	9 493			10 265	9 998			11 053			10 691
		Total	149 058			161 230	157 833			170 514			171 726
		LCL				151 820			161 571			163 870	
		UCL				170 641			179 456			179 582	
Grand total	Total	Audio, Video & Media	13 558			16 226	14 769			16 671			16 061
		Biotechnology	10 698			10 978	11 151			11 929			12 026
		Civil Engineering & Thermodynamics	15 162			15 174	16 716			16 122			16 909
		Computer	12 144			12 263	11 957			12 651			12 568
		Electricity & Electrical Machines	17 755			18 336	18 237			19 087			18 845
		Electronics	9 902			9 679	9 280			10 028			10 095
		Handling and Processing	19 631			18 929	20 077			20 854			22 490
		Human Necessities	19 192			19 121	20 286			20 555			21 527
		Industrial Chemistry	18 382			20 765	19 719			22 774			23 293
		Measuring, Optics	12 457			13 105	13 254			13 427			13 143
		Polymers	10 002			11 212	10 181			11 612			12 284
		Pure & Applied Organic Chemistry	19 547			21 939	20 494			24 161			24 708
		Telecommunications	16 179			15 452	18 008			16 224			16 551
		Vehicles & General Technology	15 567			15 638	16 384			16 770			16 644
		Total	210 177			218 808	220 514			232 865			237 143
		LCL				209 046			223 519			228 709	
		UCL				228 569			242 211			245 578	
Growth from 2006					4.1%				10.8%			12.8%	
Implied Euro-PCT-IP					72.7%				72.2%			72.4%	
Deviation in % of forecast					4.5%				4.0%			3.6%	

Table 35: Forecasts for EPO filings – Random group (total filings, broken down by joint cluster)

Random & Smallest group
Breakdown by EPO joint cluster
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast=means (predicted filings - LCL)/predicted filings

			Year											
			2006			2007			2008			2009		
Filing type	Filing route	Cluster	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual Filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings	
First	Euro-direct	Audio, Video & Media	1 141	0.8258	0.3358	942	1 106	1.0550	0.1450	1 204	1.1005	0.1592	1 256	
		Biotechnology	1 235	0.9327	0.1600	1 152	1 525	1.0001	0.2038	1 235	1.0810	0.2295	1 335	
		Civil Engineering & Thermodynamics	1 283	0.8522	0.0922	1 094	1 460	0.8784	0.1363	1 127	0.8966	0.1594	1 151	
		Computer	970	1.1267	0.0576	1 093	1 038	1.1921	0.0633	1 156	1.2259	0.0777	1 187	
		Electricity & Electrical Machines	1 176	0.8902	0.0960	1 047	1 247	0.8806	0.1161	1 035	0.9124	0.1310	1 073	
		Electronics	1 014	0.9442	0.0957	958	968	0.9484	0.1230	962	0.9675	0.1397	981	
		Handling and Processing	1 658	0.9832	0.1131	1 630	1 836	1.0624	0.1319	1 761	1.1340	0.1502	1 889	
		Human Necessities	1 280	0.9524	0.1303	1 219	1 404	0.9797	0.1553	1 254	1.0484	0.1952	1 342	
		Industrial Chemistry	1 843	1.1880	0.0856	2 190	2 054	1.3544	0.0915	2 495	1.5993	0.1141	2 782	
		Measuring, Optics	1 013	0.9276	0.2200	940	1 072	0.9677	0.2210	981	0.9575	0.2222	970	
		Polymers	1 045	1.1249	0.1123	1 175	1 067	1.2980	0.1172	1 356	1.5627	0.1616	1 632	
		Pure & Applied Organic Chemistry	2 130	1.0950	0.0856	2 333	2 463	1.2496	0.0887	2 662	1.3783	0.1063	2 936	
		Telecommunications	1 562	0.8131	0.1597	1 270	1 774	0.9075	0.1259	1 417	0.9536	0.1454	1 498	
		Vehicles & General Technology	1 033	0.8924	0.0906	922	1 136	0.9136	0.1220	944	0.9329	0.1373	964	
		Total	18 384			17 964	20 170			19 592			20 981	
		LCL	16 668			16 668	19 170			18 228			19 259	
		UCL	19 959			19 959	20 955			20 955			22 705	
First	Euro-PCT-IP	Audio, Video & Media	850	1.1391	0.0756	968	941	1.1212	0.0696	953	1.1252	0.1063	955	
		Biotechnology	629	0.9257	0.1788	583	773	1.3215	0.1951	832	1.4697	0.2255	925	
		Civil Engineering & Thermodynamics	874	1.3254	0.0715	1 159	944	1.2681	0.0662	1 109	1.3683	0.1088	1 119	
		Computer	886	1.1309	0.0946	1 002	728	1.1378	0.1169	1 008	1.1600	0.1293	1 028	
		Electricity & Electrical Machines	1 105	1.2222	0.0754	1 351	1 153	1.2279	0.0523	1 357	1.2634	0.0664	1 397	
		Electronics	600	1.2254	0.0803	735	555	1.2143	0.0748	729	1.2447	0.0870	747	
		Handling and Processing	971	1.2750	0.1269	1 238	1 052	1.6360	0.2243	1 588	1.9144	0.2818	1 858	
		Human Necessities	1 345	1.3189	0.0609	1 773	1 495	1.3353	0.0653	1 795	1.4328	0.1067	1 928	
		Industrial Chemistry	1 182	1.4921	0.1655	1 763	1 434	1.8860	0.2315	2 228	2.3438	0.3040	2 769	
		Measuring, Optics	757	1.2230	0.0993	926	837	1.3653	0.2179	1 034	1.4272	0.2649	1 081	
		Polymers	556	1.1715	0.1452	651	796	1.3270	0.1628	737	1.5164	0.2247	843	
		Pure & Applied Organic Chemistry	1 037	1.4111	0.1580	1 464	1 376	1.8901	0.2786	1 961	2.1096	0.3142	2 188	
		Telecommunications	1 078	1.1841	0.0705	1 277	1 117	1.1963	0.0612	1 290	1.2132	0.0722	1 308	
		Vehicles & General Technology	844	1.3331	0.0613	1 125	878	1.3806	0.0871	1 105	1.4657	0.1228	1 237	
		Total	12 715			16 015	14 078			17 787			19 461	
		LCL	15 018			15 018	16 518			15 906			16 701	
		UCL	17 012			17 012	17 560			19 667			22 221	
Subsequent	Euro-direct	Audio, Video & Media	3 403	0.9598	0.0880	3 267	3 334	1.0946	0.0788	3 725	1.1766	0.0802	4 004	
		Biotechnology	1 011	0.9125	0.2285	923	1 030	0.9624	0.2292	973	1.0388	0.2334	1 051	
		Civil Engineering & Thermodynamics	4 429	0.8553	0.0805	3 788	4 658	0.9438	0.0932	4 180	1.0072	0.1258	4 461	
		Computer	2 102	0.9408	0.0715	1 977	1 942	1.0145	0.0472	2 132	1.0236	0.0665	2 151	
		Electricity & Electrical Machines	4 194	0.9680	0.0731	4 059	3 841	1.0270	0.0812	4 307	1.0255	0.0730	4 301	
		Electronics	2 436	0.9037	0.0678	2 201	2 123	0.9711	0.0648	2 366	0.9626	0.0616	2 345	
		Handling and Processing	5 586	0.9069	0.1093	5 066	5 529	0.9733	0.0640	5 437	1.0713	0.0716	5 984	
		Human Necessities	3 581	0.9361	0.1064	3 353	3 785	0.9903	0.0960	3 547	1.0358	0.1183	3 710	
		Industrial Chemistry	2 906	1.0045	0.1159	2 919	2 970	1.1779	0.1358	3 423	1.1037	0.1015	3 208	
		Measuring, Optics	2 624	0.8723	0.1513	2 289	2 674	0.9349	0.1701	2 453	0.9495	0.1703	2 491	
		Polymers	1 197	0.9627	0.0826	1 153	1 150	1.0983	0.0737	1 315	1.1153	0.0780	1 336	
		Pure & Applied Organic Chemistry	1 322	1.1348	0.1094	1 501	1 321	1.1111	0.1066	1 469	1.1987	0.1065	1 585	
		Telecommunications	2 903	0.8690	0.0806	2 523	2 905	0.8958	0.0841	2 601	0.9391	0.0898	2 726	
		Vehicles & General Technology	5 045	0.8771	0.0710	4 420	5 250	0.9430	0.0630	4 753	0.9882	0.0756	4 980	
		Total	42 735			39 439	42 511			42 680			44 332	
		LCL	41 601			41 601	40 397			40 397			41 868	
		UCL	44 964			44 964	44 964			44 964			46 796	
Subsequent	Euro-PCT-IP	Audio, Video & Media	8 164	1.3544	0.1743	11 058	9 389	1.3159	0.1506	10 743	1.2136	0.0728	9 908	
		Biotechnology	7 822	1.0576	0.1600	8 272	7 823	1.1408	0.1335	8 923	1.1173	0.0965	8 739	
		Civil Engineering & Thermodynamics	8 576	1.0645	0.1400	9 129	9 655	1.1447	0.1494	9 817	1.1912	0.1778	10 215	
		Computer	8 186	1.0045	0.0582	8 223	8 249	1.0246	0.0715	8 388	0.9964	0.0818	8 156	
		Electricity & Electrical Machines	11 281	1.0539	0.0809	11 888	11 997	1.1012	0.0722	12 422	1.0714	0.0571	12 086	
		Electronics	5 852	0.9840	0.0520	5 758	5 634	1.0399	0.0537	6 085	1.0490	0.0638	6 139	
		Handling and Processing	11 417	0.9498	0.0901	10 843	11 660	1.0739	0.0792	12 260	1.1335	0.0795	12 941	
		Human Necessities	12 986	0.9992	0.0681	12 976	13 602	1.0963	0.0730	14 236	1.1437	0.0867	14 852	
		Industrial Chemistry	12 451	1.1111	0.1487	13 835	13 262	1.1993	0.1235	14 933	1.1828	0.0884	14 728	
		Measuring, Optics	8 063	1.1050	0.1580	8 909	8 671	1.1224	0.1493	9 050	1.0689	0.1051	8 618	
		Polymers	7 204	1.1604	0.1436	8 359	7 148	1.1691	0.1161	8 422	1.2127	0.0750	8 736	
		Pure & Applied Organic Chemistry	15 057	1.1045	0.1129	16 631	15 333	1.2061	0.0901	18 160	1.1941	0.0491	17 979	
		Telecommunications	10 636	0.9715	0.0544	10 332	12 213	1.0215	0.0588	10 864	1.0322	0.0658	10 978	
		Vehicles & General Technology	8 649	1.0498	0.0717	9 080	9 120	1.1502	0.0838	9 945	1.0980	0.1075	9 497	
		Total	136 343			145 294	143 755			154 251			153 572	
		LCL	135 966			135 966	145 512			145 512			146 270	
		UCL	154 622			154 622	162 990			162 990			160 875	

Table 36: Forecasts for EPO filings at the EPO – Random & Smallest group (first and subsequent filings, broken down by joint cluster)

Random & Smallest group
Breakdown by EPO joint cluster
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year										
Filing type	Filing route	Cluster	2006	2007			2008			2009			
			Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual Filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings
First	Euro-direct	Audio, Video & Media	1 141	0.8258	0.3358	942	1 106	1.0650	0.1450	1 204	1.1005	0.1592	1 256
		Biotechnology	1 235	0.9327	0.1600	1 152	1 525	1.0001	0.2038	1 235	1.0810	0.2295	1 335
		Civil Engineering & Thermodynamics	1 283	0.8522	0.0922	1 094	1 460	0.8784	0.1363	1 127	0.8966	0.1594	1 151
		Computer	970	1.1267	0.0576	1 093	1 038	1.1921	0.0633	1 156	1.2259	0.0777	1 189
		Electricity & Electrical Machines	1 176	0.8902	0.0960	1 047	1 247	0.8806	0.1161	1 035	0.9124	0.1310	1 073
		Electronics	1 014	0.9442	0.0957	958	968	0.9484	0.1230	962	0.9675	0.1397	981
		All	Euro-direct	Audio, Video & Media	4 545			4 209	4 440			4 929	
Biotechnology	2 246				2 075	2 555			2 209			2 386	
Civil Engineering & Thermodynamics	5 712				4 881	6 118			5 307			5 611	
Computer	3 072				3 070	2 980			3 289			3 340	
Electricity & Electrical Machines	5 369				5 106	5 088			5 342			5 373	
Electronics	3 450				3 159	3 091			3 326			3 326	
Handling and Processing	7 244				6 696	7 365			7 198			7 864	
Human Necessities	4 862				4 572	5 188			4 801			5 052	
Industrial Chemistry	4 749				5 109	5 023			5 919			5 989	
Measuring, Optics	3 637				3 229	3 746			3 434			3 462	
Polymers	2 242				2 329	2 237			2 671			2 968	
Pure & Applied Organic Chemistry	3 453				3 834	3 784			4 132			4 521	
Telecommunications	4 465				3 793	4 679			4 018			4 216	
Vehicles & General Technology	6 073				5 342	6 386			5 697			5 944	
Total	61 119				57 403	62 681			62 272			65 313	
LCL					54 882				59 612			62 307	
UCL					59 923				64 931			68 319	
All	Euro-PCT-IP	Audio, Video & Media		9 014			12 026	10 339			11 695		
		Biotechnology	8 451			8 855	8 596			9 755			9 685
		Civil Engineering & Thermodynamics	9 450			10 288	10 599			10 926			11 412
		Computer	9 072			9 225	8 977			9 396			9 184
		Electricity & Electrical Machines	12 386			13 239	13 149			13 779			13 482
		Electronics	6 452			6 494	6 189			6 814			6 886
		Handling and Processing	12 387			12 081	12 712			13 848			14 799
		Human Necessities	14 331			14 749	15 097			16 032			16 779
		Industrial Chemistry	13 633			15 598	14 695			17 162			17 497
		Measuring, Optics	8 820			9 835	9 508			10 084			9 689
		Polymers	7 760			9 010	7 944			9 160			9 579
		Pure & Applied Organic Chemistry	16 095			18 095	16 710			20 121			20 168
		Telecommunications	11 714			11 609	13 329			12 154			12 287
		Vehicles & General Technology	9 493			10 205	9 998			11 114			10 734
		Total	149 058			161 309	157 833			172 038			173 033
		LCL				151 928				163 099			165 227
		UCL				170 691				180 977			180 840
Grand total	Total	Audio, Video & Media	13 558			16 235	14 769			16 625			16 124
		Biotechnology	10 698			10 930	11 151			11 963			12 050
		Civil Engineering & Thermodynamics	15 162			15 169	16 716			16 233			17 023
		Computer	12 144			12 295	11 957			12 685			12 525
		Electricity & Electrical Machines	17 755			18 345	18 237			19 121			18 855
		Electronics	9 902			9 653	9 280			10 141			10 212
		Handling and Processing	19 631			18 777	20 077			21 046			22 663
		Human Necessities	19 192			19 321	20 286			20 833			21 831
		Industrial Chemistry	18 382			20 707	19 719			23 081			23 486
		Measuring, Optics	12 457			13 064	13 254			13 518			13 161
		Polymers	10 002			11 338	10 181			11 831			12 546
		Pure & Applied Organic Chemistry	19 547			21 929	20 494			24 252			24 689
		Telecommunications	16 179			15 402	18 008			16 172			16 502
		Vehicles & General Technology	15 567			15 548	16 384			16 811			16 678
		Total	210 177			218 712	220 514			234 310			238 346
		LCL				208 998				224 984			229 981
		UCL				228 426				243 636			246 711
Growth from 2006						4.1%				11.5%		13.4%	
Implied Euro-PCT-IP						73.8%				73.4%		72.6%	
Deviation in % of forecast						4.4%				4.0%		3.5%	

Table 37: Forecasts for EPO filings – Random & Smallest group (total filings, broken down by joint cluster)

7.5 Summary of predicted growth rates and resulting filing numbers and comparison with previous panel surveys

So far in **Section 7** a variety of different forecasting approaches has been presented and discussed. Compared to previous years a third sample grouping, the “Random & Smallest” group sample has been added and could potentially serve as the reference sample on which to base our estimates of growth rates and future filings. Overviews of the main results presented in the previous sections are summarized in **Table 38** with respect to growth rates and in **Table 39** for the resulting predicted filing numbers.

Comparison of forecasts: Growth from 2006
Euro-direct and PCT-IP

Group	Breakdown	Year					
		2007		2008		2009	
		Growth rate	Deviation*	Growth rate	Deviation*	Growth rate	Deviation*
Biggest	None	2.1%		6.1%		8.0%	
Biggest	Residence bloc	0.6%		5.1%		6.5%	
Biggest	EPO joint cluster	1.7%		5.6%		6.7%	
Random	None	3.7%	3.5%	12.1%	3.3%	14.5%	3.8%
Random	Residence bloc	1.8%	3.7%	11.7%	3.6%	13.9%	4.8%
Random	None (Euro-direct and PCT-IP filings combined)	0.4%	3.6%	7.0%	3.8%	9.8%	4.1%
Random	Residence bloc (ED and PCT-IP filings combined)	-0.8%	4.5%	6.3%	4.5%	8.7%	4.8%
Random	Residence bloc (ED and PCT-IP filings combined for US residence bloc only)	-0.1%	4.2%	9.9%	4.1%	13.5%	4.6%
Random	Residence bloc (“other” incorp. in EP)	2.5%	3.6%	11.8%	3.8%	13.8%	4.9%
Random	None (excluding companies with comments)	3.5%	3.6%	11.5%	3.4%	13.4%	4.0%
Random	Residence bloc (excluding companies with comments)	1.2%	3.9%	11.0%	3.8%	12.4%	5.2%
Random	Residence bloc (“Other” incorporated in EPC, excluding companies with comments)	2.1%	3.7%	11.0%	4.0%	12.3%	5.2%
Random	EPO joint cluster	4.1%	4.5%	10.8%	4.0%	12.8%	3.6%
Random & Smallest	None	3.5%	3.4%	11.8%	3.3%	14.3%	3.8%
Random & Smallest	Residence bloc	1.5%	3.7%	11.4%	3.5%	13.5%	4.8%
Random & Smallest	None (Euro-direct and PCT-IP filings combined)	0.3%	3.5%	6.9%	3.7%	9.8%	4.0%
Random & Smallest	Residence bloc (ED and PCT-IP filings combined)	-0.9%	4.5%	6.2%	4.4%	8.6%	4.8%
Random & Smallest	Residence bloc (ED and PCT-IP filings combined for US residence bloc only)	-0.4%	4.2%	9.5%	4.0%	13.1%	4.6%
Random & Smallest	Residence bloc (“other” incorp. in EP)	2.2%	3.5%	11.4%	3.8%	13.4%	4.9%
Random & Smallest	None (excluding companies with comments)	3.3%	3.6%	11.4%	3.4%	13.3%	4.0%
Random & Smallest	Residence bloc (excluding companies with comments)	1.0%	3.9%	10.8%	3.8%	12.2%	5.2%
Random & Smallest	Residence bloc (“Other” incorporated in EPC, excluding companies with comments)	1.9%	3.6%	10.8%	4.0%	12.1%	5.2%
Random & Smallest	EPO joint cluster	4.1%	4.4%	11.5%	4.0%	13.4%	3.5%

Table 38: Predicted growth rates for Euro-direct and Euro-PCT-IP filings by forecasting methods

Comparison of forecasts: Predicted total filings
Euro-direct and PCT-IP

LCL/UCL indicates lower/upper 95% confidence limit

		Year								
		2007			2008			2009		
Group	Breakdown	Predicted filings	LCL	UCL	Predicted filings	LCL	UCL	Predicted filings	LCL	UCL
Biggest	None	214 497			223 070			227 064		
Biggest	Residence bloc	59 658			61 310			61 004		
Biggest	EPO joint cluster	213 827			222 026			224 282		
Random	None	218 005	210 436	225 574	235 655	227 852	243 458	240 616	231 474	249 757
Random	Residence bloc	213 939	205 938	221 941	234 845	226 407	243 283	239 299	227 773	250 825
Random	None (Euro-direct and PCT-IP filings combined)	210 986	203 462	218 510	224 803	216 323	233 284	230 766	221 341	240 192
Random	Residence bloc (ED and PCT-IP filings combined)	208 490	199 108	217 873	223 493	213 485	233 502	228 562	217 507	239 618
Random	Residence bloc ("other" incorp. in EP)	215 450	207 800	223 100	234 938	225 973	243 903	239 115	227 398	250 832
Random	Residence bloc (ED and PCT-IP filings combined for US residence bloc only)	210 024	201 221	218 828	230 990	221 618	240 362	238 466	227 493	249 439
Random	None (excluding companies with comments)	217 475	209 609	225 342	234 329	226 301	242 357	238 411	228 918	247 903
Random	Residence bloc (excluding companies with comments)	212 616	204 267	220 965	233 211	224 330	242 092	236 152	223 813	248 492
Random	Residence bloc ("Other" incorporated in EPC, excluding companies with comments)	214 616	206 738	222 494	233 244	223 924	242 565	236 061	223 774	248 349
Random	EPO joint cluster	218 808	209 046	228 569	232 865	223 519	242 211	237 143	228 709	245 578
Random & Smallest	None	217 444	209 961	224 927	235 056	227 359	242 753	240 131	231 081	249 180
Random & Smallest	Residence bloc	213 284	205 369	221 199	234 077	225 782	242 372	238 587	227 169	250 006
Random & Smallest	None (Euro-direct and PCT-IP filings combined)	210 911	203 480	218 343	224 719	216 357	233 080	230 701	221 384	240 018
Random & Smallest	Residence bloc (ED and PCT-IP filings combined)	208 191	198 911	217 470	223 230	213 380	233 080	228 347	217 444	239 251
Random & Smallest	Residence bloc ("other" incorp. in EP)	214 701	207 167	222 235	234 105	225 289	242 921	238 367	226 748	249 987
Random & Smallest	Residence bloc (ED and PCT-IP filings combined for US residence bloc only)	209 369	200 643	218 094	230 222	220 979	239 466	237 754	226 894	248 614
Random & Smallest	None (excluding companies with comments)	217 144	209 351	224 938	234 070	226 124	242 017	238 156	228 737	247 575
Random & Smallest	Residence bloc (excluding companies with comments)	212 259	203 978	220 540	232 823	224 054	241 592	235 792	223 523	248 060
Random & Smallest	Residence bloc ("Other" incorporated in EPC, excluding companies with comments)	214 187	206 408	221 967	232 838	223 634	242 043	235 683	223 468	247 898
Random & Smallest	EPO joint cluster	218 712	208 998	228 426	234 310	224 984	243 636	238 346	229 981	246 711
Actual Filings		220 514								

Table 39: Predicted total numbers of Euro-direct and Euro-PCT-IP filings by forecasting method

A priori, the Biggest sample is not the preferred sample on which to base overall estimates of growth rates and filings, since its composition is skewed to large companies and is thus not representative of the overall EPO applicant population. Comparing the scenarios with no residence bloc breakdowns or other corrections, estimates based on the Biggest group are less optimistic than those of the Random group and those of the Random & Smallest group. Based on actual filings in 2007 which are now reasonably well known, the Biggest group estimates show the largest underestimates without residence bloc breakdowns or other corrections. The Biggest group also tends to show lower forecasts for 2008 and 2009.

Random group and Random & Smallest group estimates without any breakdown underestimate the actual 2007 filing number by less than 1.5% and accordingly, both confidence bands easily encompass the true 2007 filing number.

Forecasts based on the Random & Smallest group result in slightly narrower confidence bands compared to those of the Random group alone. All in all, and independent of the specific forecasting method, results for the Random group and the Random & Smallest group are almost identical.

The recommendation regarding which sample group to use thus goes to the Random & Smallest group. With respect to which forecasting method to use, our recommendation this year returns to the method used in the years 2004 and 2005. This uses the forecast based on the estimate without any bloc breakdown (**Table 26**). Even without applying birth/death corrections, it underestimates the currently known actual filing totals for 2007 only slightly and it produces the narrowest confidence bands.

Our recommendation differs from the recommendation in the 2006 report, where estimates based on the Random group with breakdown by residence bloc were considered the preferred prediction method, mainly because the forecasts without bloc breakdowns were too low in comparison to the known 2006 filings totals at the time they were made.

Based on our recommendation the **overall survey forecast for total filings in 2007 is 217 444**, with approximate 95% confidence limits of 209 961 to 224 927.

To put the comparison of the two different breakdown scenarios in perspective, **Figure 19** and **Table 40** as well as **Figure 20** and **Table 41** compare the forecasting results of previous panel surveys since 2003 without and with residence bloc breakdown respectively.

The **precision of predictions** from previous years' panels can be evaluated by comparison with actual filing numbers, which are given in the last row of the respective tables. Based on the actual number of filings, the forecasted numbers are given as percentage values of the actual filings in brackets. Overall, the forecast deviation is less than 10% which underlines the high level of forecasting precision. The accuracy of the predictions has improved from the 2003 to the 2005 panel survey. With one exception, the previous forecasts all underestimated the actual number of filings. Concerning the forecasting method, in retrospect, the estimates based on the Random group with no subsidiary breakdown have been more accurate than the estimates based on a breakdown by residence bloc for the years 2003, 2005 and now 2007. The opposite is true for the years 2004 and 2006, where the estimates based on a breakdown by residence bloc achieved a higher level of accuracy. However, the presented graphs and tables illustrate that the difference between the two methods in terms of forecasting accuracy is rather small.

Given that both forecasting methods calculating growth rates for the Random group (no subsidiary breakdown and breakdown by residence bloc) have previously proven to be reliable in yielding similar results, it is recommended to continue monitoring the performance of both methods in subsequent surveys.

Comparison of forecasts since 2003 based on Random Sample with no subsidiary breakdown

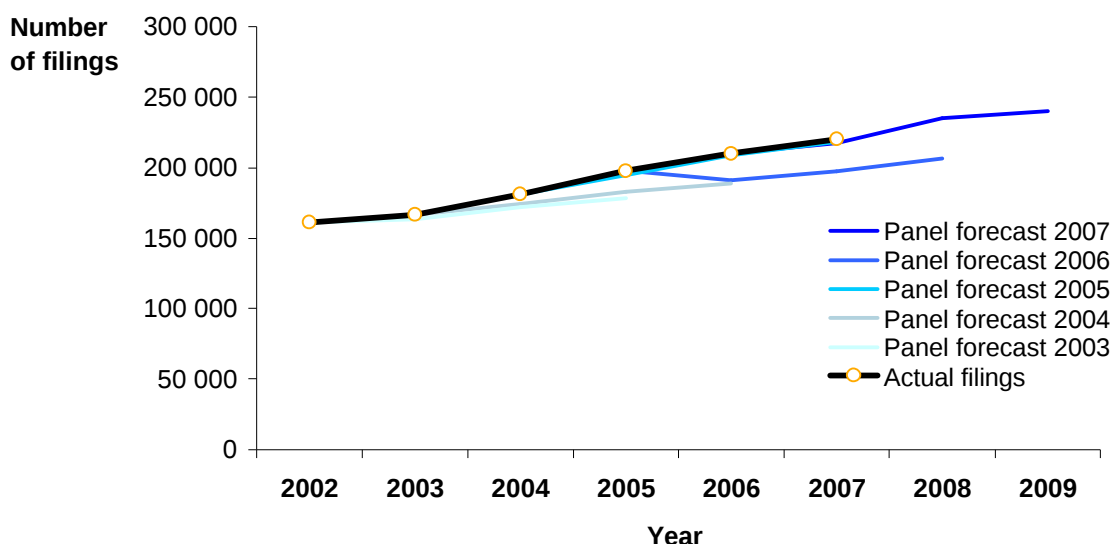


Figure 19: Comparison of forecasts since 2003 (Random group with no subsidiary breakdown, Panel forecast 2007 based on Random & Smallest group)

Comparison of forecasts since 2003 based on Random Sample without subsidiary breakdown

Number of filings* forecasted based on ...	Forecasting Year							
	2002	2003	2004	2005	2006	2007	2008	2009
... 2003 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit	161 083 (=actual)	163 158 (98%) 154 959 171 357	171 936 (95%) 161 742 182 129	178 477 (90%) 166 359 190 594				
... 2004 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit		166 635 (=actual)	174 456 (96%) 164 250 184 661	182 833 (93%) 170 228 195 439	188 957 (90%) 175 084 202 830			
... 2005 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit			181 078 (=actual)	194 673 (99%) 186 324 203 023	208 772 (99%) 197 983 219 560	218 007 (99%) 205 505 230 509		
... 2006 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit				197 564 (=actual)	191 215 (91%) 178 179 204 250	197 344 (89%) 178 579 216 109	206 595 (N/A) 185 533 227 658	
... 2007 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit					210 177 (=actual)	217 444 (99%) 209 961 224 927	235 056 (N/A) 227 359 242 753	240 131 (N/A) 231 081 249 180
Actual filings	161 083	166 635	181 078	197 564	210 177	220 515	N/A	N/A

*) First and subsequent Euro-direct and Euro-PCT-IP filings

Table 40: Comparison of forecasts since 2003 (Random group with no subsidiary breakdown, 2007 panel survey forecasts based on Random & Smallest group)

Comparison of forecasts since 2003 based on Random sample with breakdown by residence bloc

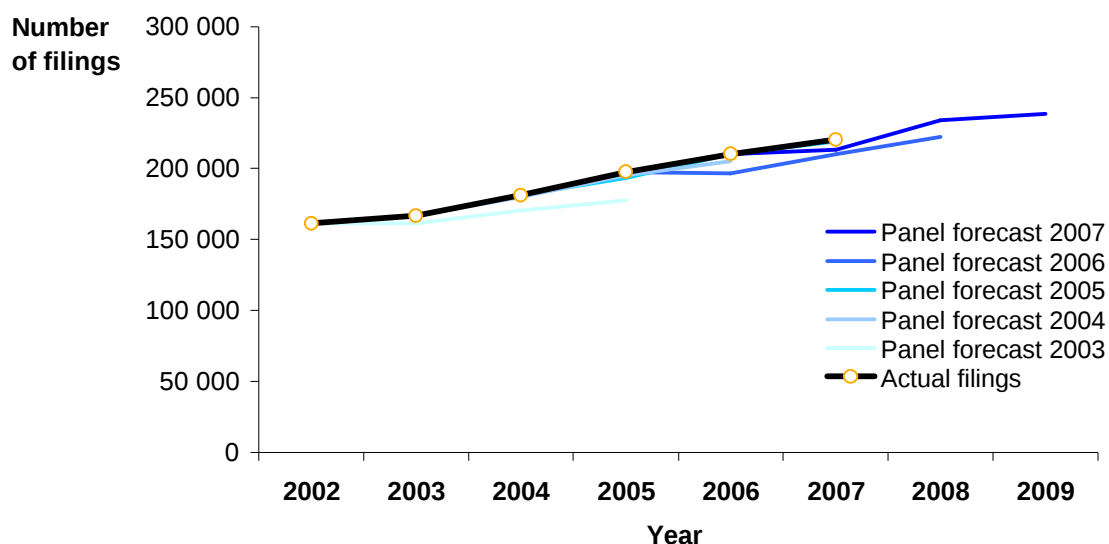


Figure 20: Comparison of forecasts since 2003 (Random group broken down by residence bloc, Panel forecast 2007 based on Random & Smallest group)

Comparison of forecasts since 2003 based on Random sample with breakdown by residence bloc

Number of filings* forecasted based on ...	Forecasting Year							
	2002	2003	2004	2005	2006	2007	2008	2009
... 2003 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit	161 083 (=actual)	161 783 (97%) 154 069 169 496	170 462 (94%) 160 786 180 138	177 649 (90%) 165 849 189 449				
... 2004 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit		166 635 (=actual)	179 952 (99%) 158 112 201 791	194 919 (99%) 164 308 225 531	205 385 (98%) 173 259 237 511			
... 2005 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit			181 078 (=actual)	193 715 (98%) 184 032 203 398	210 044 (100%) 197 450 222 637	219 381 (99%) 204 851 233 910		
... 2006 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit				197 564 (=actual)	196 402 (93%) 178 298 214 506	210 436 (95%) 187 051 233 821	222 271 (N/A) 196 847 247 694	
... 2007 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit					210 177 (=actual)	213 284 (97%) 205 369 221 199	234 077 (N/A) 225 782 242 372	238 587 (N/A) 227 169 250 006
Actual filings	161 083	166 635	181 078	197 564	210 177	220 515	N/A	N/A

*) First and subsequent Euro-direct and Euro-PCT-IP filings

Table 41: Comparison of forecasts since 2003 (Random group broken down by residence bloc, 2007 panel survey forecasts based on Random & Smallest group)

Due to the design of the survey, growth estimates and predicted filing totals based purely on these survey data can not properly account for birth and death effects in the true EPO applicant population. Specifically, it is a prerequisite to have made at least one filing in the previous year in order to be available and eligible for participation in the survey.

One can however attempt to calculate such birth/death correction factors with data available at EPO and consequently come up with 1-year, 2-year and 3-year ahead correction factors to add to (or subtract from) the filing predictions of the survey. See **Annex VIII** for details on this procedure.

Applying the suggested respective correction factors to this year's filing predictions results in corrected predictions as given in **Table 42**. The corrected filing estimates using the recommended prediction method are **222 680 for 2007, 247 052 for 2008 and 255 343 for 2009**.

Birth / death correction factors can also be applied retroactively to previous years' forecasts in order to counter the yearly survey's inability to directly estimate these effects. **Table 43** and **Figure 21** show corrected estimated filing totals based on survey estimates without subsidiary breakdown and after addition of the survey year specific correction factors. **Table 44** and **Figure 22** show the corrected estimated filing totals based on survey estimates with residence bloc breakdown and survey year specific correction factors. It is clear that the use of the correction factors has coped to some extent with the underestimation problems in the surveys. However, as further discussed in **Annex VIII**, the corrections are not a panacea and care must still be taken to consider the margin of error of each forecast as represented by the confidence limits. Thus, **Table 42** suggests total filings

of 255 343 in 2009 with confidence limits of 246 000 and 264 000. This is still quite a large span in terms of budget planning at EPO.

Comparison of forecasts: Predicted total filings

Euro-direct and PCT-IP

LCL/UCL indicates lower/upper 95% confidence limit

		Year								
		2007			2008			2009		
		Predicted filings	LCL	UCL	Predicted filings	LCL	UCL	Predicted filings	LCL	UCL
Group	Breakdown									
Birth / Death Correction Factor		5 236	5 236	5 236	11 996	11 996	11 996	15 212	15 212	15 212
Biggest	None	219 733			235 066			242 276		
Biggest	Residence bloc	64 894			73 306			76 216		
Biggest	EPO joint cluster	219 063			234 022			239 494		
Random	None	223 241	215 672	230 810	247 651	239 848	255 454	255 828	246 686	264 969
Random	Residence bloc	219 175	211 174	227 177	246 841	238 403	255 279	254 511	242 985	266 037
Random	None (Euro-direct and PCT-IP filings combined)	216 222	208 698	223 746	236 799	228 319	245 280	245 978	236 553	255 404
Random	Residence bloc (ED and PCT-IP filings combined)	213 726	204 344	223 109	235 489	225 481	245 498	243 774	232 719	254 830
Random	Residence bloc ("other" incorp. in EP)	220 686	213 036	228 336	246 934	237 969	255 899	254 327	242 610	266 044
Random	Residence bloc (ED and PCT-IP filings combined for US residence bloc only)	215 260	206 457	224 064	242 986	233 614	252 358	253 678	242 705	264 651
Random	None (excluding companies with comments)	222 711	214 845	230 578	246 325	238 297	254 353	253 623	244 130	263 115
Random	Residence bloc (excluding companies with comments)	217 852	209 503	226 201	245 207	236 326	254 088	251 364	239 025	263 704
Random	Residence bloc ("Other" incorporated in EPC, excluding companies with comments)	219 852	211 974	227 730	245 240	235 920	254 561	251 273	238 986	263 561
Random	EPO joint cluster	224 044	214 282	233 805	244 861	235 515	254 207	252 355	243 921	260 790
Random & Smallest	None	222 680	215 197	230 163	247 052	239 355	254 749	255 343	246 293	264 392
Random & Smallest	Residence bloc	218 520	210 605	226 435	246 073	237 778	254 368	253 799	242 381	265 218
Random & Smallest	None (Euro-direct and PCT-IP filings combined)	216 147	208 716	223 579	236 715	228 353	245 076	245 913	236 586	255 200
Random & Smallest	Residence bloc (ED and PCT-IP filings combined)	213 427	204 147	222 706	235 226	225 376	245 076	243 559	232 656	254 463
Random & Smallest	Residence bloc ("other" incorp. in EP)	219 937	212 403	227 471	246 101	237 285	254 917	253 579	241 960	265 199
Random & Smallest	Residence bloc (ED and PCT-IP filings combined for US residence bloc only)	214 605	205 879	223 330	242 218	232 975	251 462	252 966	242 106	263 826
Random & Smallest	None (excluding companies with comments)	222 380	214 587	230 174	246 066	238 120	254 013	253 368	243 949	262 787
Random & Smallest	Residence bloc (excluding companies with comments)	217 495	209 214	225 776	244 819	236 050	253 588	251 004	238 735	263 272
Random & Smallest	Residence bloc ("Other" incorporated in EPC, excluding companies with comments)	219 423	211 644	227 203	244 834	235 630	254 039	250 895	238 680	263 110
Random & Smallest	EPO joint cluster	223 948	214 234	233 662	246 306	236 980	255 632	253 558	245 193	261 923
Actual Filings		220 514								

Table 42: Birth/Death corrected predicted total numbers of Euro-direct and Euro-PCT-IP filings by forecasting method

Comparison of forecasts since 2003 based on Random Sample without subsidiary breakdown

(with birth / death corrections available at time of survey applied)

Number of filings* forecasted based on ...	Forecasting Year							
	2002	2003	2004	2005	2006	2007	2008	2009
... 2003 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit	161 083 (=actual)	163 100 (98%)	175 560 (97%)	186 644 (94%)				
		154 901	165 366	174 526				
		171 299	185 753	198 761				
... 2004 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit		166 635 (=actual)	177 872 (98%)	187 067 (95%)	197 240 (94%)			
			167 666	174 462	183 367			
			188 077	199 673	211 113			
... 2005 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit			181 078 (=actual)	196 738 (100%)	215 058 (102%)	224 345 (102%)		
				188 389	204 269	211 843		
				205 088	225 846	236 847		
... 2006 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit				197 564 (=actual)	194 551 (93%)	203 331 (92%)	216 904 (N/A)	
					181 515	184 566	195 842	
					207 586	222 096	237 967	
... 2007 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit					210 177 (=actual)	222 680 (101%)	247 052 (N/A)	255 343 (N/A)
						215 197	239 355	246 293
						230 163	254 749	264 392
Actual filings	161 083	166 635	181 078	197 564	210 177	220 515	N/A	N/A

*) First and subsequent Euro-direct and Euro-PCT-IP filings

Table 43: Comparison of birth/death corrected forecasts since 2003 (Random group with no subsidiary breakdown, 2007 panel survey forecasts based on Random & Smallest group)

Comparison of forecasts since 2003 based on Random Sample with no subsidiary breakdown
(with birth / death corrections available at time of survey applied)

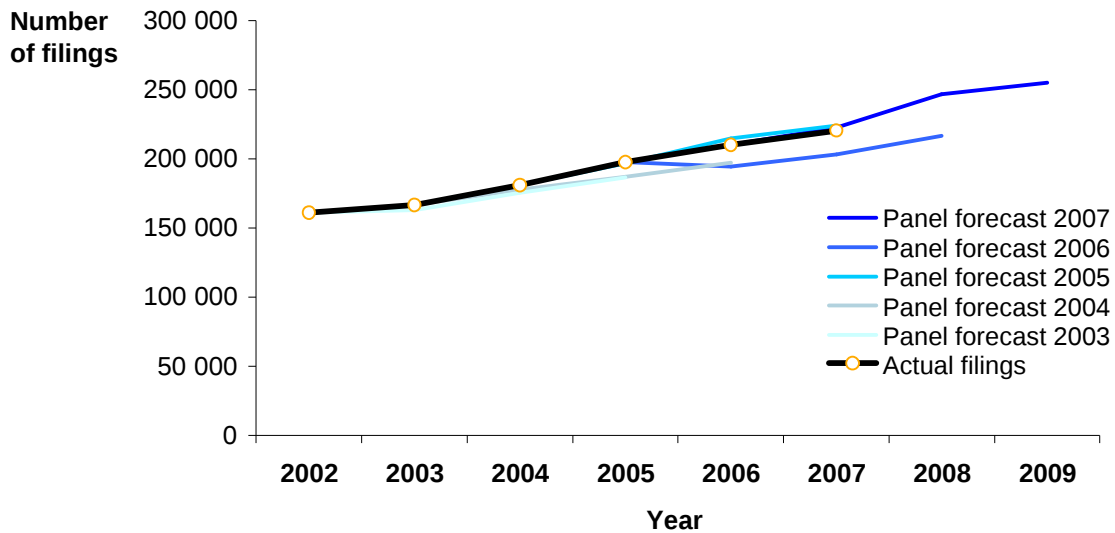


Figure 21: Comparison of birth/death corrected forecasts since 2003 (Random group with no subsidiary breakdown, Panel forecast 2007 based on Random & Smallest group)

Comparison of forecasts since 2003 based on Random sample with breakdown by residence bloc
(with birth / death corrections available at time of survey applied)

Number of filings* forecasted based on ...	Forecasting Year							
	2002	2003	2004	2005	2006	2007	2008	2009
... 2003 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit	161 083 (=actual)	161 725 (97%) 154 011 169 438	174 086 (96%) 164 410 183 762	185 816 (94%) 174 016 197 616				
... 2004 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit		166 635 (=actual)	183 368 (101%) 161 528 205 207	199 153 (101%) 168 542 229 765	213 668 (102%) 181 542 245 794			
... 2005 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit			181 078 (=actual)	195 780 (99%) 186 097 205 463	216 330 (103%) 203 736 228 923	225 719 (102%) 211 189 240 248		
... 2006 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit				197 564 (=actual)	199 738 (95%) 181 634 217 842	216 423 (98%) 193 038 239 808	232 580 (N/A) 207 156 258 003	
... 2007 panel survey (in % of actual filings) Lower confidence limit Upper confidence limit					210 177 (=actual)	218 520 (99%) 210 605 226 435	246 073 (N/A) 237 778 254 368	253 799 (N/A) 242 381 265 218
Actual filings	161 083	166 635	181 078	197 564	210 177	220 515	N/A	N/A

*) First and subsequent Euro-direct and Euro-PCT-IP filings

Table 44: Comparison of birth/death corrected forecasts since 2003 (Random group broken down by residence bloc, 2007 panel survey forecasts based on Random & Smallest group)

Comparison of forecasts since 2003 based on Random sample with breakdown by residence bloc
(with birth / death corrections available at time of survey applied)

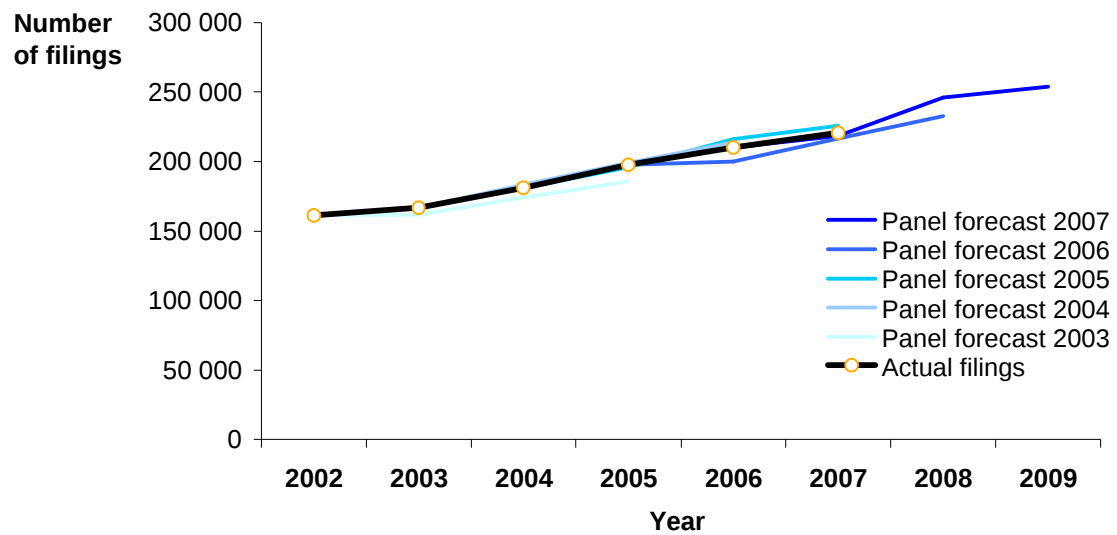


Figure 22: Comparison of birth/death corrected forecasts since 2003 (Random group broken down by residence bloc, Panel forecast 2007 based on Random & Smallest group)

8 Forecasts for PCT regional phase applications

The results for PCT regional phase applications at the EPO were obtained from question (j) in **Section B** of the questionnaire (**Annex I**). The forecasts for Euro-PCT-RP filings are calculated both for the Biggest group sample and the Random & Smallest group sample, applying the composite index and the Q-index respectively. Separate questions on first filings and subsequent filings are not asked regarding Euro-PCT-RP applications.

An overview of the main results of the forecasts for Euro-PCT-RP applications according to the different methods is given in terms of growth rates (**Table 45**) and in terms of absolute numbers of filings (**Table 46**). Firstly, Euro-PCT-RP filings are estimated for the Biggest group sample with no subsidiary breakdown (**Table 47**) and broken down by residence bloc (**Table 48**). Secondly, the Euro-PCT-RP filing forecasts are given for the Random & Smallest group sample. Q-indices for the Random & Smallest group are calculated with no subsidiary breakdown (**Table 49**). The same analysis is repeated with the Euro-PCT-RP filings broken down by residence bloc (**Table 50**). Finally, the regional phase filing predictions are shown in **Table 51**, based on the break down by joint cluster of the Random group sample. Results for the Random group in isolation are not separately shown in this report, as there are no material differences to the Random & Smallest group findings.

The results confirm the prediction made for 2007 in the 2006 report which indicated significant increases in the numbers of filings entering the regional phase in the year 2007. The 2007 growth rates (from 2006) for the Biggest group is estimated at 6.6% and for the Random & Smallest group it is estimated to be in a range between 8.4% to 16.1% for the Random group, depending on the method used. In contrast to last year's prediction, all forecasting approaches now predict significant growth in the number of Euro-PCT-RP filings from 2007 to 2008 with a pronounced flattening of growth occurring from 2008 to 2009.

Comparing deviations of confidence limits from forecasts, the analysis without residence bloc breakdown consistently produces the narrowest confidence bands and should thus be considered superior. Interestingly, the 2007 growth forecast of 16.1% based on a joint cluster breakdown is almost double the estimated growth without breakdown. By 2009 though, all estimates converge.

As discussed in **Section 7.5** for Euro-direct and Euro-PCT-IP filings, birth/death corrected estimates can also be obtained for Euro-PCT-RP filings. See **Annex VIII** for the appropriate correction factors.

Comparison of forecasts: Growth from 2006
Euro-PCT-RP

Group	Breakdown	2007		2008		2009	
		Growth rate	Deviation*	Growth rate	Deviation*	Growth rate	Deviation*
Biggest	None	6.6%		14.0%		15.4%	
Biggest	Residence bloc	6.6%		14.9%		14.8%	
Random	None	9.0%	6.8%	18.2%	8.2%	22.3%	8.7%
Random	None (excluding companies with comments)	10.6%	7.5%	10.6%	9.0%	10.6%	9.5%
Random	Residence bloc	10.6%	10.7%	20.8%	12.9%	25.6%	13.6%
Random	Residence bloc (excluding companies with comments)	12.2%	12.1%	23.0%	14.6%	26.6%	15.3%
Random	EPO joint cluster	16.5%	10.5%	21.6%	13.8%	25.3%	13.9%
Random & Smallest	None	8.4%	6.8%	16.9%	8.1%	21.1%	8.6%
Random & Smallest	None (excluding companies with comments)	10.3%	7.4%	18.9%	8.9%	22.3%	9.4%
Random & Smallest	Residence bloc	10.1%	10.7%	19.6%	12.9%	24.4%	13.6%
Random & Smallest	Residence bloc (excluding companies with comments)	11.9%	12.1%	22.0%	14.6%	25.8%	15.3%
Random & Smallest	EPO joint cluster	16.1%	10.6%	20.2%	13.9%	23.5%	14.0%

*) **Deviation** corresponds to the distance from the forecasted filings to the lower 95% confidence limit (as % of the forecasted filings)

Table 45: Overview of predicted growth rates for Euro-PCT-RP applications by forecasting methods

Comparison of forecasts: Predicted total filings
Euro-PCT-RP
LCL/UCL indicates lower/upper 95% confidence limit

Group	Breakdown	2007			2008			2009		
		Predicted filings	LCL	UCL	Predicted filings	LCL	UCL	Predicted filings	LCL	UCL
Biggest	None	79 164			84 719			85 704		
Biggest	Residence bloc	79 216			85 331			85 265		
Random	None	80 951	75 440	86 463	87 796	80 581	95 011	90 850	82 977	98 722
Random	None (excluding companies with comments)	82 150	76 029	88 270	89 087	81 059	97 115	91 475	82 819	100 131
Random	Residence bloc	82 175	73 357	90 994	89 755	78 207	101 302	93 294	80 591	105 998
Random	Residence bloc (excluding companies with comments)	83 379	73 289	93 470	91 352	78 058	104 646	94 061	79 656	108 466
Random	EPO joint cluster	86 588	77 454	95 722	90 370	77 923	102 816	93 121	80 222	106 021
Random & Smallest	None	80 572	75 125	86 019	86 869	79 826	93 911	89 999	82 298	97 700
Random & Smallest	None (excluding companies with comments)	81 935	75 866	88 004	88 368	80 509	96 226	90 899	82 373	99 425
Random & Smallest	Residence bloc	81 812	73 031	90 593	88 841	77 387	100 295	92 444	79 838	105 050
Random & Smallest	Residence bloc (excluding companies with comments)	83 159	73 103	93 215	90 615	77 418	103 813	93 467	79 141	107 793
Random & Smallest	EPO joint cluster	86 249	77 100	95 398	89 290	76 915	101 666	91 752	78 866	104 639
Actual filings		74 996								

Table 46: Overview of predicted filing numbers for Euro-PCT-RP applications by forecasting methods

Biggest Group
No subsidiary breakdown
Composite Indices

			Year							
			2006	2007		2008		2009		
Patent Office	Filing route	Res. bloc	Actual filings	Index 07	Predicted filings	Actual filings	Index 08	Predicted filings	Index 09	Predicted filings
EPO	Euro-PCT-RP	Total	74 295	1.0655	79 164	78 618	1.1403	84 719	1.1536	85 704
Growth from 2006					6.6%			14.0%		15.4%

Table 47: Forecasts for Euro-PCT-RP applications (no subsidiary breakdown; composite index based on Biggest group)

Biggest group
Breakdown by residence bloc
Composite indices

			Year							
Patent office	Filing route	Res. bloc	2006	2007			2008		2009	
			Actual filings	Index 07	Predicted filings	Actual filings	Index 08	Predicted filings	Index 09	Predicted filings
EPO	Euro-PCT-RP	EP	31 761	0.9797	31 118	32 666	1.0522	33 420	1.0848	34 456
		JA	11 272	1.1119	12 533	12 199	1.1520	12 986	1.1892	13 405
		OT	6 175	1.0655 *	6 580	7 642	1.1403 *	7 041	1.1536 *	7 123
		US	25 087	1.1554	28 986	26 111	1.2709	31 884	1.2070	30 281
Total		Total	74 295		79 216	78 618		85 331		85 265
Growth from 2006					6.6%			14.9%		14.8%

Table 48: Forecasts for Euro-PCT-RP applications (breakdown by residence bloc; composite index based on Biggest group)

Random & Smallest group
No subsidiary breakdown
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year												
			2006	2007				2008				2009			
Patent office	Filing route	Res. bloc	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings		
EPO	Euro-PCT-RP	Total	74 295	1.0845	0.0345	80 572	78 618	1.1692	0.0413	86 869	1.2114	0.0436	89 999		
		LCL				75 125				79 826			82 298		
		UCL				86 019				93 911			97 700		
Growth from 2006						8.4%				16.9%			21.1%		
Deviation in % of forecast						6.8%				8.1%			8.6%		

Table 49: Forecasts for Euro-PCT-RP applications (no subsidiary breakdown; Q-index based on Random & Smallest group)

Random & Smallest group
Breakdown by residence bloc
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (Predicted filings - LCL)/Predicted filings

			Year										
Patent Office	Filing route	Res. bloc	2006	2007			2008			2009			
			Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings
EPO	Euro-PCT-RP	EP	31 761	1.0010	0.0361	31 794	32 666	1.1000	0.0409	34 936	1.1512	0.0469	36 563
		JA	11 272	1.1137	0.0311	12 554	12 199	1.1594	0.0372	13 069	1.1818	0.0392	13 321
		OT	6 175	1.1070	0.0610	6 835	7 642	1.1046	0.0856	6 821	1.1813	0.0775	7 295
		US	25 087	1.2209	0.1382	30 629	26 111	1.3559	0.1618	34 016	1.4057	0.1706	35 266
Total		Total	74 295			81 812	78 618			88 841			92 444
		LCL				73 031				77 387			79 838
		UCL				90 593				100 295			105 050
Growth from 2006						10.1%				19.6%			24.4%
Deviation in % of forecast						10.7%				12.9%			13.6%

Table 50: Forecasts for Euro-PCT-RP applications (broken down by residence bloc; Q-index based on Random & Smallest group)

Random & Smallest group
Breakdown by EPO Joint Cluster
Q-indices

S.E. indicates standard error of logarithm
LCU/UCI indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year											
			2006		2007			2008			2009			
Patent office	Filing route	Cluster	Actual filings	Q-index 07	S.E. 07	Predicted filings	Actual filings	Q-index 08	S.E. 08	Predicted filings	Q-index 09	S.E. 09	Predicted filings	
EPO	Euro-PCT-RP	Audio, Video & Media	4 523	1.6062	0.3992	7 265	4 445	1.8070	0.5214	8 173	1.7910	0.5425	8 101	
		Biotechnology	4 898	0.9929	0.0956	4 863	4 926	1.1396	0.1162	5 582	1.1411	0.1056	5 589	
		Civil Engineering & Thermodynamics	4 232	0.9908	0.1233	4 193	4 978	1.0264	0.1319	4 344	1.0677	0.1582	4 518	
		Computer	3 819	1.2147	0.2328	4 639	3 884	1.0459	0.1713	3 994	1.0469	0.1804	3 998	
		Electricity & Electrical Machines	5 148	1.0895	0.1276	5 609	5 437	1.0816	0.1163	5 568	1.1040	0.1170	5 683	
		Electronics	3 137	1.0053	0.1277	3 154	3 319	0.9895	0.0926	3 104	0.9999	0.0990	3 137	
		Handling and Processing	6 725	1.3955	0.1460	9 385	6 876	1.5166	0.1458	10 199	1.5993	0.1508	10 756	
		Human Necessities	6 594	0.9962	0.0840	6 569	7 476	1.0700	0.0941	7 056	1.1397	0.1187	7 515	
		Industrial Chemistry	7 832	1.2195	0.1092	9 551	8 089	1.2431	0.1435	9 736	1.2689	0.1292	9 938	
		Measuring, Optics	4 314	1.1284	0.1982	4 868	4 574	1.0268	0.1784	4 430	1.0070	0.1501	4 344	
		Polymers	4 315	1.2330	0.1088	5 321	4 613	1.2786	0.1183	5 517	1.2785	0.1015	5 517	
		Pure & Applied Organic Chemistry	8 800	1.1397	0.1119	10 030	9 106	1.1594	0.0966	10 203	1.2361	0.0794	10 877	
		Telecommunications	5 280	1.1496	0.2472	6 070	5 992	1.1757	0.2855	6 208	1.2032	0.2888	6 353	
		Vehicles & General Technology	4 678	1.0121	0.0970	4 735	4 903	1.1069	0.1124	5 178	1.1599	0.1344	5 426	
		Total	74 295			86 249	78 618			89 290			91 752	
		LCL				77 100				76 915			78 866	
		UCL				95 398				101 636			104 639	
Growth from 2006						16.1%				20.2%		23.5%		
Deviation in % of forecast						10.6%				13.9%		14.0%		

Table 51: Forecasts for Euro-PCT-RP applications (broken down by joint cluster; Q-index based on Random & Smallest group)

9 Conclusions

The main results of this report are summarized in the summary **Section 1**. The following discussion therefore concentrates on a few additional points.

As explained in **Section 7.5**, the recommended forecasting method for future filings at the EPO is based on the Random & Smallest group without residence group breakdown. This forecasting method is selected since it provides the least biased estimates compared to currently known actual 2007 filing totals and since it produces the smallest standard deviations and thus the narrowest confidence bands of all estimates analysed.

Different growth forecasts are summarised in **Table 38** and the corresponding filing estimates are given in **Table 39**.

This recommendation returns to the conclusion of the 2005 report and departs from the 2006 conclusion, where estimates produced with the residence bloc breakdown showed a closer match to the actual 2006 filing numbers. However, as the assessment of the results in **Section 7.5** has shown, the estimates of both methods have shown a high level of reliability for forecasting patent filings with a relatively small difference in the forecasts by method. For future Applicant Panel Surveys it is recommended to carry on with the forecasts based on the different methods and to monitor which approach produces the best results. Also the assessment of results comparing actual and forecasted filings for previous years should be repeated in subsequent reports.

In this year's report, the application of birth/death correction factors has been extended from a commentary (in the introduction to the 2006 survey report) to a concrete correction factor offered in **Section 7.5**. This has been done in order to overcome the survey design's limitations on assessing applicant new entries and dropouts. Corrected filing predictions for all estimation approaches are given in **Table 42**. After addition of these correction factors, the recommended forecasting method that is mentioned above indicates **222 680 total filings in 2007**, then projects **247 052 total filings in 2008** and **255 343 total filings in 2009**. The historical reanalysis that is shown in **Figure 22** suggests that this method should produce good results.

The applicants responding to the survey in 2007 represented an appreciable percentage of applications from the total population (see **Annex IX**). There is a reasonable level of agreement between the results obtained through different forecasting methods, as well as between those based on the Biggest group, the Random group and the Random and Smallest group. Despite the fact that the groups do, to some extent, overlap, this may be taken as an indication that the results should be fairly representative of future filing intentions. However, there is always the possibility that the applicants who did not respond have different intentions.

This survey was conducted in mid-2007, so for the forecasts to be valid, it is assumed that filing intentions currently remain similar.

Some further results of the survey are presented in the Annexes of this report:

Annex II details comments received from respondents.

Annex IV discusses details of the main forecasting results, including sample sizes for the various comparisons.

Annex V shows forecasts for growth rates in filings to other patent offices by EPO clients.

Annex VI gives an analysis of economic factors identified in Sections C and D of the questionnaire.

Annex VII discusses the calculation of weights and gives details of the breakdown of the EPO applicant population 2006 and survey response rates in terms of numbers of applications per applicant.

Annex VIII describes the turnover of the EPO applicant population since 1999 and the calculation of correction factors for survey based filings forecasts.

Annex IX gives further details of the applicant and sample populations in the base year for the survey (2006).

10 Annex I: Questionnaire



APPR / GROUP
FA
LEITER PATENTABTL
ABTEILUNG
STRASSE

ORT
LAND

Questionnaire

for Applicant Panel Survey on Patent Filings

Please return to:
+49-89-99 600 599

Please respond only in respect of the company/company part mentioned to you over the phone by Synovate, e.g. your branch or subsidiary. If, however, this is not possible, we would welcome your responses in respect of whatever larger or smaller company part that you can speak for.

Please answer the whole questionnaire for the same company/company part.

A. Contact Details and Comments

Should the information given above on your company details be incorrect, please provide us with corrected information below:

Contact Name:	_____	Position:	_____
Phone Number:	_____	E-mail-Address:	_____
Organisation Name:	_____	Organisation Address:	_____

The data that you will provide are very valuable for EPO. May we ask for your consent for passing your data together with your details to EPO? Of course EPO will keep the data strictly confidential and will not use it for other purposes than internal forecasts. If you agree to a transmission of your data together with your details to EPO please sign below.

Signature: _____

A summary of the results of the survey will be published in early 2008 under <http://www.epo.org/patents/APS.html>. We will remind you of this if you could please give us your E-mail address under Section A of this questionnaire.

Comments on any matter concerning this questionnaire (please continue on a separate sheet if necessary):

«APPR» / GROUP / FA

B. Estimation of levels of patenting activity throughout the world for your company/ company part

Please give information on numbers of filings in the two tables below. In case you are unable to give actual figures, please indicate anticipated yearly growth rates as percentages (i.e. 2007 compared with 2006; 2008 compared with 2007; 2009 compared with 2008).

Please indicate the numbers of first filings (priority forming) **and subsequent filings** (claiming priority of an earlier application) with break downs by patent types and countries, that you filed in the last calendar year and that you expect to file in the present and future calendar years.

		Filed		Expected		Expected		Expected	
		2006		2007		2008		2009	
		First filings ¹	Subsequent filings	First filings ¹	Subsequent filings	First filings ¹	Subsequent filings	First filings ¹	Subsequent filings
European patent applications under the EPC (excluding PCT) ² (a)									
International applications under the PCT (International Phase) (b)									
National applications (excluding PCT and EPC) in	Germany (c)								
	United Kingdom (d)								
	France (e)								
	Japan (f)								
	United States ³ (g)								
	Other countries (h)								
Worldwide Total First Filings (i)									

¹ A first filing is a patent application that, according to the Paris Convention for the Protection of Industrial Property, confers a right of priority for a period of twelve months for the purpose of filing patent applications in other countries or systems, with respect to the same invention.

² Please exclude any multiple counting that is due to the retrospective filing of divisional applications.

³ Please include provisional filings under the columns for first filings.

Please indicate the numbers of your PCT applications which entered the regional/national phase at the listed offices during the last calendar year and which you expect to enter the regional/national phase in the present and future calendar years.

PCT applications entering the regional/national phase at	Entered 2006	Expected 2007	Expected 2008	Expected 2009
European Patent Office (EPO) (j)				
United States Patent and Trademark Office (USPTO) (k)				
Japan Patent Office (JPO) (l)				
German Patent and Trade Mark Office (DPMA) (m)				

If you have any comments on this part please put them on page 1.

C. Activities in total and in various sectors for your company/company part

We would like to know more information on your **R&D, patenting and business activities in 2006**. Please indicate...

(a) the total number of inventions in 2006 that led you to consider making patent applications: _____

(b) – generally speaking – the percentage of all your inventions that are actually patented: _____ %

(c) the approximate size of your total sales throughout the world in 2006

(specify currency): _____

(d) the approximate size of the total operating and capital expenditure for your company throughout the world in 2006

(specify currency): _____

We are also interested in classifying your activities in terms of the **Joint Cluster** organisational groupings used for examinations at the European Patent Office. Please complete the following table as far as you can, by indicating...

(e) ...which of the following you believe contain(s) the main area(s) of your business. Please tick appropriate box(es).	(f) ...the approximate size of your R&D budget 2006 (specify currency)	(g) ...the number of first patent filings that you actually made in 2006 throughout the world
☐ Audio, Video and Media		
☐ Biotechnology		
☐ Civil Engineering; Thermodynamics (including engines and pumps)		
☐ Computers		
☐ Electricity and Semiconductor Technology		
☐ Electronics		
☐ Handling and Processing		
☐ Human Necessities (including agriculture, medical products, printing)		
☐ Industrial Chemistry		
☐ Measuring and Optics		
☐ Polymers		
☐ Pure and Applied Organic Chemistry (including pharmaceuticals)		
☐ Telecommunications		
☐ Vehicles and General Technology (including transporting mechanisms, lighting)		
☐ Other area(s), please specify: _____		
Total		

If you have any comments on this part please put them on page 1.

D. Other issues

(a) During 2006, did you withdraw any of your applications under the EPC (excluding PCT) and/or PCT applications entering the regional phase at the European Patent Office? ☐ Yes ☐ No

(b) If 'Yes', please specify why you did so in terms of percentages of your withdrawals:

	0-20%	21-50%	51-80%	81-100%
not complying with formal requirements (deadlines, fees etc.)	☐	☐	☐	☐
discouraging search report written by the EPO	☐	☐	☐	☐
negative communications sent out by the EPO during substantive examination	☐	☐	☐	☐
reduction of the scope of the invention required by the EPO	☐	☐	☐	☐
disclosure of new prior art during the substantive examination of the file	☐	☐	☐	☐
the fading perceived economic importance of the invention after defensive publication of the application	☐	☐	☐	☐
Other reason, please specify: _____	☐	☐	☐	☐

E. Details of company/company part

(a) Please indicate the nature of the entity for which you have answered the above questions in Sections A to D of this questionnaire. Please cross all boxes that apply.

Type: Private enterprise/commercial sector... ☐	Persons employed: individual inventor ☐
Public sector:	1 – 9 ☐
- Government-performed R&D ☐	10 – 49 ☐
- Higher educational sector ☐	50 – 249 ☐
- Other public sector ☐	250 – 999 ☐
1 000 – 4 999	0
Other, ☐	5 000 – 9 999 ☐
please specify: _____	10 000 – 49 999 ☐
_____ 50 000 or more ☐	0

(b) Does your company belong to a group of companies? ☐ Yes ☐ No

(c) In what year was your company created? _____

F. Diffusion and use of patents

1. Licensing out activity of your company

1.1 What is the share, in your patent portfolio, of patents which are currently

licensed out	☐ 0-20%	☐ 20-40%	☐ 40-60%	☐ 60-80%	☐ 80-100%
--------------	-----------------------------	------------------------------	------------------------------	------------------------------	-------------------------------

1.2 What is the share, among patents licensed out, of those which are

licensed out to companies not affiliated with the same group as yours	☐ 0-20%	☐ 20-40%	☐ 40-60%	☐ 60-80%	☐ 80-100%
licensed out to partners located abroad	☐ 0-20%	☐ 20-40%	☐ 40-60%	☐ 60-80%	☐ 80-100%
cross-licensed	☐ 0-20%	☐ 20-40%	☐ 40-60%	☐ 60-80%	☐ 80-100%

Continued on next page

1.3 Evolution of your patent licensing activity with non affiliated partners

In 2006 as compared with 2003	Increased dramatically	Increased	Not changed	Decreased
Your total licensing revenue has	..	..	..	..
The total number of deals has	..	..	..	..

1.4 What is the share in total Intellectual Property licensing contracts involving the following?

(NB As one contract can involve several types of Intellectual Property, the total of your responses may exceed 100%).

Patents	☐ 0-20%	☐ 20-40%	☐ 40-60%	☐ 60-80%	☐ 80-100%
Trademarks	☐ 0-20%	☐ 20-40%	☐ 40-60%	☐ 60-80%	☐ 80-100%
Know how	☐ 0-20%	☐ 20-40%	☐ 40-60%	☐ 60-80%	☐ 80-100%
Copyright	☐ 0-20%	☐ 20-40%	☐ 40-60%	☐ 60-80%	☐ 80-100%

2. Motivations for licensing out:

What is the share of deals concluded in 2003-2006 obeying the following motivations
(as one deal can have several motivations the total of your responses could exceed 100%)?

	Share in total deals (%)
Earning revenue	
Entering into cross licensing deals	
Sharing technology with other companies ("open innovation")	
Establishing your technology as a de facto standard	
Outsourcing manufacturing	
Stopping perceived infringement of some of your patents	

3. Do you use the following mechanisms?

	Yes	No
Patent pools	☐	☐
Patent clearing houses	☐	☐
Patent auctions	☐	☐

4. Obstacles to licensing (out) patents:

4.1 Approximate share (%) of your patent portfolio that you would be willing

to license out but could not actually license:

%

4.2 What hampering factors have you been confronted with in your licensing activity?

	Not relevant	Weakly important	Moderately important	Very important
Identifying partner is difficult	..	..	..	..
Price offered is too low	..	..	..	..
Drafting and negotiating contracts is too complex/costly	..	..	..	..
Technology is not developed enough (lacking prototype etc.)	..	..	..	..

5. Financial uses of patents. How important are patents for you in the following operations:

	Not relevant	Weakly important	Moderately important	Very important
Raising capital, through venture capital	..	..	..	..
Raising capital, through private investors	..	..	..	..
Raising capital, through stock market	..	..	..	..
Raising capital, through securitization	..	..	..	..
Negotiating loans (collateral etc.)	..	..	..	..
Obtaining public subsidies	..	..	..	..

11 Annex II: Comments received from participating members of the applicant panel (selection)

The questionnaire required a high level of commitment from the respondents. Many respondents found the questionnaire very complicated and difficult to comprehend. Sometimes it was impossible to gather the information requested, or data collection was perceived as being time-consuming. As in previous years, all this resulted in a significant time lag between the initial contact and the response. In addition, a substantial number of follow-up calls were required to remind and encourage respondents to complete the questionnaire, and to assist respondents with explanations about the questions. If respondents expressed a need for more information about the survey, e.g. why the EPO requires information about R&D budgets, an explanation was developed to motivate respondents to fill in at least estimates (as long as no exact data were available).

In detail, applicants had the following problems when responding to the questionnaire:

11.1 Comments on Section A (contact details and general comments):

Some respondents did not have the data available, especially financial information. In addition, the following types of organisations had difficulties answering the questions:

- Universities/non-profit research institutes
- Large companies with several business units (difficulties in gathering the data)
- Small companies and start-ups (applies especially to the Smallest group)
- Companies with only a few patent applications/that do not regularly file patents (applies especially to the Smallest group)
- Companies that cooperate with external attorneys or with other companies

For these special cases, the questionnaire did not represent the patenting process adequately.

11.2 Comments on Section B (current and future filings):

• Overall uncertainty about the terminology and the data requested

Some respondents (particularly in the US and smaller applicants, as well as applicants who refer to an external attorney) needed further explanations about the kind of figures that should be entered in part B:

- How should country designations or validations be handled, and what distinguishes these from subsequent filings?
- How should design files be handled?
- What is the difference between first and subsequent filings?
- Where should divisional filings be included?
- What exactly should be included in the statistics?

• Difficulty in providing details about patent filings

- Data are not recorded in the required structure
- Data are available only for a larger/another part of the company than that requested
- Patent filings are handled by the parent company or an external attorney

- **Forecasts not available or only rough estimates available**
Some respondents provided only rough tendencies rather than exact figures. The following factors made filing forecasting difficult:
 - Restructuring and mergers
 - R&D projects variable/not yet defined
 - Difficult economic situation
 - Changing/developing IP strategy/policy
- **Difficulty in calculating the worldwide total of first filings**
Many respondents included subsequent filings in the calculation, or indicated a higher/lower sum than actually given, or gave different totals for 2006 in parts B and C (424 respondents gave an identical total of first filings in 2006 in parts B and C, 498 gave different totals, 44 did not enter a total in either B or C or both), or did not enter any total at all. In a few cases, the sums were rounded. Of the Smallest group, 111 gave identical totals, 94 different totals and 14 did not give any total.
- **Difficulty in providing data for the PCT national/regional phase**
For some applicants, this question was difficult to understand. Some provided figures that are implausible and too high compared to the figures provided for the PCT international phase in previous years. There may have been some confusion with PCT country designations or national procedures.
- **Uncertainty as to how to indicate growth rates**
In some cases, a growth index was provided (e.g. 110%) instead of a growth rate (e.g. +10%).

11.3 Comments on Section C (research and development activities):

- **Difficulty with the number of inventions where a patent application was considered – question a)**
 - It is not precisely clear which data is being requested
 - Percentage information given
- **Difficulty in understanding question b)**
 - Zero % was given although first filings in 2006 were indicated in B (i)
- **Difficulty in providing the size of sales, question c)**
 - Some organisations have no sales, e.g. research organisations, educational organisations, non-profit organisations – as well as individual inventors
 - Sales figures are not available or are confidential
 - Sales can be indicated only in a rough range
- **Difficulty in providing the size of operating and capital expenditure, question d)**
 - Some organisations have no expenditures, e.g. research organisations, educational organisations, non-profit organisations – as well as individual inventors
 - Figures are not available
 - Uncertainty about declaring operating *and* capital expenditure
- **Difficulty in allocating the respondent's company to one of the joint clusters – question e)**
 - The clusters are not suitable for public organisations or universities
 - The clusters are not well defined, the classification is not definite

- **No answer possible for question f)**
 - The company or organisation does not record the data according to the structure required for the survey
 - Another department is responsible for this information
 - The data are confidential
 - Filing decisions and budgets are distributed over the year and the whole R&D process
 - Each part of the company/organisation has its own budgets
 - There is no fixed R&D budget
 - Different ways to calculate given figure (e.g. including patent expenses)
 - It is too time-consuming to obtain the required figures
- **Difficulty in answering question g)**
 - The company or organisation does not record the data according to the structure required for the survey
 - Only total can be provided
 - Given total differs from total in B (i) 2006

11.4 Comments on Section D (other issues relating to withdrawals):

- **Difficulty in determining reasons for withdrawal of applications**
 - Uncertainty about percentage
 - Uncertainty about the term withdrawal compared to abandoning
 - Reasons are not available
 - Withdrawals controlled by subsidiaries

11.5 Comments on Section E (company details):

- **Difficulty in allocating respondent's company to one of the company types**
 - Some respondents from public companies were not sure how to classify their organisation
 - Some companies/organisations belong to more than one category, e.g. universities ticked both "public sector" and "educational institution"
- **Difficulty in providing information about persons employed**
 - The number of employees given covers only part of the whole company, e.g. only research/technology/administration department, employees in home country, permanent employees
 - Difficulty in providing the number of employees for the part of the company relevant to the study, e.g. numbers include the parent company or the entire group
- **Difficulty in providing information about founding year (e.g. in case of merger and acquisition)**

11.6 Part F of the questionnaire (company details) [EPC residents only]:

- **Difficulty in providing information about licensing**
 - Difficulty in answering for SMEs
 - Licensing not applicable
 - Licensing only within the company
 - Hardly any licensing activities (e.g. due to company policy)
 - Given reasons do not meet reasons of specific companies/organisations (e.g. universities)

12 Annex III: Plausibility checks and interpretation rules

To ensure that the answers given in the questionnaire were logical and consistent, a number of plausibility rules were set up:

- The worldwide total of first filings (line i of Section B) was compared with the sum of the first filings reported for Euro-direct/European patent applications under the EPC (excluding PCT) (line a), international applications under the PCT (international phase) (line b) and national applications (lines c, d, e, f, g and h)
- The numbers in any cell under subsequent filings should be comparable (say, not more than three times as high) to the number under worldwide total first filings (line i) for the previous year
- The numbers for PCT national/regional phase applications in any cell for 2008 and 2009 (lines j, k, l or m) should be comparable to (say, not more than three times as high as) the combined figures under PCT international phase first filings and subsequent filings (line b) in 2006 and 2007 respectively.
- Technical areas noted in the "others" line of Section C were allocated to one of the 14 joint clusters ex post, where possible

A set of rules was developed together with the researchers to ensure that the answers given to the questions were correctly transcribed and interpreted in the electronic database. In cases where percentage growth rates were given instead of real figures, a method was defined for converting these into equivalent filing figures on which the analyses could be based. Rules were given concerning the interpretation of zero, to ensure correct interpretation where zero is given either as a figure or as an indicator of no change compared to the base year. Due to problems in understanding question C (g), the number of first filings B (i) 2006 was checked if a zero was indicated in C (g).

13 Annex IV: Detailed forecasting results

The detailed results of the predictive analysis are shown below. For each forecast, the growth index is given as the composite index (CI) for the Biggest group or as the Q-index for the Random group. The number of cases that the forecast is based on and the estimated standard error of the forecast (Q-index only) are also shown.

Biggest group
No subsidiary breakdown
Composite indices

			Year					
			2007		2008		2009	
Filing type	Filing route	Res. bloc	Cases 07	Index 07	Cases 08	Index 08	Cases 09	Index 09
First	Euro-direct	Total	93	0.9572	74	1.0007	73	1.0345
	Euro-PCT-IP	Total	68	1.0571	63	1.0677	62	1.0844
Subsequent	Euro-direct	Total	137	0.9654	118	1.0053	117	1.0434
	Euro-PCT-IP	Total	171	1.0430	148	1.0865	143	1.0977

Table 52: Detailed forecasting results (no further breakdown) – Biggest group [Used in Table 16]

Biggest group
Breakdown by residence bloc
Composite indices

			Year					
			2007		2008		2009	
Filing type	Filing route	Res. bloc	Cases 07	Index 07	Cases 08	Index 08	Cases 09	Index 09
First	Euro-direct	EP	58	0.9168	44	0.9717	43	0.9944
		JA	14	0.9420	14	0.9630	14	0.9790
		OT	2	0.9572 *	2	1.0007 *	2	1.0345 *
		US	19	0.9322	14	0.8631	14	0.8991
First	Euro-PCT-IP	EP	25	1.0494	24	1.1465	24	1.1817
		JA	23	1.0687	22	1.0504	21	1.0454
		OT	4	1.0571 *	4	1.0677 *	4	1.0844 *
		US	16	1.1009	13	1.0794	13	1.1389
Subsequent	Euro-direct	EP	66	0.9953	56	1.0780	55	1.0854
		JA	45	0.9413	40	0.9661	40	1.0152
		OT	3	0.9654 *	3	1.0053 *	3	1.0434 *
		US	23	0.9686	19	0.9542	19	1.0450
Subsequent	Euro-PCT-IP	EP	79	1.0148	64	1.0753	61	1.1007
		JA	57	1.1023	53	1.1395	52	1.1601
		OT	2	1.0430 *	2	1.0865 *	2	1.0977 *
		US	33	0.9843	29	1.0228	28	0.9975

Table 53: Detailed forecasting results broken down by residence bloc – Biggest group [Used in Table 17]

Random group
No subsidiary breakdown
Q-Indices

			Year								
			2007			2008			2009		
Filing type	Filing route	Res. bloc	Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct	Total	198	0.9274	0.0542	184	1.0247	0.0503	173	1.0708	0.0566
First	Euro-PCT-IP	Total	157	1.1260	0.0340	153	1.1915	0.0335	145	1.2536	0.0394
Subsequent	Euro-direct	Total	289	0.9728	0.0297	266	1.0397	0.0318	258	1.0802	0.0340
Subsequent	Euro-PCT-IP	Total	356	1.0640	0.0242	336	1.1532	0.0226	319	1.1649	0.0264

Table 54: Detailed forecasting results (no further breakdown) – Random group [Used in Table 18]

Random & Smallest group
No subsidiary breakdown
Q-Indices

			Year								
			2007			2008			2009		
Filing type	Filing route	Res. bloc	Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct	Total	254	0.9171	0.0534	245	1.0108	0.0486	228	1.0564	0.0549
First	Euro-PCT-IP	Total	187	1.1163	0.0335	192	1.1806	0.0321	174	1.2392	0.0380
Subsequent	Euro-direct	Total	329	0.9691	0.0293	304	1.0357	0.0312	291	1.0718	0.0330
Subsequent	Euro-PCT-IP	Total	394	1.0633	0.0240	369	1.1530	0.0225	347	1.1673	0.0263

Table 55: Detailed forecasting results (no further breakdown) – Random & Smallest group [Used in Table 26]

Random group
Breakdown by residence bloc
Q-indices

			Year								
			2007			2008			2009		
Filing type	Filing route	Res. bloc	Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct	EP	135	1.0076	0.0506	124	1.1243	0.0768	116	1.1805	0.0885
		JA	19	0.9607	0.0469	19	0.9696	0.0545	18	1.0115	0.0620
		OT	7	1.0455	0.0450	8	1.1037	0.0591	6	1.1843	0.0787
		US	37	0.6995	0.2021	33	0.8085	0.1438	33	0.8352	0.1519
First	Euro-PCT-IP	EP	70	1.2309	0.0531	67	1.3047	0.0479	63	1.3895	0.0564
		JA	34	1.1124	0.0498	35	1.1228	0.0525	34	1.1488	0.0626
		OT	9	0.9594	0.0664	9	1.0073	0.0548	8	1.0193	0.0588
		US	44	1.0698	0.0479	42	1.2109	0.0719	40	1.3130	0.0918
Subsequent	Euro-direct	EP	150	1.0279	0.0522	137	1.0987	0.0527	130	1.1515	0.0608
		JA	75	0.9358	0.0334	70	1.0052	0.0391	70	1.0262	0.0380
		OT	9	1.0784	0.0918	8	1.0643	0.0934	8	1.0783	0.0974
		US	55	0.8947	0.0801	51	0.9546	0.0885	50	1.0190	0.0911
Subsequent	Euro-PCT-IP	EP	170	1.0532	0.0395	156	1.1788	0.0448	148	1.2136	0.0498
		JA	105	1.1571	0.0298	99	1.1812	0.0228	96	1.1925	0.0178
		OT	14	0.9780	0.1299	13	1.2426	0.0619	12	1.3254	0.0991
		US	67	0.9509	0.0500	68	1.0517	0.0483	63	1.0064	0.0806

Table 56: Detailed forecasting results broken down by residence bloc – Random group [Used in Table 19]

Random & Smallest group
Breakdown by residence bloc
Q-indices

			Year								
			2007			2008			2009		
Filing type	Filing route	Res. bloc	Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct	EP	191	0.9868	0.0469	185	1.0952	0.0714	171	1.1499	0.0829
		JA	19	0.9607	0.0469	19	0.9696	0.0545	18	1.0115	0.0620
		OT	7	1.0455	0.0450	8	1.1037	0.0591	6	1.1843	0.0787
		US	37	0.6995	0.2021	33	0.8085	0.1438	33	0.8352	0.1519
First	Euro-PCT-IP	EP	100	1.2021	0.0533	106	1.2701	0.0418	92	1.3461	0.0488
		JA	34	1.1124	0.0498	35	1.1228	0.0525	34	1.1488	0.0626
		OT	9	0.9594	0.0664	9	1.0073	0.0548	8	1.0193	0.0588
		US	44	1.0698	0.0479	42	1.2109	0.0719	40	1.3130	0.0918
Subsequent	Euro-direct	EP	190	1.0193	0.0508	175	1.0896	0.0506	163	1.1315	0.0571
		JA	75	0.9358	0.0334	70	1.0052	0.0391	70	1.0262	0.0380
		OT	9	1.0784	0.0918	8	1.0643	0.0934	8	1.0783	0.0974
		US	55	0.8947	0.0801	51	0.9546	0.0885	50	1.0190	0.0911
Subsequent	Euro-PCT-IP	EP	208	1.0517	0.0386	189	1.1783	0.0442	176	1.2198	0.0499
		JA	105	1.1571	0.0298	99	1.1812	0.0228	96	1.1925	0.0178
		OT	14	0.9780	0.1299	13	1.2426	0.0619	12	1.3254	0.0991
		US	67	0.9509	0.0500	68	1.0517	0.0483	63	1.0064	0.0806

Table 57: Detailed forecasting results broken down by residence bloc – Random & Smallest group [Used in Table 27]

Random group
No subsidiary breakdown
Q-Indices
Euro-direct and Euro-PCT-IP filings combined

			Year								
			2007			2008			2009		
Filing type	Filing route	Res. bloc	Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct+Euro-PCT-IP	Total	143	0.9704	0.0440	133	1.0209	0.0438	128	1.0556	0.0479
Subsequent	Euro-direct+Euro-PCT-IP	Total	296	1.0097	0.0199	272	1.0780	0.0212	265	1.1053	0.0229

Table 58: Detailed forecasting results – Random group, no breakdown, Euro-direct and PCT-IP filings combined [Used in Table 20]

Random & Smallest group
No subsidiary breakdown
Q-Indices
Euro-direct and Euro-PCT-IP filings combined

			Year								
			2007			2008			2009		
Filing type	Filing route	Res. bloc	Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct+Euro-PCT-IP	Total	167	0.9622	0.0434	158	1.0134	0.0430	151	1.0496	0.0471
Subsequent	Euro-direct+Euro-PCT-IP	Total	321	1.0107	0.0197	296	1.0789	0.0209	285	1.1060	0.0227

Table 59: Detailed forecasting results – Random & Smallest group, no breakdown, Euro-direct and PCT-IP filings combined [Used in Table 28]

Random group
Breakdown by residence bloc
Q-indices
Euro-direct and Euro-PCT-IP filings combined

			Year								
			2007			2008			2009		
			Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct+Euro-PCT-IP	EP	64	1.0463	0.0523	62	1.1013	0.0776	57	1.1318	0.0862
		JA	32	1.0526	0.0394	30	1.0582	0.0514	30	1.0854	0.0564
		OT	8	1.0203	0.0529	6	1.0346	0.0632	6	1.0877	0.0661
		US	39	0.7524	0.1439	35	0.8542	0.1219	35	0.8974	0.1328
Subsequent	Euro-direct+Euro-PCT-IP	EP	124	1.0521	0.0390	111	1.1171	0.0419	107	1.1432	0.0469
		JA	101	1.0382	0.0178	94	1.0913	0.0201	93	1.1225	0.0205
		OT	9	0.9906	0.1043	7	1.0787	0.0626	7	1.0642	0.0535
		US	62	0.8835	0.0596	60	0.9806	0.0586	58	1.0056	0.0628

Table 60: Detailed forecasting results – Random group broken down by residence bloc, Euro-direct and PCT-IP filings combined [Used in Table 21]

Random & Smallest group
Breakdown by residence bloc
Q-indices
Euro-direct and Euro-PCT-IP filings combined

			Year								
			2007			2008			2009		
			Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct+Euro-PCT-IP	EP	88	1.0222	0.0467	87	1.0809	0.0725	80	1.1147	0.0812
		JA	32	1.0526	0.0394	30	1.0582	0.0514	30	1.0854	0.0564
		OT	8	1.0203	0.0529	6	1.0346	0.0632	6	1.0877	0.0661
		US	39	0.7524	0.1439	35	0.8542	0.1219	35	0.8974	0.1328
Subsequent	Euro-direct+Euro-PCT-IP	EP	149	1.0546	0.0383	135	1.1191	0.0409	127	1.1449	0.0461
		JA	101	1.0382	0.0178	94	1.0913	0.0201	93	1.1225	0.0205
		OT	9	0.9906	0.1043	7	1.0787	0.0626	7	1.0642	0.0535
		US	62	0.8835	0.0596	60	0.9806	0.0586	58	1.0056	0.0628

Table 61: Detailed forecasting results – Random & Smallest group broken down by residence bloc, Euro-direct and PCT-IP filings combined [Used in Table 29]

Random group
No subsidiary breakdown (excluding companies with qualifying comments)
Q-indices

			Year								
			2007			2008			2009		
			Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct	Total	158	0.9024	0.0596	142	0.9918	0.0532	134	1.0315	0.0597
First	Euro-PCT-IP	Total	137	1.1239	0.0357	131	1.1821	0.0346	125	1.2305	0.0394
Subsequent	Euro-direct	Total	254	0.9663	0.0296	234	1.0240	0.0310	229	1.0621	0.0332
Subsequent	Euro-PCT-IP	Total	316	1.0657	0.0252	292	1.1537	0.0235	279	1.1619	0.0279

Table 62: Detailed forecasting results (no further breakdown), excluding companies with qualifying comments – Random group [Used in Table 24]

Random & Smallest group
No subsidiary breakdown (excluding companies with qualifying comments)
Q-indices

			Year								
			2007			2008			2009		
			Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct	Total	196	0.9002	0.0590	182	0.9835	0.0518	169	1.0257	0.0586
First	Euro-PCT-IP	Total	159	1.1179	0.0350	162	1.1743	0.0333	149	1.2194	0.0379
Subsequent	Euro-direct	Total	287	0.9622	0.0292	266	1.0245	0.0308	255	1.0587	0.0326
Subsequent	Euro-PCT-IP	Total	348	1.0654	0.0250	319	1.1535	0.0233	301	1.1629	0.0277

Table 63: Detailed forecasting results (no further breakdown), excluding companies with qualifying comments – Random & Smallest group [Used in Table 30]

Random group

Breakdown by residence bloc ("other" incorporated in EP; excluding companies with qualifying comments)

Q-indices

			Year								
			2007			2008			2009		
Filing type	Filing route	Res. bloc	Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct	EP/OT	106	0.9841	0.0483	94	1.0740	0.0700	87	1.1212	0.0815
		JA	18	0.9587	0.0479	18	0.9752	0.0565	17	1.0186	0.0645
		US	34	0.6939	0.2093	30	0.8123	0.1508	30	0.8403	0.1594
First	Euro-PCT-IP	EP/OT	67	1.1432	0.0567	63	1.1974	0.0451	59	1.2399	0.0475
		JA	30	1.1236	0.0540	31	1.1282	0.0568	30	1.1573	0.0685
		US	40	1.0833	0.0479	37	1.2234	0.0734	36	1.3041	0.0880
Subsequent	Euro-direct	EP/OT	136	1.0141	0.0484	125	1.0577	0.0441	121	1.1039	0.0512
		JA	69	0.9312	0.0345	64	1.0009	0.0406	64	1.0223	0.0394
		US	49	0.9180	0.0789	45	0.9797	0.0925	44	1.0368	0.0960
Subsequent	Euro-PCT-IP	EP/OT	156	1.0398	0.0386	140	1.1765	0.0446	134	1.2074	0.0506
		JA	98	1.1659	0.0309	91	1.1868	0.0236	88	1.2030	0.0181
		US	62	0.9582	0.0527	61	1.0570	0.0520	57	1.0010	0.0875

Table 64: Detailed forecasting results broken down by residence bloc, excluding companies with qualifying comments, "Other" incorporated in EPC – Random group [Used in Table 25]

Random & Smallest group

Breakdown by residence bloc ("other" incorporated in EP; excluding companies with qualifying comments)

Q-indices

			Year								
			2007			2008			2009		
Filing type	Filing route	Res. bloc	Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct	EP/OT	144	0.9796	0.0467	134	1.0579	0.0663	122	1.1096	0.0786
		JA	18	0.9587	0.0479	18	0.9752	0.0565	17	1.0186	0.0645
		US	34	0.6939	0.2093	30	0.8123	0.1508	30	0.8403	0.1594
First	Euro-PCT-IP	EP/OT	89	1.1306	0.0556	94	1.1810	0.0416	83	1.2176	0.0433
		JA	30	1.1236	0.0540	31	1.1282	0.0568	30	1.1573	0.0685
		US	40	1.0833	0.0479	37	1.2234	0.0734	36	1.3041	0.0880
Subsequent	Euro-direct	EP/OT	169	1.0050	0.0472	157	1.0589	0.0434	147	1.0965	0.0495
		JA	69	0.9312	0.0345	64	1.0009	0.0406	64	1.0223	0.0394
		US	49	0.9180	0.0789	45	0.9797	0.0925	44	1.0368	0.0960
Subsequent	Euro-PCT-IP	EP/OT	188	1.0392	0.0378	167	1.1762	0.0440	156	1.2102	0.0504
		JA	98	1.1659	0.0309	91	1.1868	0.0236	88	1.2030	0.0181
		US	62	0.9582	0.0527	61	1.0570	0.0520	57	1.0010	0.0875

Table 65: Detailed forecasting results broken down by residence bloc, excluding companies with qualifying comments, "Other" incorporated in EPC – Random & Smallest group [Used in Table 31]

Biggest group
Breakdown by EPO joint cluster
Composite indices

			Year					
			2007		2008		2009	
Filing type	Filing route	Cluster	Cases 07	Index 07	Cases 08	Index 08	Cases 09	Index 09
First	Euro-direct	Audio, Video & Media	8	1.0353	8	1.1121	8	1.1731
		Biotechnology	14	0.9804	10	0.9539	10	1.0097
		Civil Engineering & Thermodynamics	6	0.7876	4	1.0007 *	4	1.0345 *
		Computer	5	0.9572 *	3	1.0007 *	3	1.0345 *
		Electricity & Electrical Machines	18	0.8879	13	0.8691	13	0.8686
		Electronics	12	0.9816	10	0.9985	10	1.0333
		Handling and Processing	7	0.9545	6	0.9167	6	0.8472
		Human Necessities	13	0.8301	10	0.8185	10	0.8249
		Industrial Chemistry	14	1.0000	12	1.0739	11	1.1208
		Measuring, Optics	8	0.9638	7	0.9891	7	0.9891
		Polymers	11	1.0336	9	1.1949	8	1.2583
		Pure & Applied Organic Chemistry	12	1.0723	10	1.1765	10	1.2721
		Telecommunications	17	0.9650	15	0.9959	15	1.0356
		Vehicles & General Technology	17	0.8375	16	0.8330	16	0.8337
First	Euro-PCT-IP	Audio, Video & Media	6	1.0846	5	1.0677 *	4	1.0844 *
		Biotechnology	8	1.0942	7	1.2027	7	1.2703
		Civil Engineering & Thermodynamics	5	1.0571 *	5	1.0677 *	4	1.0844 *
		Computer	3	1.0571 *	2	1.0677 *	2	1.0844 *
		Electricity & Electrical Machines	15	1.0803	13	1.1202	12	1.1183
		Electronics	11	1.1140	10	1.0808	10	1.0926
		Handling and Processing	6	1.0519	6	1.2074	6	1.3185
		Human Necessities	7	1.2488	7	1.1798	7	1.1946
		Industrial Chemistry	6	1.1172	6	1.2414	6	1.2759
		Measuring, Optics	6	1.1404	5	1.0677 *	5	1.0844 *
		Polymers	5	1.0571 *	5	1.0677 *	5	1.0844 *
		Pure & Applied Organic Chemistry	8	1.1494	6	2.0000	6	2.2273
		Telecommunications	14	1.0959	13	1.0692	12	1.0710
		Vehicles & General Technology	18	1.1594	18	1.1794	17	1.2152
Subsequent	Euro-direct	Audio, Video & Media	9	1.0811	7	1.2060	8	1.2773
		Biotechnology	11	0.9003	10	0.9704	10	1.0164
		Civil Engineering & Thermodynamics	13	0.9730	8	0.9965	8	1.1272
		Computer	9	1.0184	7	0.9627	7	0.9741
		Electricity & Electrical Machines	31	0.9931	27	1.0382	26	1.0895
		Electronics	18	0.9343	16	0.9450	16	0.9692
		Handling and Processing	10	1.0468	9	1.1247	9	1.1616
		Human Necessities	19	0.8974	14	0.9615	14	1.0362
		Industrial Chemistry	15	0.8977	11	1.1571	10	1.1538
		Measuring, Optics	12	0.9713	10	1.0082	10	1.0264
		Polymers	12	1.0104	11	1.1340	11	1.1194
		Pure & Applied Organic Chemistry	11	1.0921	10	1.0931	10	1.1058
		Telecommunications	23	0.9461	20	0.9311	21	1.0204
		Vehicles & General Technology	31	0.9334	26	0.9787	27	1.0535
Subsequent	Euro-PCT-IP	Audio, Video & Media	10	1.1787	9	1.1475	8	1.0906
		Biotechnology	21	1.0843	17	1.0822	17	1.0194
		Civil Engineering & Thermodynamics	11	0.9179	6	0.9594	5	1.0977 *
		Computer	12	0.9795	10	1.0114	9	0.9743
		Electricity & Electrical Machines	37	1.0009	33	1.0195	31	0.9886
		Electronics	20	0.9310	18	0.9798	17	0.9684
		Handling and Processing	13	0.9094	12	0.9885	11	1.0271
		Human Necessities	27	0.9280	24	0.9793	24	0.9983
		Industrial Chemistry	23	1.1031	18	1.1429	17	1.1306
		Measuring, Optics	14	1.0829	12	1.0724	11	1.0333
		Polymers	19	1.2145	17	1.1782	16	1.1295
		Pure & Applied Organic Chemistry	25	1.1275	22	1.1292	22	1.0950
		Telecommunications	26	0.9941	23	1.0249	21	1.0106
		Vehicles & General Technology	32	0.9670	29	1.0513	27	1.0652

Table 66: Detailed forecasting results broken down by joint cluster – Biggest group [Used in Table 32 and Table 33]

Random group
Breakdown by EPO joint cluster
Q-indices

Filing type	Filing route	Cluster	Year								
			2007			2008			2009		
			Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct	Audio, Video & Media	11	0.8292	0.3432	12	1.0547	0.1467	12	1.0977	0.1613
		Biotechnology	36	0.9646	0.1646	30	1.0517	0.2116	28	1.1248	0.2380
		Civil Engineering & Thermodynamics	21	0.8771	0.1177	22	0.8710	0.1374	21	0.9001	0.1662
		Computer	8	1.1487	0.0586	8	1.2168	0.0624	8	1.2547	0.0725
		Electricity & Electrical Machines	29	0.8915	0.0959	25	0.8882	0.1175	24	0.9218	0.1334
		Electronics	23	0.9505	0.0977	23	0.9543	0.1249	20	0.9754	0.1416
		Handling and Processing	19	1.0242	0.1224	18	1.0577	0.1381	17	1.1054	0.1452
		Human Necessities	41	0.9344	0.1231	40	0.9654	0.1511	35	1.0321	0.1932
		Industrial Chemistry	26	1.2005	0.0932	24	1.3772	0.1017	22	1.5362	0.1224
		Measuring, Optics	13	0.9262	0.2231	14	0.9685	0.2208	14	0.9627	0.2226
		Polymers	23	1.1221	0.1087	23	1.3151	0.1104	20	1.5714	0.1544
		Pure & Applied Organic Chemistry	30	1.1026	0.0871	28	1.2583	0.0905	28	1.3902	0.1038
		Telecommunications	25	0.8140	0.1596	25	0.9093	0.1255	23	0.9556	0.1457
		Vehicles & General Technology	33	0.8929	0.0921	33	0.9023	0.1168	33	0.9215	0.1314
First	Euro-PCT-IP	Audio, Video & Media	10	1.1337	0.0741	9	1.1176	0.0682	7	1.1325	0.1088
		Biotechnology	27	0.9371	0.1810	26	1.3348	0.2004	24	1.4866	0.2303
		Civil Engineering & Thermodynamics	15	1.3456	0.0717	16	1.2860	0.0718	14	1.4033	0.1264
		Computer	6	1.1373	0.0978	5	1.1385 *	0.1179 *	5	1.1719 *	0.1370 *
		Electricity & Electrical Machines	22	1.2230	0.0751	20	1.2264	0.0526	19	1.2719	0.0676
		Electronics	22	1.2290	0.0801	20	1.2163	0.0749	18	1.2507	0.0879
		Handling and Processing	15	1.2754	0.1223	16	1.6171	0.2307	16	1.9616	0.2731
		Human Necessities	29	1.2966	0.0705	29	1.3265	0.0646	28	1.4204	0.1040
		Industrial Chemistry	17	1.4939	0.1631	17	1.9098	0.2352	16	2.3683	0.3007
		Measuring, Optics	8	1.2214	0.0986	7	1.3739	0.2240	6	1.4468	0.2666
		Polymers	14	1.1789	0.1429	14	1.3415	0.1613	13	1.5535	0.2285
		Pure & Applied Organic Chemistry	15	1.4523	0.1636	14	1.9413	0.2795	14	2.1836	0.3101
		Telecommunications	25	1.1879	0.0698	24	1.2000	0.0610	21	1.2177	0.0722
		Vehicles & General Technology	30	1.3233	0.0622	29	1.3693	0.0852	28	1.4672	0.1225
Subsequent	Euro-direct	Audio, Video & Media	15	0.9627	0.0894	13	1.1176	0.0839	14	1.2060	0.0867
		Biotechnology	30	0.9157	0.2311	29	0.9554	0.2326	29	1.0308	0.2368
		Civil Engineering & Thermodynamics	31	0.8448	0.0830	25	0.9381	0.0920	24	0.9978	0.1261
		Computer	17	0.9424	0.0717	15	1.0274	0.0574	14	1.0550	0.0823
		Electricity & Electrical Machines	53	0.9668	0.0741	47	1.0233	0.0820	46	1.0227	0.0740
		Electronics	43	0.9039	0.0684	40	0.9603	0.0624	38	0.9491	0.0583
		Handling and Processing	26	0.9055	0.1152	24	0.9703	0.0908	24	1.0663	0.0825
		Human Necessities	40	0.9392	0.1091	37	0.9766	0.0916	36	1.0317	0.1185
		Industrial Chemistry	32	0.9983	0.1167	27	1.1585	0.1379	26	1.0804	0.1051
		Measuring, Optics	21	0.8717	0.1530	17	0.9345	0.1713	17	0.9492	0.1715
		Polymers	28	0.9681	0.0854	29	1.0883	0.0795	29	1.1097	0.0864
		Pure & Applied Organic Chemistry	27	1.1390	0.1117	23	1.1104	0.1084	23	1.1939	0.1083
		Telecommunications	33	0.8683	0.0808	30	0.9009	0.0847	31	0.9465	0.0911
		Vehicles & General Technology	52	0.8829	0.0723	47	0.9494	0.0647	47	0.9922	0.0765
Subsequent	Euro-PCT-IP	Audio, Video & Media	16	1.3522	0.1771	16	1.3124	0.1524	15	1.1932	0.0772
		Biotechnology	55	1.0574	0.1589	50	1.1281	0.1363	47	1.1070	0.0993
		Civil Engineering & Thermodynamics	27	1.0646	0.1456	24	1.1339	0.1492	24	1.1787	0.1764
		Computer	22	0.9968	0.0588	20	1.0142	0.0732	18	0.9889	0.0845
		Electricity & Electrical Machines	62	1.0528	0.0808	58	1.0989	0.0719	56	1.0697	0.0570
		Electronics	46	0.9869	0.0521	44	1.0238	0.0521	42	1.0327	0.0613
		Handling and Processing	32	0.9578	0.0949	32	1.0608	0.0847	31	1.1209	0.0857
		Human Necessities	62	0.9870	0.0673	61	1.0810	0.0713	59	1.1243	0.0838
		Industrial Chemistry	49	1.1152	0.1446	43	1.1736	0.1247	42	1.1664	0.0918
		Measuring, Optics	31	1.1106	0.1582	30	1.1105	0.1485	29	1.0642	0.1057
		Polymers	46	1.1418	0.1440	46	1.1368	0.1203	43	1.1731	0.0847
		Pure & Applied Organic Chemistry	61	1.1009	0.1130	54	1.1953	0.0919	53	1.1890	0.0519
		Telecommunications	42	0.9759	0.0551	37	1.0243	0.0593	36	1.0341	0.0663
		Vehicles & General Technology	62	1.0577	0.0752	57	1.1442	0.0823	54	1.0929	0.1062

Table 67: Detailed forecasting results broken down by joint cluster – Random group [Used in Table 34 and Table 35]

Random & Smallest group
Breakdown by EPO joint cluster
Q-indices

Filing type	Filing route	Cluster	Year								
			2007			2008			2009		
			Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	Euro-direct	Audio, Video & Media	16	0.8258	0.3358	17	1.0550	0.1450	17	1.1005	0.1592
		Biotechnology	44	0.9327	0.1600	38	1.0001	0.2038	36	1.0810	0.2295
		Civil Engineering & Thermodynamics	34	0.8522	0.0922	37	0.8784	0.1363	32	0.8966	0.1594
		Computer	13	1.1267	0.0576	12	1.1921	0.0633	11	1.2259	0.0777
		Electricity & Electrical Machines	31	0.8902	0.0960	27	0.8806	0.1161	26	0.9124	0.1310
		Electronics	30	0.9442	0.0957	30	0.9484	0.1230	26	0.9675	0.1397
		Handling and Processing	23	0.9832	0.1131	25	1.0624	0.1319	22	1.1340	0.1502
		Human Necessities	53	0.9524	0.1303	55	0.9797	0.1553	50	1.0484	0.1952
		Industrial Chemistry	30	1.1880	0.0856	29	1.3544	0.0915	26	1.5093	0.1141
		Measuring, Optics	16	0.9276	0.2200	17	0.9677	0.2210	17	0.9575	0.2222
		Polymers	27	1.1249	0.1123	26	1.2980	0.1172	23	1.5627	0.1616
		Pure & Applied Organic Chemistry	34	1.0950	0.0856	32	1.2496	0.0887	32	1.3783	0.1063
		Telecommunications	28	0.8131	0.1597	28	0.9075	0.1259	26	0.9536	0.1454
		Vehicles & General Technology	40	0.8924	0.0906	41	0.9136	0.1220	40	0.9329	0.1373
First	Euro-PCT-IP	Audio, Video & Media	13	1.1391	0.0756	11	1.1212	0.0696	9	1.1252	0.1063
		Biotechnology	33	0.9257	0.1788	33	1.3215	0.1951	30	1.4697	0.2255
		Civil Engineering & Thermodynamics	19	1.3254	0.0715	24	1.2681	0.0662	20	1.3683	0.1088
		Computer	9	1.1309	0.0946	7	1.1378	0.1169	7	1.1600	0.1293
		Electricity & Electrical Machines	24	1.2222	0.0754	23	1.2279	0.0523	22	1.2634	0.0664
		Electronics	26	1.2254	0.0803	24	1.2143	0.0748	22	1.2447	0.0870
		Handling and Processing	18	1.2750	0.1269	22	1.6360	0.2243	19	1.9144	0.2818
		Human Necessities	36	1.3189	0.0609	37	1.3353	0.0653	35	1.4328	0.1067
		Industrial Chemistry	19	1.4921	0.1655	21	1.8860	0.2315	17	2.3438	0.3040
		Measuring, Optics	9	1.2230	0.0993	10	1.3653	0.2179	7	1.4272	0.2649
		Polymers	16	1.1715	0.1452	16	1.3270	0.1628	15	1.5164	0.2247
		Pure & Applied Organic Chemistry	18	1.4111	0.1580	16	1.8901	0.2786	16	2.1096	0.3142
		Telecommunications	27	1.1841	0.0705	27	1.1963	0.0612	23	1.2132	0.0722
		Vehicles & General Technology	35	1.3331	0.0613	35	1.3806	0.0871	33	1.4657	0.1228
Subsequent	Euro-direct	Audio, Video & Media	19	0.9598	0.0880	16	1.0946	0.0788	17	1.1766	0.0802
		Biotechnology	33	0.9125	0.2285	31	0.9624	0.2292	31	1.0388	0.2334
		Civil Engineering & Thermodynamics	46	0.8553	0.0805	37	0.9438	0.0932	35	1.0072	0.1258
		Computer	21	0.9408	0.0715	18	1.0145	0.0472	17	1.0236	0.0565
		Electricity & Electrical Machines	57	0.9680	0.0731	51	1.0270	0.0812	50	1.0255	0.0730
		Electronics	50	0.9037	0.0678	45	0.9711	0.0648	43	0.9626	0.0616
		Handling and Processing	33	0.9069	0.1093	32	0.9733	0.0840	30	1.0713	0.0776
		Human Necessities	48	0.9361	0.1064	45	0.9903	0.0960	43	1.0358	0.1183
		Industrial Chemistry	35	1.0045	0.1159	29	1.1779	0.1358	28	1.1037	0.1015
		Measuring, Optics	23	0.8723	0.1513	18	0.9349	0.1701	18	0.9495	0.1703
		Polymers	32	0.9627	0.0826	33	1.0983	0.0737	33	1.1153	0.0780
		Pure & Applied Organic Chemistry	30	1.1348	0.1094	25	1.1111	0.1066	25	1.1987	0.1065
		Telecommunications	36	0.8690	0.0806	32	0.8958	0.0841	33	0.9391	0.0898
		Vehicles & General Technology	60	0.8771	0.0710	54	0.9430	0.0630	53	0.9882	0.0756
Subsequent	Euro-PCT-IP	Audio, Video & Media	19	1.3544	0.1743	18	1.3159	0.1506	17	1.2136	0.0728
		Biotechnology	59	1.0576	0.1600	57	1.1408	0.1335	54	1.1173	0.0965
		Civil Engineering & Thermodynamics	39	1.0645	0.1400	34	1.1447	0.1494	33	1.1912	0.1778
		Computer	23	1.0045	0.0582	22	1.0246	0.0715	20	0.9964	0.0818
		Electricity & Electrical Machines	65	1.0539	0.0809	60	1.1012	0.0722	58	1.0714	0.0571
		Electronics	50	0.9840	0.0520	48	1.0399	0.0537	46	1.0490	0.0638
		Handling and Processing	39	0.9498	0.0901	37	1.0739	0.0792	35	1.1335	0.0795
		Human Necessities	71	0.9992	0.0681	70	1.0963	0.0730	65	1.1437	0.0867
		Industrial Chemistry	52	1.1111	0.1487	44	1.1993	0.1235	44	1.1828	0.0884
		Measuring, Optics	34	1.1050	0.1580	32	1.1224	0.1493	31	1.0689	0.1051
		Polymers	48	1.1604	0.1436	47	1.1691	0.1161	44	1.2127	0.0750
		Pure & Applied Organic Chemistry	65	1.1045	0.1129	58	1.2061	0.0901	56	1.1941	0.0491
		Telecommunications	46	0.9715	0.0544	39	1.0215	0.0588	39	1.0322	0.0658
		Vehicles & General Technology	69	1.0498	0.0717	61	1.1502	0.0838	57	1.0980	0.1075

Table 68: Detailed forecasting results broken down by joint cluster – Random & Smallest group
[used in Table 36 and Table 37]

Biggest group
Breakdown by residence bloc
Composite indices

			Year					
			2007		2008		2009	
Patent office	Filing route	Res. bloc	Cases 07	Index 07	Cases 08	Index 08	Cases 09	Index 09
EPO	Euro-PCT-RP	EP	78	0.9797	66	1.0522	61	1.0848
		JA	54	1.1119	51	1.1520	51	1.1892
		OT	3	1.0655 *	3	1.1403 *	3	1.1536 *
		US	30	1.1554	29	1.2709	28	1.2070
EPO	Euro-PCT-RP	Total	165	1.0655	149	1.1403	143	1.1536

Table 69: Detailed forecasting results for PCT applications entering the regional phase at the EPO – Biggest group [used in Table 47 and Table 48]

Random & Smallest group
Breakdown by residence bloc
Q-indices

			Year								
			2007			2008			2009		
Patent Office	Filing route	Res. bloc	Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
EPO	Euro-PCT-RP	EP	261	1.0010	0.0361	248	1.1000	0.0409	236	1.1512	0.0469
		JA	103	1.1137	0.0311	97	1.1594	0.0372	93	1.1818	0.0392
		OT	23	1.1070	0.0610	23	1.1046	0.0856	21	1.1813	0.0775
		US	85	1.2209	0.1382	86	1.3559	0.1618	79	1.4057	0.1706
EPO	Euro-PCT-RP	Total	472	1.0845	0.0345	454	1.1692	0.0413	429	1.2114	0.0436

Table 70: Detailed forecasting results for PCT applications entering the regional phase at the EPO – Random & Smallest group [used in Table 49 and Table 50]

Random & Smallest group
Breakdown by EPO Joint Cluster
Q-indices

			Year								
Patent office	Filing route	Cluster	2007			2008			2009		
			Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
EPO	Euro-PCT-RP	Audio, Video & Media	27	1.6062	0.3992	24	1.8070	0.5214	22	1.7910	0.5425
		Biotechnology	90	0.9929	0.0956	84	1.1396	0.1162	80	1.1411	0.1056
		Civil Engineering & Thermodynamics	54	0.9908	0.1233	48	1.0264	0.1319	48	1.0677	0.1582
		Computer	25	1.2147	0.2328	24	1.0459	0.1713	23	1.0469	0.1804
		Electricity & Electrical Machines	63	1.0895	0.1276	62	1.0816	0.1163	60	1.1040	0.1170
		Electronics	52	1.0053	0.1277	49	0.9895	0.0926	47	0.9999	0.0990
		Handling and Processing	47	1.3955	0.1460	47	1.5166	0.1458	44	1.5993	0.1508
		Human Necessities	101	0.9962	0.0840	96	1.0700	0.0941	95	1.1397	0.1187
		Industrial Chemistry	58	1.2195	0.1092	51	1.2431	0.1435	50	1.2689	0.1292
		Measuring, Optics	36	1.1284	0.1982	34	1.0268	0.1784	34	1.0070	0.1501
		Polymers	52	1.2330	0.1088	50	1.2786	0.1183	48	1.2785	0.1015
		Pure & Applied Organic Chemistry	73	1.1397	0.1119	72	1.1594	0.0966	67	1.2361	0.0794
		Telecommunications	52	1.1496	0.2472	52	1.1757	0.2855	52	1.2032	0.2888
		Vehicles & General Technology	79	1.0121	0.0970	76	1.1069	0.1124	71	1.1599	0.1344

Table 71: Detailed forecasting results for PCT applications entering the regional phase at the EPO broken down by joint cluster – Random & Smallest group [used in Table 51]

14 Annex V: Forecasts for applications at other patent offices (national applications and PCT national phase applications).

Intentions regarding future patent filings at national offices were obtained from questions (c) to (i) and (k) to (m) in **Section B** of the questionnaire (**Annex I**).

Forecasts based on the Random group for PCT national phase applications at USPTO, JPO, and DPMA (German Patent Office) are displayed in **Table 72** to **Table 74**. National applications by country based on the Random group are presented in **Table 75** and **Table 76**. The tables are limited to calculating growth indices as up-to-date filings numbers are not generally available for the base year from all the offices concerned.

Forecasts based on the Smallest group only for PCT national phase applications at USPTO, JPO, and DPMA (German Patent Office) are displayed in **Table 77** to **Table 79**. National applications by country based on the Smallest group are presented in **Table 80**. The tables are limited to calculating growth indices as up-to-date filings numbers are not generally available for the base year from all the offices concerned.

Random group
Breakdown by residence bloc
Q-indices

			Year								
			2007			2008			2009		
Patent Office	Filing route	Res. bloc	Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
USPTO	PCT National	EP	166	0.9965	0.0294	154	1.0863	0.0377	147	1.1074	0.0389
		JA	112	1.0753	0.0515	105	1.1285	0.0637	101	1.0922	0.0795
		OT	22	1.2171	0.0977	20	1.2056	0.1517	19	1.3623	0.1293
		US	59	1.0873	0.1144	54	1.3201	0.0970	50	1.4486	0.0975
USPTO	PCT National	Total	359	1.0495	0.0308	333	1.1417	0.0358	317	1.1563	0.0418

Table 72: Detailed forecasting results for PCT applications entering the national phase at USPTO – Random group

Random group
Breakdown by residence bloc
Q-indices

			Year								
			2007			2008			2009		
Patent Office	Filing route	Res. bloc	Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
JPO	PCT National	EP	130	0.9844	0.0485	119	1.0421	0.0703	113	1.0420	0.0743
		JA	94	1.1721	0.0502	91	1.2146	0.0490	87	1.2010	0.0500
		OT	15	1.3243	0.1195	13	1.5085	0.2402	13	1.7614	0.2571
		US	63	1.3430	0.1864	61	1.4805	0.2302	57	1.5233	0.2412
JPO	PCT National	Total	302	1.1288	0.0492	284	1.1999	0.0625	270	1.2073	0.0651

Table 73: Detailed forecasting results for PCT applications entering the national phase at JPO – Random group

Random group
Breakdown by residence bloc
Q-indices

Patent Office			Year								
			2007			2008			2009		
			Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
DPMA	PCT National	EP	51	1.1438	0.0599	47	1.0786	0.0659	46	1.0965	0.0748
		JA	29	1.2265	0.0888	28	1.2664	0.0783	26	1.2844	0.0862
		OT	2	1.0276	0.0149	3	1.0200	0.0134	3	1.1815	0.1133
		US	21	1.1897	0.2623	20	1.2192	0.2855	19	1.2440	0.2954
DPMA	PCT National	Total	103	1.1802	0.0584	98	1.1660	0.0668	94	1.1867	0.0718

Table 74: Detailed forecasting results for PCT applications entering the national phase at DPMA – Random group

Random Group
No breakdown
Q Indices

Filings type				Year								
				2007			2008			2009		
				Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	National	Germany (c)	Total	136	1.0048	0.0309	123	1.0501	0.0427	118	1.0445	0.0444
		United Kingdom (d)	Total	64	0.9089	0.1685	54	0.9039	0.1978	52	0.9067	0.2044
		France (e)	Total	43	1.2123	0.0943	41	1.2243	0.1076	40	1.2301	0.1098
		Japan (f)	Total	162	1.0427	0.0952	156	1.1600	0.0994	155	1.1981	0.1242
		United States (g)	Total	230	1.0226	0.0299	210	1.0941	0.0338	205	1.1287	0.0370
		Other Countries (h)	Total	115	1.0533	0.0872	104	1.2132	0.1046	104	1.2969	0.1268
		Worldwide total (i)	Total	556	1.0186	0.0147	523	1.0713	0.0176	496	1.1004	0.0212
Subsequent	National	Germany (c)	Total	83	1.0419	0.0735	79	1.0415	0.1094	76	1.0809	0.1190
		United Kingdom (d)	Total	63	0.9059	0.1104	59	1.0846	0.0817	56	1.1087	0.0967
		France (e)	Total	50	1.1040	0.0810	48	1.2325	0.0531	45	1.2584	0.0551
		Japan (f)	Total	146	0.9816	0.0700	142	1.0076	0.0794	139	1.0153	0.0813
		United States (g)	Total	254	0.9806	0.0324	231	1.0703	0.0409	227	1.1171	0.0486
		Other Countries (h)	Total	220	0.9037	0.0411	198	1.0118	0.0484	192	1.0329	0.0598

Table 75: Detailed forecasting results for national applications (excluding PCT), no breakdown – Random group

Random Group
Breakdown by residence bloc
Q Indices

				Year								
				2007			2008			2009		
Filings type	Filing route	Nation	Res. bloc	Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	National	Germany (c)	EP	112	1.0035	0.0357	100	1.0514	0.0489	95	1.0430	0.0509
			JA	7	1.0238	0.0413	6	1.1233	0.1313	6	1.1329	0.1341
			OT	0	1.0048 *	0.0309 *	0	1.0501 *	0.0427 *	0	1.0445 *	0.0444 *
			US	17	0.9991	0.0958	17	1.0103	0.1060	17	1.0158	0.1050
		United Kingdom (d)	EP	37	0.7389	0.2277	31	0.6910	0.2055	30	0.6744	0.1991
			JA	5	0.9089 *	0.1685 *	4	0.9039 *	0.1978 *	4	0.9067 *	0.2044 *
			OT	3	0.9089 *	0.1685 *	3	0.9039 *	0.1978 *	2	0.9067 *	0.2044 *
			US	19	1.1114	0.1493	16	1.2536	0.1900	16	1.3109	0.1976
		France (e)	EP	33	1.1945	0.1091	31	1.2070	0.1245	30	1.2133	0.1272
			JA	4	1.2123 *	0.0943 *	4	1.2243 *	0.1076 *	4	1.2301 *	0.1098 *
			OT	0	1.2123 *	0.0943 *	0	1.2243 *	0.1076 *	0	1.2301 *	0.1098 *
			US	6	1.4353	0.2240	6	1.2244	0.1201	6	1.2244	0.1201
		Japan (f)	EP	11	1.6281	0.2677	12	1.9292	0.3065	12	2.2033	0.3824
			JA	123	1.0321	0.0141	116	1.0580	0.0251	115	1.0602	0.0361
			OT	3	1.0427 *	0.0952 *	2	1.1600 *	0.0994 *	2	1.1981 *	0.1242 *
			US	25	0.6493	0.3227	26	0.9373	0.1304	26	0.9561	0.1354
		United States (g)	EP	75	0.9957	0.0509	65	1.1011	0.0559	64	1.1231	0.0604
			JA	39	1.1282	0.0658	37	1.1861	0.0876	38	1.2235	0.0895
			OT	18	1.0141	0.1108	17	1.0070	0.1107	15	1.0390	0.1195
			US	98	0.9886	0.0417	91	1.0549	0.0449	88	1.0957	0.0506
		Other Countries (h)	EP	44	1.1571	0.1152	40	1.3768	0.2061	41	1.4696	0.2548
			JA	25	1.2788	0.0728	24	1.2822	0.0834	24	1.3481	0.0801
			OT	15	0.7229	0.1650	11	0.7075	0.2042	10	0.7619	0.2383
			US	31	0.8354	0.2161	29	1.0499	0.1348	29	1.1292	0.1527
		Worldwide total (i)	EP	284	1.0519	0.0250	265	1.1288	0.0305	250	1.1585	0.0348
			JA	130	1.0325	0.0178	123	1.0519	0.0284	122	1.0486	0.0351
			OT	28	0.9188	0.0706	27	0.9492	0.0575	23	0.9845	0.0621
			US	114	0.9601	0.0403	108	1.0239	0.0407	101	1.0981	0.0468
Subsequent	National	Germany (c)	EP	28	0.9628	0.1509	26	0.9229	0.2243	23	0.9781	0.2653
			JA	35	1.1218	0.0563	33	1.1347	0.0625	33	1.1544	0.0623
			OT	3	1.0419 *	0.0735 *	3	1.0415 *	0.1094 *	3	1.0809 *	0.1190 *
			US	17	1.0085	0.1136	17	1.0892	0.1000	17	1.1099	0.0990
		United Kingdom (d)	EP	23	0.9247	0.0946	22	1.0307	0.1562	20	1.0690	0.1891
			JA	22	0.8564	0.2423	21	1.1534	0.0663	20	1.1490	0.0778
			OT	3	0.9059 *	0.1104 *	3	1.0846 *	0.0817 *	3	1.1087 *	0.0967 *
			US	15	0.9351	0.1511	13	1.0230	0.1733	13	1.0540	0.1778
		France (e)	EP	23	1.2182	0.1053	22	1.3561	0.0502	20	1.3660	0.0495
			JA	16	0.9864	0.1095	15	1.1225	0.0874	14	1.1133	0.1074
			OT	3	1.1040 *	0.0810 *	3	1.2325 *	0.0531 *	3	1.2584 *	0.0551 *
			US	8	1.1719	0.1391	8	1.2390	0.1505	8	1.2650	0.1508
		Japan (f)	EP	55	0.9214	0.1314	55	0.9841	0.1619	52	0.9946	0.1707
			JA	58	1.1329	0.0616	56	1.1315	0.0638	56	1.1320	0.0636
			OT	4	0.9816 *	0.0700 *	4	1.0076 *	0.0794 *	4	1.0153 *	0.0813 *
			US	29	0.8592	0.1156	27	0.8588	0.1283	27	0.8620	0.1240
		United States (g)	EP	105	1.0027	0.0599	98	1.1415	0.0620	95	1.2101	0.0678
			JA	81	0.9839	0.0324	73	1.0255	0.0519	73	1.0266	0.0710
			OT	10	1.0572	0.1079	8	1.1619	0.1836	7	1.4602	0.1215
			US	58	0.9261	0.0926	52	1.0172	0.1209	52	1.0878	0.1291
		Other Countries (h)	EP	83	0.8782	0.0898	80	1.0116	0.0966	76	1.0856	0.1172
			JA	85	0.9943	0.0337	75	1.0370	0.0540	74	1.0636	0.0727
			OT	7	0.7007	0.2617	4	1.0118 *	0.0484 *	4	1.0329 *	0.0598 *
			US	45	0.7858	0.1074	39	0.9522	0.1271	38	0.8735	0.1730

Table 76: Detailed forecasting results for national applications (excluding PCT), broken down by residence bloc – Random group

Smallest group
Breakdown by residence bloc
Q-indices

			Year								
			2007			2008			2009		
Patent Office	Filing route	Res. bloc	Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
USPTO	PCT National	EP	36	0.8351	0.0672	33	0.8733	0.0767	31	0.9924	0.0829

Table 77: Detailed forecasting results for PCT applications entering the national phase at USPTO – Smallest group

Smallest group
Breakdown by residence bloc
Q-indices

			Year								
			2007			2008			2009		
			Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
Patent Office	Filing route	Res. bloc									
JPO	PCT National	EP	20	0.9257	0.1158	20	0.9768	0.1144	21	1.1122	0.1340

Table 78: Detailed forecasting results for PCT applications entering the national phase at JPO – Smallest group

Smallest group
Breakdown by residence bloc
Q-indices

			Year								
			2007			2008			2009		
			Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
Patent Office	Filing route	Res. bloc									
DPMA	PCT National	EP	17	1.0914	0.1355	18	1.1208	0.1098	16	1.1652	0.1175

Table 79: Detailed forecasting results for PCT applications entering the national phase at DPMA – Smallest group

Smallest Group
No breakdown
Q Indices

				Year								
				2007			2008			2009		
				Cases 07	Q-index 07	S.E. 07	Cases 08	Q-index 08	S.E. 08	Cases 09	Q-index 09	S.E. 09
First	National	Germany (c)	Total	32	0.9668	0.0834	29	1.1352	0.0897	25	1.1651	0.0935
		United Kingdom (d)	Total	8	1.0640	0.1971	8	1.2192	0.1966	9	1.2057	0.1778
		France (e)	Total	4	0.9608	0.2116	4	0.8447	0.1474	4	0.8447	0.1474
		Japan (f)	Total	3	1.4888	0.1694	3	1.2532	0.1864	3	1.2532	0.1864
		United States (g)	Total	13	0.9085	0.1547	10	1.0471	0.1455	10	1.0667	0.1505
		Other Countries (h)	Total	16	0.7664	0.1223	17	0.8798	0.1377	18	0.8809	0.1615
		Worldwide total (i)	Total	116	0.9321	0.0605	117	1.0812	0.0583	102	1.2074	0.0617
Subsequent	National	Germany (c)	Total	4	0.9712	0.1223	3	0.7916	0.1897	2	0.7028	0.2450
		United Kingdom (d)	Total	2	0.5759	0.1017	2	0.7071	0.2451	1	0.5000	0.0000
		France (e)	Total	2	0.8194	0.1433	2	0.7071	0.2451	1	0.5000	0.0000
		Japan (f)	Total	9	0.8840	0.1062	7	0.9008	0.1679	7	0.7964	0.1657
		United States (g)	Total	14	0.7943	0.1085	13	0.9792	0.1263	12	1.0305	0.1324
		Other Countries (h)	Total	13	1.1091	0.0980	9	0.9569	0.1060	7	1.0998	0.1613

Table 80: Detailed forecasting results for national applications (excluding PCT), no breakdown – Smallest group

15 Annex VI: Analysis of R&D budgets and withdrawal behaviour

In **Section C** of the questionnaire, applicants were asked to provide more detailed information about their R&D budgets and the numbers of first patent filings in 2006 throughout the world, both split by joint cluster. The structure of this section of the questionnaire for the 2007 applicant panel survey was changed slightly from the one in 2006. Specifically a previous question on the number of researchers was dropped while a question on total operating and capital expenditure was added.

For the questions on R&D budget and sales, currencies had to be specified by the respondents. Therefore, before analysing Section C, the numbers given for R&D budget and sales were recalculated to EUR. Interbank exchange rates current as of February 6, 2008, were applied to the responses to those questions.

Summary results for each sample grouping are shown in **Table 81** and summary results for the EPC residence bloc for each sample grouping are shown in **Table 82**.

Detailed tables are shown once in unweighted versions for the Random group and the Smallest group in isolation and again for the Random & Smallest group applying structural weights. Each set of tables is shown once broken down by joint cluster and once by residence bloc.

For the analyses broken down by joint cluster, **Table 83** and **Table 84** contain the unweighted analyses for the Random group, **Table 85** and **Table 86** contain the unweighted analyses for the Smallest group and **Table 87** and **Table 88** contain the weighted results of the Random & Smallest group.

Ten different indicators are reported for the results broken down by joint cluster. Three of these are directly taken from the questionnaire, namely the total number of inventions considered for patent application, the proportion of inventions patented, and the number of first patent filings. Four indicators are company specific ratios averaged for all companies filing in a specific joint cluster. These indicators are: Total sales by first patent filing, R&D budget by first patent filing, Total operating and capital expenditures by first patent filing and first patent filings by number of inventions. The remaining three indicators are ratios derived by apportioning company activities to the specific joint cluster through the proportion of first filings in said joint cluster. These ratios are: Total sales in joint cluster, Approximate total operating and capital expenditures in joint cluster and R&D budget in joint cluster.

For the analyses broken down by residence bloc, **Table 89** contains the unweighted analyses for the Random & Smallest group and **Table 90** contains the weighted results of the Random & Smallest group.

Again, ten indicators are reported for the results broken down by residence bloc. The total number of inventions considered for patent application, the proportion of inventions patented, the number of first patent filings, approximate total sales, approximate total operating and capital expenditures and the approximate R&D budget are taken directly from the questionnaire. The remaining four ratios are company specific ratios, namely: Total sales by first patent filing, R&D budget by first patent filing, approximate total operating and capital expenditures by first patent filing and first patent filings by number of inventions.

Comparability to previous years' numbers is somewhat limited for two reasons: First and as in previous years, the usage of structural weights produces very large weight spans resulting in highly variable results. Second, the ratios reported this year deviate from the ratios reported last year to correctly apportion monetary amounts and activities to specific joint clusters. Finally, last

year these economic analyses were made after exclusion of some outliers while this year all data have been used.

This year, a **Section D** was added to the questionnaire asking about withdrawal behaviour and motivations for withdrawals. Answers given by applicants on that section correspond to the portfolio level rather than the patent level, while their responses in the second part are not mutually exclusive. Therefore, when interpreting the results of the survey we are focusing on broad average tendencies.

As for the previous analyses in this section, results are reported for both joint cluster and residence bloc breakdowns.

For the joint cluster breakdown, **Table 91** and **Table 92** contain the unweighted results of the Random group, **Table 93** and **Table 94** contain the unweighted results of the Smallest group and **Table 95** and **Table 96** contain the weighted results of the Random & Smallest group.

For the residence bloc breakdown, **Table 97** contains the unweighted results of the Random & Smallest group and **Table 98** contains the weighted results of the Random & Smallest group.

By sample group

Joint Cluster	Statistic	Total number of inventions considered for patent application	Proportion of inventions patented throughout the world [%]	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Approximate total operating and capital expenditures by first patent filing [EUR per first filing]	Number of first patent filings throughout the world in 2006		Approximate total sales throughout the world in 2006 [EUR]	Approximate total operating and capital expenditures in 2006 [EUR]	Approximate R&D budget in 2006 [EUR]	First patent filings by number of inventions
Biggest Unweighted	N	132	134	90	25	33	107		128	47	31	88
	MIN	13	10	10 228	28 818	16 851	11		1 300 000	2 291 669	3 716 220	22%
	MAX	10 000	100	115 492 958	12 680 000	70 000 000	5 840		69 740 000 000	23 929 782 100	4 135 983 000	615%
	MEAN	1 219	61	21 657 370	1 593 636	15 340 817	699		9 114 861 872	4 841 857 576	720 501 842	84%
	MEDIAN	397	60	14 010 971	343 915	6 647 353	229		4 012 316 000	2 853 000 000	253 600 000	78%
SE	181	2	2 607 001	585 631	3 197 758	112		1 162 030 850	914 381 536	184 532 260	0.07	
Random Unweighted	N	470	464	287	92	162	405		391	204	105	351
	MIN	1	0	2	138	2	1		7 376	6 948	20 000	2%
	MAX	10 000	100	3 539 257 143	27 799 230	3 008 368 571	5 840		100 000 000 000	305 113 500 000	4 135 983 000	615%
	MEAN	393	56	84 660 695	1 697 614	80 504 358	215		4 435 652 619	3 055 768 946	255 713 527	83%
	MEDIAN	30	54	11 595 887	341 634	3 839 984	19		619 370 000	51 320 179	12 387 400	75%
SE	57	1	22 873 618	405 677	31 827 341	34		551 592 135	1 515 337 870	67 857 657	0.03	
Smallest Unweighted	N	146	158	62	22	31	119		98	44	30	99
	MIN	1	0	5 000	5 000	1 300	1		5 000	1 300	5 000	5%
	MAX	73	100	222 222 222	4 000 000	42 727 273	340		2 000 000 000	470 000 000	17 364 000	300%
	MEAN	7	50	22 752 269	641 167	6 822 734	7		109 484 465	28 366 003	1 925 786	72%
	MEDIAN	4	50	10 000 000	187 500	2 058 333	2		12 250 000	3 950 000	275 000	63%
SE	1	2	4 652 353	202 203	1 905 049	3		31 481 631	11 504 004	656 050	0.05	
Random & Smallest Weighted	N	616	622	349	114	193	524		489	248	135	450
	MIN	1	0	2	138	2	1		5 000	1 300	5 000	2%
	MAX	10 000	100	3 539 257 143	27 799 230	3 008 368 571	5 840		100 000 000 000	305 113 500 000	4 135 983 000	615%
	MEAN	21	51	124 227 129	2 586 148	106 662 904	8		535 856 163	294 106 865	6 800 675	96%
	MEDIAN	4	50	2 260 100	339 015	678 030	3		6 780 300	1 268 000	678 030	80%
SE	5	1	32 105 825	665 069	37 721 613	3		116 551 817	99 934 571	2 477 640	0.06	

Random group
Unweighted

Joint Cluster	Statistic	Total number of inventions considered for patent application in cluster	Proportion of inventions patented throughout the world [%]	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Approximate total operating and capital expenditures by first patent filing [EUR per first filing]	Number of first patent filings throughout the world in 2006
Audio, Video & Media	N	10	23	8	5	5	13
	MIN	1	10	3 531 380	69 585	7 548	1
	MAX	1 470	98	16 428 571	500 000	6 647 353	1 250
	MEAN	345	46	9 691 185	235 403	2 928 044	194
	MEDIAN	149	45	9 281 460	177 520	3 757 084	91
	SE	154	5	1 934 581	79 688	1 266 460	93
Biotechnology	N	54	79	34	36	36	61
	MIN	1	0	9 288	14 286	14 861	1
	MAX	292	100	142 857 143	27 799 230	95 575 500	463
	MEAN	32	58	26 579 435	2 928 718	13 045 727	28
	MEDIAN	9	54	9 201 531	621 049	2 407 007	5
	SE	8	3	6 320 115	935 574	3 741 741	9
Civil Engineering & Thermo-dynamics	N	42	56	31	20	20	50
	MIN	1	0	545	2 000	4 016	1
	MAX	1 071	100	1 548 425 000	555 555 556	166 666 667	600
	MEAN	81	51	110 568 704	28 132 467	17 351 496	48
	MEDIAN	10	50	18 055 556	309 091	2 503 542	8
	SE	29	4	55 829 644	27 759 199	8 715 135	16
Computer	N	18	25	13	6	10	19
	MIN	1	0	545	6 780	4 016	1
	MAX	127	100	3 539 257 143	2 477 480	3 008 368 571	69
	MEAN	24	48	533 012 798	755 949	583 245 549	12
	MEDIAN	8	50	2 465 564	136 331	1 785 015	5
	SE	9	5	358 255 796	442 955	387 338 992	5
Electricity & Electrical Machines	N	51	73	44	27	22	59
	MIN	1	0	2	26 715	2	1
	MAX	2 280	100	115 492 958	3 500 000	19 268 627	1 347
	MEAN	262	54	15 548 002	854 219	3 048 468	163
	MEDIAN	30	50	5 996 291	619 370	1 515 858	21
	SE	68	3	3 889 274	174 760	901 645	38
Electronics	N	25	54	21	10	15	31
	MIN	1	5	2	74 588	2	1
	MAX	1 250	98	80 000 000	2 064 567	70 000 000	780
	MEAN	143	54	12 878 722	873 018	7 250 542	80
	MEDIAN	26	50	7 021 277	714 015	892 857	20
	SE	64	3	4 043 338	237 681	4 585 847	33
Handling and Processing	N	35	50	32	18	13	41
	MIN	1	10	10 228	6 000	3 170	1
	MAX	700	100	2 400 000 000	714 286	1 966 287 000	380
	MEAN	96	55	114 127 231	261 338	160 911 740	54
	MEDIAN	8	52	9 218 480	258 333	7 341 053	6
	SE	30	3	76 747 600	44 577	150 480 026	15

Approximate total sales per cluster throughout the world in 2006 [EUR]	Approximate total operating and capital expenditures per cluster in 2006 [EUR]	Approximate R&D budget per cluster in 2006 [EUR]	First patent filings by number of inventions
8	5	6	11
16 428 571	618 905	75 000	30%
4 414 225 000	4 696 355 000	221 900 000	132%
1 396 885 243	1 156 585 460	48 221 917	72%
858 922 395	33 236 765	17 752 000	73%
566 485 794	907 362 685	35 209 471	0.08
34	36	44	62
179 678	101 705	50 000	2%
8 136 360 000	1 323 741 449	707 253 093	316%
500 435 343	117 486 633	42 719 708	94%
103 974 113	10 460 040	2 645 500	85%
241 514 194	43 201 447	17 209 609	0.08
31	20	26	45
25 073	59 444	4 000	7%
9 290 550 000	2 139 865 693	40 000 000 000	341%
982 229 884	426 842 399	1 551 978 970	81%
300 000 000	55 950 000	2 686 553	67%
317 573 369	145 005 193	1 537 929 432	0.09
13	10	6	21
2 180	10 000	10 000	8%
24 774 800 000	21 058 580 000	122 045 400	100%
2 749 693 310	3 001 347 617	22 634 338	62%
24 655 636	14 408 435	664 665	60%
1 988 173 914	2 171 249 506	19 980 207	0.06
44	22	37	61
1 475	1 390	26 715	2%
8 136 360 000	3 000 000 000	1 000 000 000	123%
1 210 738 860	505 876 495	124 375 254	67%
385 714 286	24 385 725	21 493 551	71%
272 900 176	191 482 712	39 128 035	0.03
21	15	13	35
1 475	1 390	339 015	10%
3 603 299 747	1 400 000 000	30 968 500	167%
431 257 401	213 614 714	7 904 010	69%
53 265 820	3 441 714	2 034 090	67%
186 410 771	100 503 132	2 813 333	0.05
32	13	25	41
51 139	63 400	3 390	7%
55 200 000 000	5 858 226 042	112 218 000	175%
2 480 956 896	828 343 143	16 411 252	74%
93 666 667	70 833 333	1 762 878	76%
1 722 826 988	513 455 336	6 187 476	0.05

Table 83: Main statistics for activities in various sectors – Random group (unweighted)

Random group
Unweighted

Joint Cluster	Statistic	Total number of inventions considered for patent application in cluster	Proportion of inventions patented throughout the world [%]	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Approximate total operating and capital expenditures by first patent filing [EUR per first filing]	Number of first patent filings throughout the world in 2006
Human Necessities	N	80	105	66	54	39	88
	MIN	1	5	8 096	174	8 475	1
	MAX	3 030	100	1 136 363 636	9 090 909	266 666 667	1 519
	MEAN	125	55	52 392 399	1 107 046	21 144 746	75
	MEDIAN	17	50	16 525 102	378 879	5 072 000	15
	SE	49	2	18 631 256	253 288	7 549 320	25
Industrial Chemistry	N	41	58	36	26	19	43
	MIN	1	18	545	138	4 016	1
	MAX	825	95	276 611 860	12 882 570	40 681 800	800
	MEAN	79	61	34 735 838	1 450 975	7 628 611	74
	MEDIAN	19	63	9 415 111	473 765	2 643 085	15
	SE	22	3	9 467 795	581 778	2 626 950	22
Measuring Optics	N	22	36	16	9	13	24
	MIN	2	4	2	6 780	2	1
	MAX	1 100	100	84 533 333	6 193 700	76 080 000	844
	MEAN	83	55	11 568 043	1 406 272	7 929 019	91
	MEDIAN	8	50	6 512 097	813 636	452 020	5
	SE	50	4	5 134 186	637 988	5 748 840	47
Polymers	N	29	54	25	10	8	31
	MIN	1	0	8 096	3 778	14 861	1
	MAX	800	100	1 548 425 000	2 260 100	37 313 542	800
	MEAN	107	53	88 274 854	687 284	8 091 914	86
	MEDIAN	23	50	10 116 029	190 200	4 287 924	11
	SE	38	3	61 307 540	270 019	4 360 164	32
Pure & Applied Organic Chemistry	N	42	67	37	25	24	48
	MIN	1	8	2	15 000	2	1
	MAX	1 100	100	150 000 000	37 500 000	57 482 667	780
	MEAN	75	60	22 120 070	4 538 930	14 455 591	60
	MEDIAN	19	60	10 144 000	1 695 652	9 589 716	15
	SE	28	3	4 748 738	1 514 829	3 269 758	19
Tele-communication	N	32	53	25	17	19	35
	MIN	1	0	2	7 925	2	1
	MAX	8 300	99	3 096 850 000	15 484 250	2 477 480 000	5 840
	MEAN	609	51	157 060 854	1 902 201	168 396 358	442
	MEDIAN	35	50	5 243 432	437 439	3 757 084	30
	SE	280	4	123 922 281	918 239	132 177 722	179
Vehicles & General Technology	N	58	76	54	39	23	73
	MIN	1	5	545	347	4 016	1
	MAX	6 000	100	2 400 000 000	10 415 714	150 000 000	3 231
	MEAN	441	54	99 144 362	1 053 756	16 325 701	279
	MEDIAN	72	50	16 547 619	542 636	3 804 000	38
	SE	137	3	51 941 095	281 356	7 048 862	75

Approximate total sales per cluster throughout the world in 2006 [EUR]	Approximate total operating and capital expenditures per cluster in 2006 [EUR]	Approximate R&D budget per cluster in 2006 [EUR]	First patent filings by number of inventions
66	39	63	87
32 385	33 902	20 000	7%
100 000 000 000	10 000 000 000	800 000 000	400%
2 749 267 479	779 650 504	55 903 969	82%
420 909 000	83 397 690	5 000 000	77%
1 525 257 453	296 436 256	18 324 904	0.05
36	19	33	50
10 901	18 940	3 390	7%
9 681 415 100	2 034 090 000	707 253 093	615%
1 461 220 064	287 463 753	66 186 097	93%
405 000 000	21 357 586	12 680 000	76%
418 823 795	132 498 443	28 221 219	0.13
16	13	13	29
1 475	1 390	33 902	2%
1 714 861 868	1 543 375 681	274 602 150	341%
177 552 168	162 634 656	26 532 748	84%
41 496 158	1 428 571	1 356 060	71%
106 180 679	117 138 861	20 813 032	0.12
25	8	15	41
56 673	237 775	34 000	6%
19 934 082 000	4 326 934 307	406 818 000	123%
1 700 963 573	751 045 147	40 607 798	69%
404 641 176	265 012 178	2 576 514	64%
806 364 677	518 800 802	26 841 158	0.04
37	24	29	52
1 475	1 390	15 000	6%
16 719 772 747	9 499 870 879	1 500 000 000	150%
1 679 223 029	923 242 305	184 515 902	75%
166 425 000	87 095 172	31 947 260	78%
552 629 936	435 232 353	62 935 329	0.04
25	19	23	38
1 475	1 390	100 000	15%
69 837 090 000	305 113 500 000	2 977 520 000	333%
4 758 634 130	17 221 994 429	251 365 060	73%
576 363 636	115 265 100	30 968 500	67%
2 828 318 951	16 002 372 600	133 431 142	0.08
54	23	46	62
13 357	37 880	66 570	2%
69 740 000 000	19 020 000 000	29 164 000 000	350%
5 312 803 445	1 885 507 670	832 936 466	76%
1 561 225 000	500 000 000	13 459 000	73%
1 609 826 611	847 406 164	636 304 236	0.06

Table 84: Main statistics for activities in various sectors – Random group (unweighted)

**Smallest group
Unweighted**

Joint Cluster	Statistic	Total number of inventions considered for patent application in cluster	Proportion of inventions patented throughout the world [%]	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Approximate total operating and capital expenditures by first patent filing [EUR per first filing]	Number of first patent filings throughout the world in 2006
Audio, Video & Media	N	5	7	1	2	3	5
	MIN	1	0	11 131 167	33 394	2 566 667	1
	MAX	15	69	11 131 167	890 493	12 132 972	3
	MEAN	6	32	11 131 167	461 943	8 313 437	2
	MEDIAN	3	40	11 131 167	461 943	10 240 673	2
	SE	3	12	n/a	428 550	2 924 849	0
Biotechnology	N	9	16	3	5	3	10
	MIN	2	15	200 000	125 000	150 000	1
	MAX	20	80	25 000 000	2 000 000	2 679 728	9
	MEAN	8	45	10 316 667	1 262 500	1 629 354	3
	MEDIAN	6	50	5 750 000	2 000 000	2 058 333	2
	SE	2	5	7 514 449	451 733	761 117	1
Civil Engineering & Thermodynamics	N	25	38	21	17	8	34
	MIN	1	0	300 000	1 333	1 333	1
	MAX	20	100	222 222 222	1 500 000	16 000 000	170
	MEAN	6	47	28 030 302	348 372	3 882 385	9
	MEDIAN	4	50	10 000 000	166 667	2 046 667	2
	SE	1	5	11 325 485	98 872	1 915 680	5
Computer	N	4	10	0	1	0	6
	MIN	1	10	n/a	175 000	n/a	1
	MAX	7	100	n/a	175 000	n/a	7
	MEAN	4	59	n/a	175 000	n/a	4
	MEDIAN	3	55	n/a	175 000	n/a	3
	SE	1	10	n/a	n/a	n/a	1
Electricity & Electrical Machines	N	3	8	2	3	0	5
	MIN	3	0	6 250 000	2 500	n/a	2
	MAX	6	100	32 500 000	187 500	n/a	6
	MEAN	4	48	19 375 000	67 500	n/a	4
	MEDIAN	4	45	19 375 000	12 500	n/a	4
	SE	1	13	13 125 000	60 069	n/a	1
Electronics	N	8	17	4	4	3	8
	MIN	1	0	5 000	500	1 300	1
	MAX	4	90	47 500 000	2 000 000	12 132 972	3
	MEAN	3	41	15 026 250	606 375	4 728 091	2
	MEDIAN	3	40	6 300 000	212 500	2 050 000	2
	SE	0	7	11 029 722	468 585	3 749 377	0
Handling and Processing	N	12	18	10	8	3	16
	MIN	1	0	500 000	33 333	600 000	1
	MAX	13	100	87 210 500	2 683 400	16 000 000	5
	MEAN	4	55	23 002 697	723 497	6 922 222	2
	MEDIAN	2	55	9 875 000	156 250	4 166 667	2
	SE	1	7	10 062 441	342 553	4 654 203	0

Approximate total sales per cluster throughout the world in 2006 [EUR]	Approximate total operating and capital expenditures per cluster in 2006 [EUR]	Approximate R&D budget per cluster in 2006 [EUR]	First patent filings by number of inventions
1	3	3	6
33 393 500	7 700 000	66 787	5%
33 393 500	30 722 020	2 671 480	100%
33 393 500	16 851 664	1 579 422	55%
33 393 500	12 132 972	2 000 000	56%
n/a	7 052 255	780 763	0.17
3	3	9	11
400 000	300 000	200 000	5%
25 000 000	4 116 667	2 000 000	67%
10 383 333	2 365 465	1 172 039	46%
5 750 000	2 679 728	1 500 000	50%
7 469 735	1 112 925	264 844	0.05
21	8	22	27
300 000	20 000	10 000	20%
2 000 000 000	96 000 000	5 000 000	300%
205 899 925	20 381 385	932 391	69%
38 750 000	6 900 000	525 000	50%
105 011 547	11 545 984	263 235	0.10
0	0	3	5
n/a	n/a	50 000	40%
n/a	n/a	539 449	200%
n/a	n/a	313 150	83%
n/a	n/a	350 000	52%
n/a	n/a	142 488	0.30
2	0	4	5
25 000 000	n/a	5 000	50%
130 000 000	n/a	750 000	100%
77 500 000	n/a	203 325	78%
77 500 000	n/a	29 150	75%
52 500 000	n/a	182 512	0.10
4	3	13	10
5 000	1 300	500	33%
142 500 000	12 132 972	10 000 000	200%
41 926 250	5 411 424	1 401 341	75%
12 600 000	4 100 000	250 000	64%
33 791 084	3 562 969	784 109	0.15
10	3	11	15
1 000 000	1 200 000	8 300	20%
380 000 000	16 000 000	60 000 000	200%
58 853 490	7 122 222	6 791 175	81%
9 875 000	4 166 667	425 000	100%
37 018 701	4 520 748	5 362 459	0.11

Table 85: Main statistics for activities in various sectors – Smallest group (unweighted)

**Smallest group
Unweighted**

Joint Cluster	Statistic	Total number of inventions considered for patent application in cluster	Proportion of inventions patented throughout the world [%]	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Approximate total operating and capital expenditures by first patent filing [EUR per first filing]	Number of first patent filings throughout the world in 2006
Human Necessities	N	22	35	14	16	8	24
	MIN	1	0	28 000	7 976	50 000	1
	MAX	50	100	82 000 000	3 500 000	42 727 273	11
	MEAN	8	50	26 520 801	798 292	9 475 838	3
	MEDIAN	4	50	14 791 667	159 755	1 565 114	2
	SE	2	5	7 721 357	295 032	5 602 942	0
Industrial Chemistry	N	4	12	3	2	2	5
	MIN	3	10	5 000 000	2 000 000	4 000 000	1
	MAX	20	100	70 000 000	2 000 000	12 132 972	3
	MEAN	8	50	26 916 667	2 000 000	8 066 486	2
	MEDIAN	4	50	5 750 000	2 000 000	8 066 486	2
	SE	4	8	21 542 755	0	4 066 486	0
Measuring Optics	N	6	11	1	2	2	6
	MIN	2	10	17 500 000	101 705	339 015	1
	MAX	16	69	17 500 000	1 500 000	12 132 972	10
	MEAN	7	40	17 500 000	800 852	6 235 993	5
	MEDIAN	5	50	17 500 000	800 852	6 235 993	4
	SE	2	5	n/a	699 148	5 896 978	2
Polymers	N	1	7	0	0	0	1
	MIN	3	10	n/a	n/a	n/a	2
	MAX	3	65	n/a	n/a	n/a	2
	MEAN	3	40	n/a	n/a	n/a	2
	MEDIAN	3	50	n/a	n/a	n/a	2
	SE	n/a	8	n/a	n/a	n/a	n/a
Pure & Applied Organic Chemistry	N	5	7	1	0	2	5
	MIN	2	30	100 000	n/a	2 058 333	2
	MAX	17	75	100 000	n/a	12 132 972	10
	MEAN	5	56	100 000	n/a	7 095 653	4
	MEDIAN	2	50	100 000	n/a	7 095 653	2
	SE	3	6	n/a	n/a	5 037 319	2
Tele-communication	N	4	9	2	2	1	4
	MIN	1	0	600 000	60 000	24 000 000	1
	MAX	3	100	27 000 000	1 000 000	24 000 000	5
	MEAN	2	56	13 800 000	530 000	24 000 000	2
	MEDIAN	2	50	13 800 000	530 000	24 000 000	1
	SE	0	11	13 200 000	470 000	n/a	1
Vehicles & General Technology	N	6	18	5	4	1	12
	MIN	1	0	50 000	26 715	30 000 000	1
	MAX	8	100	47 500 000	833 333	30 000 000	170
	MEAN	4	53	16 966 471	352 512	30 000 000	17
	MEDIAN	4	50	5 882 353	275 000	30 000 000	2
	SE	1	7	9 363 517	178 092	n/a	14

Approximate total sales per cluster throughout the world in 2006 [EUR]	Approximate total operating and capital expenditures per cluster in 2006 [EUR]	Approximate R&D budget per cluster in 2006 [EUR]	First patent filings by number of inventions
14	8	22	22
56 000	100 000	5 000	12%
800 000 000	470 000 000	9 559 143	200%
112 729 421	67 188 701	1 461 165	57%
33 750 000	2 794 670	240 181	50%
56 501 459	57 851 574	506 890	0.09
3	2	5	4
5 750 000	8 000 000	10 000	5%
140 000 000	36 398 915	4 000 000	75%
51 916 667	22 199 458	1 228 194	49%
10 000 000	22 199 458	100 000	58%
44 058 752	14 199 458	789 581	0.16
1	2	6	9
17 500 000	678 030	100 000	5%
17 500 000	60 664 858	10 000 000	80%
17 500 000	30 671 444	2 383 902	51%
17 500 000	30 671 444	1 000 000	50%
n/a	29 993 414	1 554 064	0.08
0	0	1	2
n/a	n/a	10 000	75%
n/a	n/a	10 000	200%
n/a	n/a	10 000	138%
n/a	n/a	10 000	138%
n/a	n/a	n/a	0.63
1	2	2	5
200 000	20 583 333	10 000	60%
200 000	24 265 943	1 308 200	100%
200 000	22 424 638	659 100	87%
200 000	22 424 638	659 100	100%
n/a	1 841 305	649 100	0.08
2	1	3	6
3 000 000	24 000 000	200	33%
27 000 000	24 000 000	1 000 000	250%
15 000 000	24 000 000	433 400	90%
15 000 000	24 000 000	300 000	63%
12 000 000	n/a	296 224	0.34
5	1	9	7
50 000	150 000 000	5 000	13%
1 000 000 000	150 000 000	10 000 000	100%
249 290 000	150 000 000	1 635 746	72%
95 000 000	150 000 000	26 715	80%
189 841 966	n/a	1 094 132	0.12

Table 86: Main statistics for activities in various sectors – Smallest group (unweighted)

Random & Smallest group
Cases weighted with structural weight

Joint Cluster	Statistic	Total number of inventions considered for patent application in cluster	Proportion of inventions patented throughout the world [%]	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Approximate total operating and capital expenditures by first patent filing [EUR per first filing]	Number of first patent filings throughout the world in 2006
Audio, Video & Media	N	15	30	9	7	8	18
	MIN	1	0	3 531 380	33 394	7 548	1
	MAX	1 470	98	16 428 571	890 493	12 132 972	1 250
	MEAN	14	19	11 090 137	751 284	9 434 003	6
	MEDIAN	3	15	11 131 167	890 493	10 240 673	3
	SE	12	3	693 281	109 435	1 053 638	5
Biotechnology	N	63	95	37	41	39	71
	MIN	1	0	9 288	14 286	14 861	1
	MAX	292	100	142 857 143	27 799 230	95 575 500	463
	MEAN	5	59	4 914 191	4 252 876	5 377 083	8
	MEDIAN	3	50	179 678	339 015	422 667	3
	SE	1	3	2 792 680	1 427 583	1 821 990	2
Civil Engineering & Thermo-dynamics	N	67	94	52	37	28	84
	MIN	1	0	545	1 333	1 333	1
	MAX	1 071	100	1 548 425 000	555 555 556	166 666 667	600
	MEAN	8	51	22 147 189	344 419	13 850 125	7
	MEDIAN	4	50	7 750 000	160 000	760 000	2
	SE	2	3	10 505 187	89 678	8 008 454	1
Computer	N	22	35	13	7	10	25
	MIN	1	0	545	6 780	4 016	1
	MAX	127	100	3 539 257 143	2 477 480	3 008 368 571	69
	MEAN	4	47	1 042 804 845	68 043	940 233 144	3
	MEDIAN	4	26	735 948	61 329	551 961	3
	SE	1	6	447 183 654	25 315	441 011 224	0
Electricity & Electrical Machines	N	54	81	46	30	22	64
	MIN	1	0	2	2 500	2	1
	MAX	2 280	100	115 492 958	3 500 000	19 268 627	1 347
	MEAN	19	39	4 589 057	423 696	589 592	12
	MEDIAN	6	25	339 015	84 754	169 508	2
	SE	13	4	1 424 497	143 569	270 322	8
Electronics	N	33	71	25	14	18	39
	MIN	1	0	2	500	2	1
	MAX	1 250	98	80 000 000	2 064 567	70 000 000	780
	MEAN	13	33	8 970 706	603 087	683 640	9
	MEDIAN	4	25	1 356 060	135 606	4 016	2
	SE	16	3	3 271 725	219 570	425 482	10
Handling and Processing	N	47	68	42	26	16	57
	MIN	1	0	10 228	6 000	3 170	1
	MAX	700	100	2 400 000 000	2 683 400	1 966 287 000	380
	MEAN	4	61	26 695 572	585 087	23 212 908	3
	MEDIAN	2	65	12 000 000	223 617	4 166 667	1
	SE	2	3	7 601 094	171 774	45 531 011	1

Approximate total sales per cluster throughout the world in 2006 [EUR]	Approximate total operating and capital expenditures per cluster in 2006 [EUR]	Approximate R&D budget per cluster in 2006 [EUR]	First patent filings by number of inventions
9	8	9	17
16 428 571	618 905	66 787	5%
4 414 225 000	4 696 355 000	221 900 000	132%
94 564 345	27 432 738	2 580 865	51%
33 393 500	30 722 020	2 000 000	38%
67 403 829	11 756 549	1 953 535	0.10
37	39	53	73
179 678	101 705	50 000	2%
8 136 360 000	1 323 741 449	707 253 093	316%
12 695 632	6 984 885	6 434 503	124%
1 000 000	1 268 000	1 594 554	100%
7 463 354	2 348 262	2 399 783	0.10
52	28	48	72
25 073	20 000	4 000	7%
9 290 550 000	2 139 865 693	40 000 000 000	341%
117 000 616	83 345 033	1 682 721	90%
12 000 000	1 883 417	300 000	95%
64 427 062	48 152 265	3 501 418	0.07
13	10	9	26
2 180	10 000	10 000	8%
24 774 800 000	21 058 580 000	122 045 400	200%
3 128 216 543	2 820 589 271	124 679	84%
735 948	551 961	61 329	95%
1 341 860 295	1 323 343 896	687 185	0.08
46	22	41	66
1 475	1 390	5 000	2%
8 136 360 000	3 000 000 000	1 000 000 000	123%
86 460 771	1 278 271	6 299 952	77%
678 030	339 015	339 015	73%
65 984 317	4 492 287	7 171 407	0.03
25	18	26	45
1 475	1 300	500	10%
3 603 299 747	1 400 000 000	30 968 500	200%
24 988 394	1 412 558	1 103 643	81%
5 200 000	40 163	339 015	80%
9 946 439	1 001 865	464 316	0.07
42	16	36	56
51 139	63 400	3 390	7%
55 200 000 000	5 858 226 042	112 218 000	200%
70 509 441	45 703 898	4 190 278	88%
12 000 000	4 166 667	100 000	100%
47 280 784	99 315 935	2 292 932	0.05

Table 87: Main statistics for activities in various sectors – Random & Smallest group (weighted)

Random & Smallest group
Cases weighted with structural weight

Joint Cluster	Statistic	Total number of inventions considered for patent application in cluster	Proportion of inventions patented throughout the world [%]	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Approximate total operating and capital expenditures by first patent filing [EUR per first filing]	Number of first patent filings throughout the world in 2006
Human Necessities	N	102	140	80	70	47	112
	MIN	1	0	8 096	174	8 475	1
	MAX	3 030	100	1 136 363 636	9 090 909	266 666 667	1 519
	MEAN	6	47	20 944 028	533 425	4 441 238	4
	MEDIAN	4	50	12 083 333	226 010	1 412 563	3
Industrial Chemistry	SE	1	2	2 637 034	93 393	1 349 361	1
	N	45	70	39	28	21	48
	MIN	1	10	545	138	4 016	1
	MAX	825	100	276 611 860	12 882 570	40 681 800	800
	MEAN	8	62	4 235 360	602 339	742 860	6
Measuring Optics	MEDIAN	3	60	16 951	509 348	339 015	3
	SE	2	2	3 136 282	119 772	390 092	2
	N	28	47	17	11	15	30
	MIN	2	4	2	6 780	2	1
	MAX	1 100	100	84 533 333	6 193 700	76 080 000	844
Polymers	MEAN	21	53	2 708 005	323 098	1 175 966	13
	MEDIAN	3	50	1 695 075	101 705	339 015	3
	SE	24	3	1 465 429	123 459	780 482	15
	N	30	61	25	10	8	32
	MIN	1	0	8 096	3 778	14 861	1
Pure & Applied Organic Chemistry	MAX	800	100	1 548 425 000	2 260 100	37 313 542	800
	MEAN	7	44	33 394 286	708 352	635 969	5
	MEDIAN	2	50	2 305 302	712 276	743 244	2
	SE	2	4	40 098 106	26 802	521 291	1
	N	47	74	38	25	26	53
Tele-communications	MIN	1	8	2	15 000	2	1
	MAX	1 100	100	150 000 000	37 500 000	57 482 667	780
	MEAN	20	59	14 854 477	323 716	3 988 174	12
	MEDIAN	8	50	22 000 000	15 000	2 058 333	2
	SE	17	3	1 775 658	156 505	1 301 860	10
Vehicles & General Technology	N	36	62	27	19	20	39
	MIN	1	0	2	7 925	2	1
	MAX	8 300	100	3 096 850 000	15 484 250	2 477 480 000	5 840
	MEAN	8	45	13 564 221	881 316	12 594 796	5
	MEDIAN	4	50	1 017 045	1 000 000	1 695 075	3
	SE	9	4	34 634 767	192 934	34 002 101	6
	N	64	94	59	43	24	85
	MIN	1	0	545	347	4 016	1
	MAX	6 000	100	2 400 000 000	10 415 714	150 000 000	3 231
	MEAN	10	39	25 838 273	749 311	1 518 233	7
	MEDIAN	6	30	16 666 667	678 030	1 695 075	2
	SE	2	3	11 939 673	65 137	737 185	2

Approximate total sales per cluster throughout the world in 2006 [EUR]	Approximate total operating and capital expenditures per cluster in 2006 [EUR]	Approximate R&D budget per cluster in 2006 [EUR]	First patent filings by number of inventions
80	47	85	109
32 385	33 902	5 000	7%
100 000 000 000	10 000 000 000	800 000 000	400%
78 033 807	23 982 608	1 230 997	110%
22 000 000	3 390 150	400 000	67%
29 534 541	13 664 808	253 382	0.11
39	21	38	54
10 901	18 940	3 390	5%
9 681 415 100	2 034 090 000	707 253 093	615%
18 436 824	3 478 567	1 081 660	86%
67 803	1 018 695	509 348	100%
21 996 693	13 238 759	2 482 850	0.03
17	15	19	38
1 475	1 390	33 902	2%
1 714 861 868	1 543 375 681	274 602 150	341%
3 642 270	3 449 157	1 202 536	122%
1 695 075	678 030	100 000	67%
2 961 145	3 315 681	654 010	0.16
25	8	16	43
56 673	237 775	10 000	6%
19 934 082 000	4 326 934 307	406 818 000	200%
64 954 116	2 465 922	1 936 559	101%
9 221 208	743 244	2 576 514	100%
81 334 592	12 238 921	298 091	0.08
38	26	31	57
1 475	1 390	10 000	6%
16 719 772 747	9 499 870 879	1 500 000 000	150%
52 764 328	31 140 720	1 593 854	77%
22 000 000	20 583 333	15 000	80%
45 539 340	12 844 107	1 797 158	0.05
27	20	26	44
1 475	1 390	200	15%
69 837 090 000	305 113 500 000	2 977 520 000	333%
42 276 652	50 145 687	1 633 670	75%
3 000 000	3 390 150	1 000 000	75%
130 262 705	590 740 649	618 834	0.06
59	24	55	69
13 357	37 880	5 000	2%
69 740 000 000	19 020 000 000	29 164 000 000	350%
111 287 798	4 811 720	1 944 906	61%
50 000 000	3 390 150	150 000	50%
97 502 060	7 983 572	3 727 710	0.04

Table 88: Main statistics for activities in various sectors – Random & Smallest group (weighted)

Random group
Unweighted

Joint Cluster	Statistic	Total number of inventions considered for patent application	Proportion of inventions patented throughout the world [%]	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Approximate total operating and capital expenditures by first patent filing [EUR per first filing]	Number of first patent filings throughout the world in 2006
EP	N	384	396	208	62	90	329
	MIN	1	0	1 670	4 182	1 300	1
	MAX	10 000	100	3 539 257 143	15 484 250	3 008 368 571	5 600
	MEAN	78	55	93 105 881	1 270 758	77 441 022	53
	MEDIAN	8	50	15 727 273	335 887	4 086 943	5
	SE	27	1	27 058 948	313 758	42 993 474	18
JP	N	124	112	83	30	45	97
	MIN	1	0	2	138	2	1
	MAX	10 000	95	150 638 400	12 680 000	95 575 500	5 464
	MEAN	943	48	15 807 986	1 218 800	13 031 969	563
	MEDIAN	250	50	7 092 203	296 688	5 072 000	152
	SE	157	2	2 673 255	492 662	3 125 876	106
OT	N	24	26	7	3	14	21
	MIN	1	5	42 414	226 010	8 475	1
	MAX	10 000	100	6 561 581	2 034 090	5 139 905	5 840
	MEAN	777	58	1 807 705	923 149	1 276 326	303
	MEDIAN	8	60	1 149 919	509 348	662 918	7
	SE	529	6	849 026	561 460	427 712	277
US	N	84	88	51	19	44	77
	MIN	2	0	9 288	6 780	14 861	1
	MAX	4 000	100	3 344 948 000	27 799 230	2 802 524 000	1 550
	MEAN	241	57	98 382 748	2 745 564	129 072 992	121
	MEDIAN	35	60	9 335 196	406 818	1 893 201	31
	SE	63	3	66 348 210	1 524 696	77 519 191	27

Approximate total sales throughout the world in 2006 [EUR]	Approximate total operating and capital expenditures in 2006 [EUR]	Approximate R&D budget in 2006 [EUR]	First patent filings by number of inventions
293	122	78	277
5 000	1 300	5 000	5%
100 000 000 000	21 058 580 000	3 254 544 000	615%
2 514 898 402	827 669 157	102 833 253	77%
70 000 000	10 000 000	1 750 000	71%
506 229 813	241 158 755	52 594 863	0.03
116	55	31	91
7 376	6 948	31 700	2%
69 740 000 000	23 821 916 000	3 487 000 000	112%
5 102 486 531	2 486 415 527	328 670 148	75%
1 615 115 000	557 920 000	67 838 000	80%
993 263 757	680 489 834	120 429 060	0.03
10	16	3	17
381 729	33 902	509 348	15%
16 451 041 890	318 674 100	2 034 090	400%
1 739 465 017	23 020 448	1 073 823	131%
7 989 825	1 865 408	678 030	100%
1 635 448 659	19 728 000	482 597	0.24
70	55	23	65
67 803	67 803	67 803	17%
69 837 090 000	305 113 500 000	4 135 983 000	341%
5 698 876 168	7 027 784 559	378 030 615	89%
624 540 552	48 750 357	11 526 510	67%
1 549 418 758	5 554 246 504	196 747 197	0.08

Table 89: Main statistics for activities by residence bloc – Random & Smallest group (unweighted)

Random & Smallest group
Cases weighted with structural weight

Joint Cluster	Statistic	Total number of inventions considered for patent application	Proportion of inventions patented throughout the world [%]	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Approximate total operating and capital expenditures by first patent filing [EUR per first filing]	Number of first patent filings throughout the world in 2006
EP	N	384	396	208	62	90	329
	MIN	1	0	1 670	4 182	1 300	1
	MAX	10 000	100	3 539 257 143	15 484 250	3 008 368 571	5 600
	MEAN	6	48	21 732 296	657 046	13 950 442	4
	MEDIAN	3	50	10 000 000	150 000	2 050 000	2
	SE	1	2	6 378 328	153 652	10 080 951	1
JP	N	124	112	83	30	45	97
	MIN	1	0	2	138	2	1
	MAX	10 000	95	150 638 400	12 680 000	95 575 500	5 464
	MEAN	278	33	5 290 334	361 681	1 230 790	96
	MEDIAN	26	20	380 400	344 253	422 667	6
	SE	41	2	2 415 065	52 843	705 142	33
OT	N	24	26	7	3	14	21
	MIN	1	5	42 414	226 010	8 475	1
	MAX	10 000	100	6 561 581	2 034 090	5 139 905	5 840
	MEAN	3	49	1 045 708	923 149	1 147 151	7
	MEDIAN	2	50	735 948	509 348	551 961	3
	SE	2	5	364 031	561 460	335 529	3
US	N	84	88	51	19	44	77
	MIN	2	0	9 288	6 780	14 861	1
	MAX	4 000	100	3 344 948 000	27 799 230	2 802 524 000	1 550
	MEAN	8	59	382 445 987	6 556 606	262 105 111	6
	MEDIAN	6	75	1 017 045	339 015	678 030	4
	SE	4	3	149 382 032	2 701 262	123 265 800	3

Approximate total sales throughout the world in 2006 [EUR]	Approximate total operating and capital expenditures in 2006 [EUR]	Approximate R&D budget in 2006 [EUR]	First patent filings by number of inventions
293	122	78	277
5 000	1 300	5 000	5%
100 000 000 000	21 058 580 000	3 254 544 000	615%
353 131 002	70 757 297	1 645 989	74%
12 000 000	2 100 000	175 000	67%
159 184 868	26 606 463	1 837 250	0.03
116	55	31	91
7 376	6 948	31 700	2%
69 740 000 000	23 821 916 000	3 487 000 000	112%
1 477 049 047	746 552 790	66 533 440	94%
190 200 000	1 268 000	76 080 000	100%
172 454 485	153 357 221	4 827 035	0.01
10	16	3	17
381 729	33 902	509 348	15%
16 451 041 890	318 674 100	2 034 090	400%
24 077 145	2 502 301	1 073 823	150%
3 390 150	1 017 045	678 030	100%
14 672 294	836 230	482 597	0.25
70	55	23	65
67 803	67 803	67 803	17%
69 837 090 000	305 113 500 000	4 135 983 000	341%
948 560 736	661 320 291	10 089 172	99%
813 636	2 373 105	1 356 060	67%
349 478 247	346 808 641	8 570 413	0.10

Table 90: Main statistics for activities by residence bloc – Random & Smallest group (weighted)

Random group
Unweighted

Joint Cluster	Proportion of applicants having withdrawn applications in 2006	Reasons for withdrawal	Proportion of withdrawals			
			0-20%	21-50%	51-80%	81-100%
Audio, Video & Media	43%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 80% 50% 25% 56% 30% 100% 0%	0% 20% 50% 50% 33% 20% 0% 0%	0% 0% 0% 25% 11% 30% 0% 0%	0% 0% 0% 0% 0% 20% 0% 0%
Biotechnology	41%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 55% 67% 50% 47% 19% 80% 33%	0% 27% 33% 33% 35% 32% 20% 33%	0% 18% 0% 17% 12% 23% 0% 33%	0% 0% 0% 0% 6% 26% 0% 0%
Civil Engineering & Thermodynamics	32%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 77% 75% 78% 85% 35% 100% 100%	0% 15% 25% 11% 8% 24% 0% 0%	0% 8% 0% 11% 8% 12% 0% 0%	0% 0% 0% 0% 0% 29% 0% 0%
Computer	55%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 63% 44% 63% 54% 13% 100% 0%	0% 25% 44% 38% 31% 27% 0% 0%	0% 13% 11% 0% 8% 20% 0% 0%	0% 0% 0% 0% 8% 40% 0% 0%
Electricity & Electrical Machines	47%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 47% 60% 78% 59% 35% 100% 100%	0% 18% 20% 11% 29% 16% 0% 0%	0% 29% 20% 11% 6% 26% 0% 0%	0% 6% 0% 0% 6% 23% 0% 0%
Electronics	52%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 69% 46% 67% 75% 31% 100% 67%	0% 15% 38% 25% 13% 15% 0% 33%	0% 8% 8% 8% 6% 19% 0% 0%	0% 8% 8% 0% 6% 35% 0% 0%
Handling and Processing	41%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 73% 91% 64% 57% 47% 100% 67%	0% 7% 9% 36% 29% 21% 0% 33%	0% 13% 0% 0% 14% 11% 0% 0%	0% 0% 0% 0% 0% 0% 0%

Table 91: Withdrawal activity and motivations for withdrawals by Joint cluster – Random group (unweighted)

Random group
Unweighted

Joint Cluster	Proportion of applicants having withdrawn applications in 2006	Reasons for withdrawal	Proportion of withdrawals			
			0-20%	21-50%	51-80%	81-100%
Human Necessities	44%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 50% 69% 81% 60% 36% 85% 75%	0% 40% 25% 13% 20% 18% 15% 25%	0% 5% 6% 6% 5% 24% 0% 0%	0% 5% 0% 0% 15% 21% 0% 0%
Industrial Chemistry	39%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	90% 55% 60% 67% 67% 22% 100% 67%	10% 27% 30% 22% 33% 26% 0% 33%	0% 18% 10% 11% 0% 26% 0% 0%	0% 0% 0% 0% 0% 26% 0% 0%
Measuring, Optics	57%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 73% 60% 78% 79% 30% 100% 33%	0% 9% 40% 22% 14% 15% 0% 33%	0% 9% 0% 0% 7% 25% 0% 33%	0% 9% 0% 0% 0% 30% 0% 0%
Polymers	48%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 58% 67% 71% 63% 24% 86% 100%	0% 42% 25% 14% 25% 24% 14% 0%	0% 0% 8% 14% 13% 28% 0% 0%	0% 0% 0% 0% 0% 24% 0% 0%
Pure & Applied Organic Chemistry	51%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 67% 63% 50% 60% 21% 80% 67%	0% 17% 31% 50% 25% 26% 10% 33%	0% 17% 6% 0% 10% 29% 10% 0%	0% 0% 0% 0% 5% 24% 0% 0%
Telecommunications	52%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 55% 42% 60% 62% 36% 100% 50%	0% 36% 42% 20% 23% 9% 0% 50%	0% 9% 8% 10% 15% 27% 0% 0%	0% 0% 8% 10% 0% 27% 0% 0%
Vehicles & General Technology	45%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 60% 79% 85% 76% 42% 83% 67%	0% 15% 14% 15% 12% 12% 17% 33%	0% 5% 7% 0% 12% 23% 0% 0%	0% 20% 0% 0% 0% 23% 0% 0%

Table 92: Withdrawal activity and motivations for withdrawals by Joint cluster – Random group (unweighted)

Smallest group
Unweighted

Joint Cluster	Proportion of applicants having withdrawn applications in 2006	Reasons for withdrawal	Proportion of withdrawals			
			0-20%	21-50%	51-80%	81-100%
Audio, Video & Media	33%	Not Complying with formal requirements	n/a	n/a	n/a	n/a
		Discouraging search report written by the EPC	100%	n/a	n/a	n/a
		Negative communications sent out by the EPO during substantive examination	n/a	n/a	n/a	n/a
		Reduction of the scope of the invention required by the EPC	n/a	n/a	n/a	n/a
		Disclosure of new prior art during the substantive examination of the file	n/a	n/a	n/a	n/a
		Fading perceived economic importance of the inventor	33%	33%	33%	n/a
		After defensive publication of the application	100%	n/a	n/a	n/a
		Other	n/a	n/a	n/a	n/a
Biotechnology	17%	Not Complying with formal requirements	n/a	n/a	n/a	n/a
		Discouraging search report written by the EPC	100%	n/a	n/a	n/a
		Negative communications sent out by the EPO during substantive examination	n/a	n/a	n/a	n/a
		Reduction of the scope of the invention required by the EPC	100%	n/a	n/a	n/a
		Disclosure of new prior art during the substantive examination of the file	n/a	n/a	n/a	n/a
		Fading perceived economic importance of the inventor	100%	n/a	n/a	n/a
		After defensive publication of the application	100%	n/a	n/a	n/a
		Other	100%	n/a	n/a	n/a
Civil Engineering & Thermodynamics	17%	Not Complying with formal requirements	50%	50%	n/a	n/a
		Discouraging search report written by the EPC	67%	33%	n/a	n/a
		Negative communications sent out by the EPO during substantive examination	50%	50%	n/a	n/a
		Reduction of the scope of the invention required by the EPC	100%	n/a	n/a	n/a
		Disclosure of new prior art during the substantive examination of the file	100%	n/a	n/a	n/a
		Fading perceived economic importance of the inventor	33%	17%	33%	17%
		After defensive publication of the application	50%	50%	n/a	n/a
		Other	n/a	n/a	n/a	n/a
Computer	20%	Not Complying with formal requirements	100%	n/a	n/a	n/a
		Discouraging search report written by the EPC	100%	n/a	n/a	n/a
		Negative communications sent out by the EPO during substantive examination	100%	n/a	n/a	n/a
		Reduction of the scope of the invention required by the EPC	100%	n/a	n/a	n/a
		Disclosure of new prior art during the substantive examination of the file	100%	n/a	n/a	n/a
		Fading perceived economic importance of the inventor	50%	50%	n/a	n/a
		After defensive publication of the application	50%	50%	n/a	n/a
		Other	100%	n/a	n/a	n/a
Electricity & Electrical Machines	25%	Not Complying with formal requirements	100%	n/a	n/a	n/a
		Discouraging search report written by the EPC	100%	n/a	n/a	n/a
		Negative communications sent out by the EPO during substantive examination	n/a	n/a	n/a	n/a
		Reduction of the scope of the invention required by the EPC	n/a	n/a	n/a	n/a
		Disclosure of new prior art during the substantive examination of the file	n/a	n/a	n/a	n/a
		Fading perceived economic importance of the inventor	50%	50%	n/a	n/a
		After defensive publication of the application	100%	n/a	n/a	n/a
		Other	n/a	n/a	n/a	n/a
Electronics	21%	Not Complying with formal requirements	100%	n/a	n/a	n/a
		Discouraging search report written by the EPC	100%	n/a	n/a	n/a
		Negative communications sent out by the EPO during substantive examination	n/a	n/a	n/a	n/a
		Reduction of the scope of the invention required by the EPC	n/a	n/a	n/a	n/a
		Disclosure of new prior art during the substantive examination of the file	n/a	n/a	n/a	n/a
		Fading perceived economic importance of the inventor	50%	25%	25%	n/a
		After defensive publication of the application	100%	n/a	n/a	n/a
		Other	n/a	n/a	n/a	n/a
Handling and Processing	12%	Not Complying with formal requirements	100%	n/a	n/a	n/a
		Discouraging search report written by the EPC	50%	50%	n/a	n/a
		Negative communications sent out by the EPO during substantive examination	100%	n/a	n/a	n/a
		Reduction of the scope of the invention required by the EPC	100%	n/a	n/a	n/a
		Disclosure of new prior art during the substantive examination of the file	100%	n/a	n/a	n/a
		Fading perceived economic importance of the inventor	33%	33%	33%	n/a
		After defensive publication of the application	100%	n/a	n/a	n/a
		Other	n/a	n/a	n/a	n/a

Table 93: Withdrawal activity and motivations for withdrawals by Joint cluster – Smallest group (unweighted)

Smallest group
Unweighted

Joint Cluster	Proportion of applicants having withdrawn applications in 2006	Reasons for withdrawal	Proportion of withdrawals			
			0-20%	21-50%	51-80%	81-100%
Human Necessities	20%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	100% 67% 67% 40% 33% 67% 100% 100%	n/a 33% 33% 20% 67% 33% n/a n/a	n/a n/a n/a 40% n/a n/a n/a n/a	n/a n/a n/a n/a n/a n/a n/a n/a
Industrial Chemistry	31%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	n/a n/a n/a n/a n/a 25% 100% n/a	n/a n/a n/a n/a n/a 25% n/a n/a	n/a n/a n/a n/a n/a 25% n/a n/a	n/a n/a n/a n/a n/a 25% n/a n/a
Measuring, Optics	25%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	100% 100% 100% 100% 100% 33% 100% n/a	n/a n/a n/a n/a n/a 33% n/a n/a	n/a n/a n/a n/a n/a 33% n/a n/a	n/a n/a n/a n/a n/a n/a n/a n/a
Polymers	43%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	100% 100% n/a n/a n/a 33% 100% n/a	n/a n/a n/a n/a n/a 33% n/a n/a	n/a n/a n/a n/a n/a 33% n/a n/a	n/a n/a n/a n/a n/a n/a n/a n/a
Pure & Applied Organic Chemistry	30%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	n/a n/a n/a n/a n/a 50% 100% n/a	n/a n/a n/a n/a n/a 50% n/a n/a	n/a n/a n/a n/a n/a n/a n/a n/a	n/a n/a n/a n/a n/a n/a n/a n/a
Telecommunications	30%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	n/a 100% 100% n/a n/a 50% 100% n/a	n/a n/a n/a n/a n/a 50% n/a n/a	n/a n/a n/a n/a n/a n/a n/a n/a	n/a n/a n/a n/a n/a n/a n/a n/a
Vehicles & General Technology	28%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	n/a 100% n/a n/a n/a 40% 100% n/a	n/a n/a n/a n/a n/a 20% n/a n/a	n/a n/a n/a n/a n/a 40% n/a n/a	n/a n/a n/a n/a n/a n/a n/a n/a

Table 94: Withdrawal activity and motivations for withdrawals by Joint cluster – Smallest group (unweighted)

Random & Smallest group
Cases weighted with structural weight

Joint Cluster	Proportion of applicants having withdrawn applications in 2006	Reasons for withdrawal	Proportion of withdrawals			
			0-20%	21-50%	51-80%	81-100%
Audio, Video & Media	11%	Not Complying with formal requirements	100%	0%	0%	0%
		Discouraging search report written by the EPC	100%	0%	0%	0%
		Negative communications sent out by the EPO during substantive examination	100%	0%	0%	0%
		Reduction of the scope of the invention required by the EPC	8%	92%	0%	0%
		Disclosure of new prior art during the substantive examination of the file	100%	0%	0%	0%
		Fading perceived economic importance of the inventor	13%	80%	0%	7%
		After defensive publication of the application	92%	8%	0%	0%
		Other	0%	0%	0%	0%
Biotechnology	14%	Not Complying with formal requirements	100%	0%	0%	0%
		Discouraging search report written by the EPC	91%	9%	0%	0%
		Negative communications sent out by the EPO during substantive examination	99%	1%	0%	0%
		Reduction of the scope of the invention required by the EPC	0%	92%	8%	0%
		Disclosure of new prior art during the substantive examination of the file	97%	1%	0%	2%
		Fading perceived economic importance of the inventor	0%	16%	5%	79%
		After defensive publication of the application	92%	0%	8%	0%
		Other	0%	3%	97%	0%
Civil Engineering & Thermodynamics	14%	Not Complying with formal requirements	80%	20%	0%	0%
		Discouraging search report written by the EPC	33%	65%	2%	0%
		Negative communications sent out by the EPO during substantive examination	50%	25%	25%	0%
		Reduction of the scope of the invention required by the EPC	1%	33%	66%	0%
		Disclosure of new prior art during the substantive examination of the file	75%	25%	0%	0%
		Fading perceived economic importance of the inventor	27%	28%	29%	15%
		After defensive publication of the application	65%	32%	3%	0%
		Other	100%	0%	0%	0%
Computer	8%	Not Complying with formal requirements	100%	0%	0%	0%
		Discouraging search report written by the EPC	100%	0%	0%	0%
		Negative communications sent out by the EPO during substantive examination	100%	0%	0%	0%
		Reduction of the scope of the invention required by the EPC	50%	50%	0%	0%
		Disclosure of new prior art during the substantive examination of the file	100%	0%	0%	0%
		Fading perceived economic importance of the inventor	45%	48%	0%	7%
		After defensive publication of the application	96%	4%	0%	0%
		Other	100%	0%	0%	0%
Electricity & Electrical Machines	24%	Not Complying with formal requirements	100%	0%	0%	0%
		Discouraging search report written by the EPC	18%	20%	61%	0%
		Negative communications sent out by the EPO during substantive examination	96%	4%	0%	0%
		Reduction of the scope of the invention required by the EPC	96%	4%	0%	0%
		Disclosure of new prior art during the substantive examination of the file	98%	2%	0%	0%
		Fading perceived economic importance of the inventor	20%	70%	6%	4%
		After defensive publication of the application	92%	8%	0%	0%
		Other	100%	0%	0%	0%
Electronics	34%	Not Complying with formal requirements	100%	0%	0%	0%
		Discouraging search report written by the EPC	100%	0%	0%	0%
		Negative communications sent out by the EPO during substantive examination	99%	1%	0%	1%
		Reduction of the scope of the invention required by the EPC	8%	91%	1%	0%
		Disclosure of new prior art during the substantive examination of the file	100%	0%	0%	0%
		Fading perceived economic importance of the inventor	10%	47%	0%	43%
		After defensive publication of the application	92%	8%	0%	0%
		Other	0%	100%	0%	0%
Handling and Processing	13%	Not Complying with formal requirements	100%	0%	0%	0%
		Discouraging search report written by the EPC	66%	3%	31%	0%
		Negative communications sent out by the EPO during substantive examination	100%	0%	0%	0%
		Reduction of the scope of the invention required by the EPC	36%	64%	0%	0%
		Disclosure of new prior art during the substantive examination of the file	67%	33%	0%	0%
		Fading perceived economic importance of the inventor	47%	26%	1%	26%
		After defensive publication of the application	100%	0%	0%	0%
		Other	32%	68%	0%	0%

Table 95: Withdrawal activity and motivations for withdrawals by Joint cluster – Random & Smallest group (weighted)

Random & Smallest group
Cases weighted with structural weight

Joint Cluster	Proportion of applicants having withdrawn applications in 2006	Reasons for withdrawal	Proportion of withdrawals			
			0-20%	21-50%	51-80%	81-100%
Human Necessities	26%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	100% 94% 95% 35% 49% 14% 99% 0%	0% 6% 5% 60% 50% 23% 1% 100%	0% 0% 0% 5% 0% 11% 0% 0%	0% 0% 0% 0% 1% 51% 0% 0%
Industrial Chemistry	22%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	92% 100% 100% 2% 98% 13% 92% 100%	8% 0% 0% 98% 2% 15% 8% 0%	0% 0% 0% 0% 0% 57% 0% 0%	0% 0% 0% 0% 0% 15% 0% 0%
Measuring, Optics	18%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	100% 99% 100% 50% 100% 38% 92% 0%	0% 0% 0% 50% 0% 41% 8% 99%	0% 0% 0% 0% 0% 0% 0% 1%	0% 1% 0% 0% 0% 21% 0% 0%
Polymers	10%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	100% 74% 97% 2% 98% 5% 90% 100%	0% 26% 2% 97% 2% 59% 2% 0%	0% 0% 1% 1% 0% 25% 8% 0%	0% 0% 0% 0% 0% 11% 0% 0%
Pure & Applied Organic Chemistry	49%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	100% 100% 99% 2% 97% 3% 92% 90%	0% 0% 1% 98% 0% 59% 0% 10%	0% 0% 0% 0% 1% 20% 8% 0%	0% 0% 0% 0% 2% 18% 0% 0%
Telecommunications	31%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	100% 1% 0% 93% 46% 94% 1% 0%	0% 99% 99% 1% 6% 2% 99% 100%	0% 0% 0% 0% 48% 0% 0% 0%	0% 0% 1% 6% 0% 4% 0% 0%
Vehicles & General Technology	40%	Not Complying with formal requirements Discouraging search report written by the EPC Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPC Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the inventor After defensive publication of the application Other	100% 68% 100% 32% 99% 9% 92% 0%	0% 0% 0% 68% 1% 44% 8% 100%	0% 0% 0% 0% 0% 0% 0% 0%	0% 32% 0% 0% 0% 46% 0% 0%

Table 96: Withdrawal activity and motivations for withdrawals by Joint cluster – Random & Smallest group (weighted)

Random & Smallest group
Unweighted

Joint Cluster	Proportion of applicants having withdrawn applications in 2006	Reasons for withdrawal	Proportion of withdrawals			
			0-20%	21-50%	51-80%	81-100%
Total	33%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	96% 55% 63% 69% 62% 36% 84% 39%	2% 26% 21% 19% 26% 18% 9% 6%	2% 11% 12% 10% 9% 23% 7% 6%	0% 8% 4% 1% 3% 23% 0% 50%
EP	29%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	95% 53% 63% 66% 74% 43% 79% 36%	3% 25% 19% 20% 26% 18% 12% 7%	3% 13% 12% 12% 0% 19% 9% 57%	0% 10% 6% 2% 0% 20% 0% 0%
JA	39%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 70% 58% 63% 35% 24% 100% 0%	0% 10% 25% 25% 32% 28% 0% 0%	0% 10% 17% 13% 23% 28% 0% 0%	0% 10% 0% 0% 10% 20% 0% 0%
OT	29%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	0% 67% 33% 100% 33% 40% 0% 0%	0% 33% 33% 0% 67% 20% 0% 0%	0% 0% 33% 0% 0% 40% 0% 0%	0% 0% 0% 0% 0% 0% 0% 0%
US	44%	Not Complying with formal requirements Discouraging search report written by the EPO Negative communications sent out by the EPO during substantive examination Reduction of the scope of the invention required by the EPO Disclosure of new prior art during the substantive examination of the file Fading perceived economic importance of the invention After defensive publication of the application Other	100% 67% 71% 100% 87% 34% 100% 50%	0% 33% 21% 0% 7% 3% 0% 25%	0% 0% 7% 0% 7% 29% 0% 25%	0% 0% 0% 0% 0% 34% 0% 0%

Table 97: Withdrawal activity and motivations for withdrawals by residence bloc – Random & Smallest group (unweighted)

Random & Smallest group
Cases weighted with structural weight

Joint Cluster	Proportion of applicants having withdrawn applications in 2006	Reasons for withdrawal	Proportion of withdrawals			
			0-20%	21-50%	51-80%	81-100%
Total	17%	Not Complying with formal requirements	90%	1%	9%	0%
		Discouraging search report written by the EPO	44%	32%	12%	12%
		Negative communications sent out by the EPO during substantive examination	71%	20%	9%	0%
		Reduction of the scope of the invention required by the EPO	48%	30%	22%	0%
		Disclosure of new prior art during the substantive examination of the file	70%	30%	0%	0%
		Fading perceived economic importance of the invention	35%	18%	19%	29%
		After defensive publication of the application	87%	12%	1%	0%
		Other	3%	0%	39%	58%
EP	13%	Not Complying with formal requirements	90%	1%	9%	0%
		Discouraging search report written by the EPO	44%	31%	12%	12%
		Negative communications sent out by the EPO during substantive examination	70%	20%	10%	0%
		Reduction of the scope of the invention required by the EPO	46%	32%	23%	0%
		Disclosure of new prior art during the substantive examination of the file	70%	30%	0%	0%
		Fading perceived economic importance of the invention	54%	17%	16%	13%
		After defensive publication of the application	87%	12%	1%	0%
		Other	1%	0%	99%	0%
JA	2%	Not Complying with formal requirements	100%	0%	0%	0%
		Discouraging search report written by the EPO	44%	0%	54%	1%
		Negative communications sent out by the EPO during substantive examination	96%	2%	2%	0%
		Reduction of the scope of the invention required by the EPO	22%	77%	0%	0%
		Disclosure of new prior art during the substantive examination of the file	77%	6%	6%	12%
		Fading perceived economic importance of the invention	9%	6%	3%	82%
		After defensive publication of the application	100%	0%	0%	0%
		Other	0%	0%	0%	0%
OT	25%	Not Complying with formal requirements	0%	0%	0%	0%
		Discouraging search report written by the EPO	75%	25%	0%	0%
		Negative communications sent out by the EPO during substantive examination	0%	100%	0%	0%
		Reduction of the scope of the invention required by the EPO	100%	0%	0%	0%
		Disclosure of new prior art during the substantive examination of the file	0%	100%	0%	0%
		Fading perceived economic importance of the invention	50%	0%	50%	0%
		After defensive publication of the application	0%	0%	0%	0%
		Other	0%	0%	0%	0%
US	26%	Not Complying with formal requirements	100%	0%	0%	0%
		Discouraging search report written by the EPO	37%	63%	0%	0%
		Negative communications sent out by the EPO during substantive examination	98%	2%	0%	0%
		Reduction of the scope of the invention required by the EPO	100%	0%	0%	0%
		Disclosure of new prior art during the substantive examination of the file	94%	0%	6%	0%
		Fading perceived economic importance of the invention	1%	30%	35%	35%
		After defensive publication of the application	100%	0%	0%	0%
		Other	4%	48%	48%	0%

Table 98: Withdrawal activity and motivations for withdrawals by residence bloc – Random & Smallest group (weighted)

16 Annex VII: Imputing the Smallest group into the Random group

In previous years, growth index estimates for the Random group and subsets thereof were based on the so called Q-Index¹⁶. For these estimates the Poisson distribution based weight term

$$q_i = \frac{A_i}{1 - e^{-n^+ \frac{A_i}{A}}}$$

is a key pillar. Here A_i is the number of filings in the base year of applicant i , A is the total number of filings by all applicants and n^+ is the number of applications selected for the sample in order to draw n applicants. The numerator of this expression A_i is a measure of the importance of applicant i in the population. The denominator is an approximation according to the Poisson distribution for the probability of selection of applicant i into the sample. For the Random group in the current survey, $A = 135\,129$, $n^+ = 3\,000$ and $n = 1\,849$.

The additional Smallest group that was sampled provides additional resolution regarding small applicants that are underrepresented in the Random group. Information from both samples is to be pooled into a combined Random & Smallest group to give a common Q index estimate. Care has to be taken that the weights of applicants eligible for both the Random group and the Smallest group are properly adjusted so as not to inflate the weighted proportion of small applicants in the combined Random & Smallest group. The intention is to increase the resolution, not the overall weight of small applicants.

For this it is necessary to calculate the probability that each applicant appears somewhere in the two samples. The Smallest group was drawn from EPC resident applicants that made less than three applications in the base year (2006) according to the database. Therefore, for applicants outside the EPC or that made three or more applications, the probability of inclusion is unchanged and the q_i factor remains as given above.

Call an EPC based applicant that made one or two applications in the base year a "Smallest group eligible applicant". Such applicants can be selected for either one of the two samples (Random group, Smallest group) or for both or for neither of them. Consider two lists from which an applicant can be selected. The first list covers the whole population of applicants and the Random group is drawn from it in the usual way. The second list corresponds to the population of Smallest group eligible applicants. Say that there are A' applications in the population of Smallest group eligible applicants and $n^{+'}$ random numbers are used to pick finally n' applicants for the Smallest group. The Poisson model can be applied again to the second list. Let h_i represent the number of times that the applicant i is selected for the Smallest group. This gives the following probability of non selection for applicant i .

$$\Pr(h_i = 0) = e^{-n^{+'} \frac{A_i}{A'}}$$

For the Smallest group in the current survey, $A' = 17\,643$, $n^{+'} = 1000$ and $n' = 986$.

¹⁶ cf. Applicant panel Survey 2001 report: Annex III; Applicant panel Survey 2002 report: Section IV.1, Annex IV.

Now, for a Smallest group eligible applicant, it can be assumed that non selection for the Random group and non selection for the Smallest group are independent events. Therefore the probability of non selection in either sample is the product of the probabilities of the two independent events. Subtracting this from 1, we get the probability that applicant i is selected in at least one of the two samples.

$$\begin{aligned} \text{Pr (applicant } i \text{ is selected)} &= 1 - \left(e^{-n^+ \frac{A_i}{A}} \cdot e^{-n^{+'} \frac{A_i}{A'}} \right) \\ &= 1 - e^{-A_i \left(\frac{n^+}{A} + \frac{n^{+'}}{A'} \right)} \end{aligned}$$

The modified Q-index for a Smallest group eligible applicant is then

$$q_i = \frac{A_i}{1 - e^{-A_i \left(\frac{n^+}{A} + \frac{n^{+'}}{A'} \right)}}$$

Using these modified q_i weights, the Smallest group can be combined with the Random group, to give a Random & Smallest group, that adequately weights and fairly represents the information about future filings that is available for the smallest companies based in EPC.

The Smallest group can also be combined with the Random group within the context of extended structural weights. The concepts described above apply once again to this situation.

For an applicant in the Random group that made more than two filings in the previous year or who resides outside the EPC, the extended structural weight (SW) is as follows.

$$SW_{j,bl} = PopProb_{j,bl} \cdot \frac{1}{1 - e^{-n^+ \cdot A_j / A}} \cdot \frac{1}{SRSS_{j,bl}},$$

Here $PopProb_{j,bl}$ is the probability of existence in the population of applicants from resident bloc bl making A_j filings (base year, Euro-direct + Euro-PCT-RP filings), and $SRSS_{j,bl}$ is the sample response rate by size class in resident bloc bl .

The modified structural weight for Smallest group eligible applicants that appear in either the Random group or the Smallest group is defined as

$$SW_{j,bl} = PopProb_{j,bl} \cdot \frac{1}{1 - e^{-A_j \left(\frac{n^+}{A} + \frac{n^{+'}}{A'} \right)}} \cdot \frac{1}{SRSS_{j,bl}}.$$

Table 99 shows an excerpt of blocwise PopProb values for filing counts up to 40. The matrix becomes more sparse as filing counts increase further. This year, bloc-specific probabilities are used, whereas last year, the values of the “Total” column were used to calculate PopProb. It is immediately apparent, that the blocwise approach reflects significant differences in applicant structure by residence bloc.

count	EP	JP	OT	US	TOTAL
1	0.68599783	0.536917	0.754296	0.633866	0.6693333
2	0.1371272	0.136781	0.125614	0.14338	0.1372395
3	0.05458211	0.070432	0.039075	0.067162	0.0571336
4	0.02910012	0.041851	0.020458	0.034802	0.0304857
5	0.01716028	0.02722	0.011047	0.023914	0.0189454
6	0.01364553	0.022797	0.010434	0.015671	0.0144861
7	0.00878689	0.016672	0.007979	0.010583	0.0097835
8	0.00640926	0.015311	0.003478	0.009464	0.0075403
9	0.00496201	0.010548	0.003478	0.007836	0.0059728
10	0.00449682	0.010208	0.003682	0.00692	0.0054863
11	0.00315294	0.007145	0.001841	0.004172	0.0035675
12	0.00294619	0.006465	0.001841	0.003663	0.0032702
13	0.00201582	0.004423	0.000409	0.002849	0.0022162
14	0.00211919	0.006465	0.001227	0.002849	0.0025405
15	0.00180907	0.005444	0.001637	0.003562	0.0025405
16	0.00222257	0.002722	0.001432	0.001832	0.002054
17	0.00129219	0.004423	0.001227	0.001425	0.0015675
18	0.00129219	0.005104	0.000614	0.002239	0.0017567
19	0.00108544	0.002722	0.000409	0.001323	0.0011892
20	0.00067194	0.002722	0.000818	0.000814	0.0008919
21	0.00113713	0.001021	0.000409	0.000814	0.0009459
22	0.000827	0.001701		0.001628	0.001
23	0.00087869	0.002042		0.001221	0.0009459
24	0.000827	0.003403		0.001323	0.001054
25	0.00056856	0.002382		0.000814	0.0007027
26	0.00056856	0.001021	0.000205	0.000916	0.0006486
27	0.00036181	0.003062		0.000509	0.0005676
28	0.00046519	0.001701		0.000814	0.0005946
29	0.00046519	0.000681	0.000614	0.000204	0.0004324
30	0.00051688	0.001701	0.000614	0.000305	0.0005676
31	0.00046519		0.000205	0.000102	0.0002973
32	0.00056856	0.001361		0.000712	0.0005946
33	0.00031013	0.001021	0.000409	0.000611	0.0004594
34	0.0004135	0.00034		0.000102	0.0002703
35	0.00020675	0.001701	0.000205	0.000611	0.0004324
36	0.0004135	0.001361		0.000611	0.0004865
37	0.00020675	0.001701		0.000204	0.0002973
38	0.00015506			0.000204	0.0001351
39	0.00025844	0.001361			0.0002432
40	0.00020675	0.000681		0.000102	0.0001892

Table 99: Blocwise probabilities of existence (PopProb) of specific filing counts for counts up to 40

Table 100 shows blocwise sample response rate (SRSS) values based on filing count class. Filing count classes are defined by a range of filing counts from lower bound ("lb") to upper bound ("ub"). This year, bloc-specific SRSS values were used, whereas last year, the values of the "Total" column were used to calculate SRSS. Even more so than for the PopProb values, there are pronounced differences between blocs.

class	lb	ub	EP	JP	OT	US	TOTAL
1	1	1	0.3282	0.2667	0.1951	0.1802	0.26763485
2	2	2	0.3838	0.7059	0.16	0.25	0.33971292
3	3	3	0.5	0.5	0.3077	0.2683	0.40625
4	4	5	0.4571	0.3846	0.2727	0.2273	0.3557047
5	6	9	0.4722	0.72	0.2222	0.193	0.38953488
6	10	19	0.4414	0.675	0.1111	0.2059	0.39240506
7	20	39	0.425	0.6364	0.5	0.3519	0.44508671
8	40	9999999	0.48	0.7284	0.4167	0.4198	0.52508361

Table 100: Blocwise SRSS values of the Random sample by filing count class.

17 Annex VIII: Estimating Birth & Death effects in the applicant population

At first sight, the results tables for forecasts of total filings in this report are a little disappointing, because not quite enough growth is forecasted in total filings from 2006 to 2007. The situation was worse than this in the 2006 survey, with lower current totals forecasted for 2006 than in base year 2005 according to several of the methods. Therefore a birth-death related correction factor was developed and explained in the "Commentary by the European Patent Office" at the beginning of the 2006 report. In this section, an explanation is given of how such correction factors can be used more generally.

In the EPO introduction to the 2006 Applicant Panel Survey report, the correction factor was based only on a comparison of the populations for 2004 and 2005. Here we will seek to generalise the approach by studying filings from 1999 to 2006. It should be emphasised that this is based on a complete census of the database, not a sample survey.

Correction factors (CFs) can be calculated, and a proposal is made below for taking CFs from previous years to apply to the forecasted years 2007 - 2009 in the current survey. The method is developed firstly for total filings (Euro-direct + Euro-PCT-RP), then further below for Euro-PCT-RP and Euro-direct filings considered separately.

The following table describes the carryover of all applicants (filers) for total filings from each year to all others considered in the period.

Recurrent applicants

Filers in		Also filed in							
		1999	2000	2001	2002	2003	2004	2005	2006
Filers in	1999	27 312	9 374	8 895	7 913	7 444	6 997	6 312	5 723
	2000	9 374	29 600	10 206	9 106	8 593	7 896	7 142	6 522
	2001	8 895	10 206	31 344	10 396	9 810	9 038	8 080	7 373
	2002	7 913	9 106	10 396	31 137	10 905	10 114	9 047	8 178
	2003	7 444	8 593	9 810	10 905	32 790	11 667	10 395	9 384
	2004	6 997	7 896	9 038	10 114	11 667	33 714	11 876	10 711
	2005	6 312	7 142	8 080	9 047	10 395	11 876	34 838	12 230
	2006	5 723	6 522	7 373	8 178	9 384	10 711	12 230	37 073

The information can be re-expressed as the percentages of applicants that re-file or pre-file, as compared to each reference year of original filings.

Percentage carryover of filers

Filers in		Probability that they also filed in							
		1999	2000	2001	2002	2003	2004	2005	2006
Filers in	1999	100%	34%	33%	29%	27%	26%	23%	21%
	2000	32%	100%	34%	31%	29%	27%	24%	22%
	2001	28%	33%	100%	33%	31%	29%	26%	24%
	2002	25%	29%	33%	100%	35%	32%	29%	26%
	2003	23%	26%	30%	33%	100%	36%	32%	29%
	2004	21%	23%	27%	30%	35%	100%	35%	32%
	2005	18%	21%	23%	26%	30%	34%	100%	35%
	2006	15%	18%	20%	22%	25%	29%	33%	100%

The probability that an applicant also files one year ahead is quite stable at about 35%. Two years ahead is about 32% and three years is 29%. Looking backwards, the probabilities are only slightly lower. The probability that an applicant filed one year earlier is about 33%, two years earlier 29 or 30%, three years earlier about 26%.

A similar table can be made to show the numbers of filings that were made in each case by the re-filers and pre-filers.

Recurrent applications

		Also filed in							
		1999	2000	2001	2002	2003	2004	2005	2006
Filings in	1999	89 560	67 022	65 470	62 804	61 160	58 525	55 972	53 212
	2000	74 738	100 902	76 631	73 326	71 478	68 294	65 488	62 726
	2001	78 556	82 703	110 313	83 305	81 250	77 911	74 323	71 565
	2002	71 567	75 290	79 540	106 490	80 741	77 828	74 397	71 030
	2003	75 813	79 397	83 807	87 939	117 104	89 926	86 180	82 249
	2004	76 983	80 851	85 348	89 140	94 845	124 088	95 986	91 656
	2005	74 790	79 382	83 418	86 622	92 113	97 586	129 024	99 388
	2006	68 505	74 425	77 476	80 773	85 744	91 383	100 939	135 811

The following table shows the numbers of filings that are made by applicants in the test year who did not file in the base year.

Non recurrent applications

		Did not file in							
		1999	2000	2001	2002	2003	2004	2005	2006
Filings in	1999	0	22 538	24 090	26 756	28 400	31 035	33 588	36 348
	2000	26 164	0	24 271	27 576	29 424	32 608	35 414	38 176
	2001	31 757	27 610	0	27 008	29 063	32 402	35 990	38 748
	2002	34 923	31 200	26 950	0	25 749	28 662	32 093	35 460
	2003	41 291	37 707	33 297	29 165	0	27 178	30 924	34 855
	2004	47 105	43 237	38 740	34 948	29 243	0	28 102	32 432
	2005	54 234	49 642	45 606	42 402	36 911	31 438	0	29 636
	2006	67 306	61 386	58 335	55 038	50 067	44 428	34 872	0

A panel survey that is carried out in a particular year monitors the intended future behaviour of applicants that already filed in the base year (one year before the survey year). Therefore it speaks for re-filers only from the base year.

A correction factor (CF) for a future year is given as

$$CF = \begin{aligned} & \# \text{ applications year } i+j \text{ from applicants that did not file in year } i \\ & - \# \text{ applications year } i \text{ from applicants that did not file in year } i+j \end{aligned}$$

For example, a CF for 2000 considered one year ahead from 1999 is given from the above table as $26\,164 - 22\,538 = 3\,626$.

The CFs get larger as we move further into the future from any of the base years (I.E. as j gets larger). A table is shown below of CFs that have been calculated in this way. Multipliers show the ratios of a CF to the one calculated for the previous year.

Raw correction factors to filings:

		#filings	multiplier
<u>Base year</u>	<u>1999</u>	0	
	2000	3 626	1
	2001	7 667	2.1
	2002	8 167	1.1
	2003	12 891	1.6
	2004	16 070	1.2
	2005	20 646	1.3
	2006	30 958	1.5

		#filings	multiplier
<u>Base year</u>	<u>2000</u>	0	
	2001	3 339	1
	2002	3 624	1.1
	2003	8 283	2.3
	2004	10 629	1.3
	2005	14 228	1.3
	2006	23 210	1.4

Raw correction factors to filings:

		#filings	multiplier
<u>Base year</u>	<u>2001</u>	0	
	2002	-58	1
	2003	4 234	-73.0
	2004	6 338	1.5
	2005	9 616	1.5
	2006	19 587	2.0

		#filings	multiplier
<u>Base year</u>	<u>2002</u>	0	
	2003	3 416	1.0
	2004	6 286	1.8
	2005	10 309	1.6
	2006	19 578	1.9

Raw correction factors to filings:

		#filings	multiplier
<u>Base year</u>	<u>2003</u>	0	
	2004	2 065	1.0
	2005	5 987	2.9
	2006	15 212	2.5

		#filings	multiplier
<u>Base year</u>	<u>2004</u>	0	
	2005	3 336	1.0
	2006	11 996	3.6

Raw correction factors to filings:

		#filings	multiplier
<u>Base year</u>	<u>2005</u>	0	
	2006	5 236	1.0

Colour key
2003 report
2004 report
2005 report
2006 report
2007 report

Generally speaking, the CFs are positive. The only exception is with base year 2001, where the one year ahead CF is slightly negative (-58). But there was a major disruption to patenting after the collapse of the dot-com bubble and the number of total filings also declined slightly in 2002.

In principle these correction factors can be used to augment the filings forecasts from a survey. However, a problem is that the future CF values are not yet known when a survey is run. Therefore it is suggested that CFs should be used retrospectively. The most recently available 1 year ahead CF is taken as the 1 year CF for future projection, the most recently available 2 year ahead CF is taken as the 2 year CF for future projection, etc. This procedure is illustrated in the above table by colour coding for CFs that could have been used in the survey reports from 2003 to 2007 inclusive. The resulting set of CFs are collected in the following table.

Applicant Panel correction factors

Survey Year	Base Year	Correction factors for Total filings (Euro-direct+Euro-PCT-RP)		
		Survey Year	Survey Year + 1	Survey Year + 2
2003	2002	-58	3 624	8 167
2004	2003	3 416	4 234	8 283
2005	2004	2 065	6 286	6 338
2006	2005	3 336	5 987	10 309
2007	2006	5 236	11 996	15 212

The proposed CF values for the 2006 survey have changed slightly from those given in the introduction to the 2006 report, due to maturation of the database. The CF values for the 2007 survey are +5 236 for 2007, +11 996 for 2008 and +15 212 for 2009. On the one hand the CFs are basically conservative, since counts of Euro-direct + Euro-PCT-RP filings are being used to correct for forecasts of total filings Euro-direct + PCT-IP, which is a larger figure. On the other hand, the assumption that corrections from the past can be projected to the future depends on a continuation of existing trends. Also, as mentioned above in connection with the 2006 survey, CF values can meander to a certain extent as the database matures. These factors all indicate that CFs should be used with a degree of caution when applying them to the results of a survey.

It is possible to calculate analogous CFs that are based on alternative or subsidiary counts. The following tables show tables for Euro-direct filings and for Euro-PCT-RP filings, considered separately from each other. Then appears a table of discrepancies between the sums of the correction factors for Euro-direct and Euro-PCT-RPs individually and total filings Euro-direct + Euro-PCT-RP (from the table above). The sum of births and deaths for Euro-direct or Euro-PCT-RP considered alone are generally greater than those for the combination, but it can be seen in the table that the differences are not large. The discrepancy can be explained because, for example, a particular applicant may apply only via Euro-direct filings in one year and then only via Euro-PCT-RP filings in the following year. In this case, a death is recorded in the Euro-direct table, a birth is recorded in the Euro-PCT-RP table, but no change in the table for total filings.¹⁷ The reverse applies when numbers of applicants are declining, as can be seen for the correction of +432 to the one year ahead CF for base year 2002.

¹⁷ Similar non-additivity effects can be seen for the applicant samples in the 2007 survey in Annex IX.

Applicant Panel correction factors

Survey Year	Base Year	Correction factors for Euro-direct filings		
		Survey Year	Survey Year + 1	Survey Year + 2
2003	2002	-1 231	-117	963
2004	2003	1 318	496	1 474
2005	2004	1 157	2 517	990
2006	2005	2 800	4 406	5 891
2007	2006	2 095	7 167	9 229

Applicant Panel correction factors

Survey Year	Base Year	Correction factors for Euro-PCT-RP filings		
		Survey Year	Survey Year + 1	Survey Year + 2
2003	2002	741	4 036	7 235
2004	2003	2 881	3 922	7 945
2005	2004	1 296	4 874	5 605
2006	2005	527	2 018	5 810
2007	2006	4 281	5 544	7 201

Applicant Panel correction factors

Survey Year	Base Year	Difference Total - (ED+PCT-RP)		
		Survey Year	Survey Year + 1	Survey Year + 2
2003	2002	432	-295	-31
2004	2003	-783	-184	-1 136
2005	2004	-388	-1 105	-257
2006	2005	9	-437	-1 392
2007	2006	-1 140	-715	-1 218

18 Annex IX: Sizes of Populations and Samples for the 2007 EPO Applicant Panel Survey

	Euro-applications in 2006				Euro-applicants in 2006			
	Direct	PCT IP	Total (Direct + PCT IP)	PCT RP	Direct	PCT IP	Total (Direct + PCT IP)	PCT RP
1. Population in 2006*	61 119	149 227	210 346	74 302	16 700	44 663	56 896	24 014
Sample group A: Biggest								
2. Number asked* as percentage of 1.	18 179 29.7%	20 204 13.5%	38 383 18.2%	20 812 28.0%	388 2.3%	358 0.8%	411 0.7%	367 1.5%
Number of quantitative responses (questionnaires) as percentage of 1. as percentage of 2.	18 827 30.8% 103.6%	32 459 21.8% 160.7%	51 286 24.4% 133.6%	14 053 18.9% 67.5%	193 1.2% 49.7%	201 0.5% 56.1%	213 0.4% 51.8%	179 0.7% 48.8%
Sample group B: Random								
3. Number asked* as percentage of 1.	19 258 31.5%	23 597 15.8%	42 855 20.4%	23 692 31.9%	1 079 6.5%	974 2.2%	1 416 2.5%	1 355 5.6%
Number of quantitative responses (questionnaires) as percentage of 1. as percentage of 3.	20 778 34.0% 107.9%	38 699 25.9% 164.0%	59 477 28.3% 138.8%	16 733 22.5% 70.6%	500 3.0% 46.3%	503 1.1% 51.6%	629 1.1% 44.4%	481 2.0% 35.5%
Sample group C: Smallest								
3. Number asked* as percentage of 1.	540 0.9%	281 0.2%	821 0.4%	407 0.5%	343 2.1%	114 0.3%	406 0.7%	311 1.3%
Number of quantitative responses (questionnaires) as percentage of 1. as percentage of 3.	640 1.0% 118.5%	538 0.4% 191.5%	1 178 0.6% 143.5%	300 0.4% 73.7%	138 0.8% 40.2%	90 0.2% 78.9%	172 0.3% 42.4%	99 0.4% 31.8%

* From the EPO database (EPASYS), status January 2008.

Other numbers are based on figures given by the respondents. Questionnaire responses often account for more filings than are ascribed to the same applicants in the database.



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