

PATENT FILINGS SURVEY 2011

INTENTIONS OF APPLICANTS REGARDING PATENT APPLICATIONS AT THE EUROPEAN PATENT OFFICE AND OTHER OFFICES

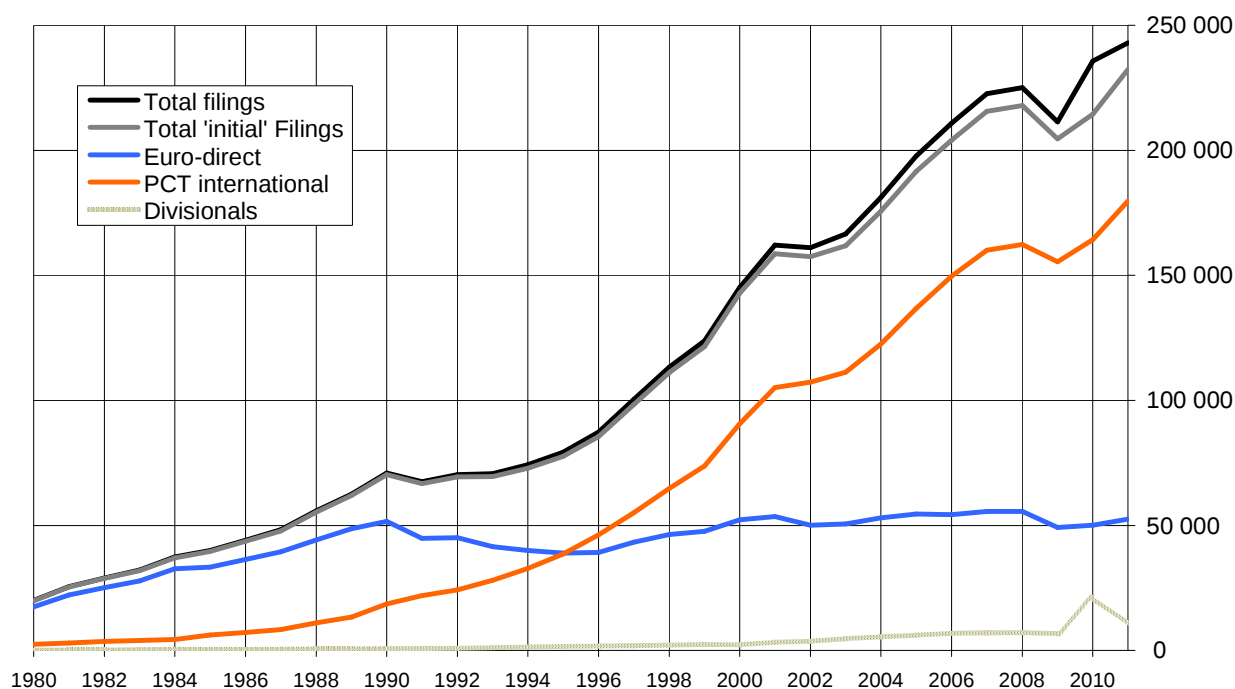
Munich, April 2012

Commentary by the European Patent Office

Each year, the EPO carries out a survey of filing intentions of applicants for European patents. This report concerns the survey that was done in the summer of 2011 by the market research firm Synovate (now Ipsos). The main use that is made of the survey at EPO is to provide information on probable filing developments for the annual forecasting exercise for budgetary planning purposes. Applicants were approached for a Biggest group of about 400 largest clients and a Random group of about 2 700 from the general population with a random sampling method that preferentially selected larger applicants. The fieldwork period was from early May to mid-September 2011 and resulted in 782 responses.

The report highlights key findings, with details appearing in annexes. The main forecast items are the numbers of direct European route filings (Euro-direct), PCT international phase filings (PCT-IP), which are together referred to as Total filings, and Euro-PCT regional phase filings (Euro-PCT-RP). An assessment is made of current results in comparison with those from previous surveys. The annexes describe the survey setup; fieldwork experiences and response rates; a collection of comments from participants; analytical methodology; forecasts broken down by technical areas, for worldwide first filings and at other offices; and a description of respondent profiles. Then follow analyses of questions on R&D budgets, sales and numbers of inventions and inventive staff per applicant company. Analyses are then provided of special questions from the current survey on time limits for divisional filings, attitudes towards the prospective European Unitary Patent, and information about patent portfolios. The remaining annexes report on methodological experiments and the sizes of the population and the samples.

Total European patent filings (Euro-direct + PCT international phase)



After a drop in the number of total filings in 2009, under the influence of the global recession, there was an increase in 2010 and again in 2011. The strength of the increase in 2011 was unexpected, because the effect of a boost in terms of divisional filings in 2010, which was due to a rule change and is shown in the above diagram, was reduced in 2011. For the same reasons as explained last year, the forecasts in this report do not include divisional filings.

The survey asked about numbers of filings achieved in the base year (2010) and intentions for the following three calendar years (2011, 2012 and 2013). The forecasts that are identified as being most appropriate are given in Table 14. The results are analysed under various breakdowns, in particular according to the different types of filings and by four blocs of residence for the applicants (EPC, Japan, USA, Others). Analysis with breakdowns by technical areas is also given in terms of five EPO mega clusters (groups of joint clusters).

Most scenarios predict positive growth in Total filings from 2010 to 2011, but no scenario was as positive as the rise actually observed, which was mainly driven by an increase in PCT-IP filings from Japan and other parts of Asia. It should be noted however that some PCT-IP filings among Total filings do not appear later on as workload for the EPO, and this may be especially the case for PCT-IP filings from Asia, where on average applicants may be more interested in protection for their home markets than in Europe.

The favoured scenario from the Random group includes a 5.4% growth from 2010 to 2011, while the growth actually observed was 8.0%. This scenario involves a technical process called winsorisation that does not usually perform best in the comparisons. Indeed, for Euro-PCT-RP forecasts, there is no particular advantage found in using winsorisation this time. It seems to have been a year of some uncertainty among the respondents, which is reflected in large widths of the confidence intervals for the total filings forecasts. The increased widths in 2011 can only be partly explained by a slightly smaller achieved sample size compared to the previous survey. This uncertainty should be seen against the context of a difficult year for the world economy, particularly due to a sovereign debt crisis in Europe that became more apparent during the summer. Tables 17 to 19 indicate that, from 1 August 2011 onwards, European applicants on the whole may have become less optimistic towards their future filings. But the applicants based in other parts of the world may have become more optimistic in this period, presumably due to a background of economic recovery outside Europe.

The forecasts from the Biggest group are in the middle of the range of forecasts obtained under the various scenarios for the Random group. This is unusual in that the Biggest group is usually more conservative than the Random group. The recommended forecasts are shown in the short executive summary following this commentary. But Annex IX argues the case for also adding in correction factors to cope with the uneven balance of new applicants that appear in the population against former applicants leaving the population. The resulting corrected forecasts for Total filings are given in **Section 2**, and represent year-to-year growth rates of 6.0% from 2010 to 2011 (vs +8.0% actual), 6.5% from 2011 to 2012, and 5.1% from 2012 to 2013, all excluding divisionals.

Due to the perception of a deteriorating economic situation in late 2011, Ipsos carried out a small-scale follow-up telephone survey regarding intentions for EPO filings in January 2012¹. To a question on the effect of the current European sovereign debt crisis on the numbers of EPO filings to be made in 2012, negative corrections to the previous estimates of EPO filings in 2012 were made by 11 out of the 63 applicants that responded.

A comparative analysis can be made between the original survey and the follow-up using the respondents of the new survey only, for growth rate estimates of Total filings. The raw growth estimates (Q Index and Composite Index) appear with equivalent results from the Random group of the main survey in the following tables. Separate tables are given for applicants that originally replied before 1 August 2011 vs. on-or-after 1 August.

Respondents before 1st August 2011 in Summer 2011 survey

Survey:	Summer 2011			January 2012	
Growth from 2010 to Year:	2011	2012	2013	2011	2012
# observations (n)	28	27	25	28	27
Q index (weighted average of log growth indices per respondent)	<u>1.003</u>	<u>1.035</u>	<u>1.018</u>	0.938	0.976
Standard Error	0.200	0.209	0.206	0.263	0.150
Composite index (arithmetic)	1.042	1.083	1.103	1.016	1.032

Respondents from 1st August 2011 in Summer 2011 survey

Survey:	Summer 2011			January 2012	
Growth from 2010 to Year:	2011	2012	2013	2011	2012
# observations (n)	36	35	33	35	35
Q index (weighted average of log growth indices per respondent)	<u>1.060</u>	<u>1.147</u>	<u>1.222</u>	1.045	1.136
Standard Error	0.178	0.186	0.147	0.176	0.148
Composite index (arithmetic)	1.059	1.142	1.235	1.060	1.135

The overall growth rates from 2010 to 2011 and 2012 are lower in the follow-up survey than in the summer survey. However, the extent of this drop is lower in the late group than in the early group. Composite indices are not too far away from Q indices. The results are consistent with a notion that the late group gave reasonably consistent estimates of filings growth in the main survey and in the follow-up survey, while the early group over-reported to some extent in the summer of 2011 compared to what they thought later in January 2012.

It should be borne in mind that the size of the follow-up survey is small and it is hard to make definitive quantitative corrections of the main survey results from it. It seems that the average applicant in the randomly selected subset for the follow-up survey was more optimistic last summer than the average respondent in the whole survey. When early and late groups are combined, the follow-up group gave a Q Index growth from 2010 to 2011 of 1.03 (S.E. 0.13); while the comparable scenario for the whole survey gave a Q Index

¹ Similar follow-up surveys were carried out for the 2008 and 2010 surveys.

growth rate of 0.96 (S.E. 0.03). Thus the apparent drop in optimism in the follow-up survey may be due more to excessive optimism of this particular group in the original survey, rather than to a general malaise at the beginning of 2012. Therefore, we believe that it is probably better not to adjust forecasts for the main survey downwards as a result of the follow-up survey. A message that can be taken on board is that patenting at EPO is certainly not immune to downward steps in the case of further macroeconomic shocks.

An experiment is made in Annex V to map the responses of EPO applicants in terms of their worldwide first filings onto growth of worldwide first filings as a whole out to 2013. Due to the Paris Convention system that a subsequent filing can be made to virtually any Office within one year, it is interesting to get a hold of forecasts for first filings, which are the essential drivers of the later subsequent filings. This approach holds out the possibility to try to forecast EPO filings one year further out with the data in hand (to 2014, in this case). But more work will be needed before implementing this.

A description is presented in Annexes VI and VII of R&D expenditures and other economic factors of the applicant population in 2010. For the key ratio of R&D expenditures to numbers of worldwide first patent filings, the median was € 261 000 in 2010 (see Tables 64, 66 and 68). Although this is subject to some statistical error, it is interesting that this has reduced slightly from the € 276 000 in 2009 estimated in the previous survey. There was an increase in patenting by companies as they emerged from the 2009 recession, while the R&D expenditure levels by those same companies presumably remained more stable. In the same tables, there are findings on proportions of inventive staff per company according to age and gender breakdowns. Using weighted medians as estimates, the proportion of inventive staff under the age of 40 is 50% and the proportion of female inventive staff is only 3%. The weighted mean for the ratio of female staff is at a higher level of 13%, however, which suggests that some companies have higher proportions of inventive female staff than the weighted median indicates. The highest proportions of inventive staff under the age of 40 are in the ICT mega cluster at 64% (see Table 68).

In Annex VIII, there are analyses of responses to questions about divisional filings, the proposed forthcoming European Unitary Patent and patent portfolios. The rule change in 2010 does not seem to be affecting the proportion of divisionals that will be filed very much. Most respondents are in favour of the Unitary Patent, although several verbal comments recommend the establishment of a European Patent court system in parallel. Regarding patent portfolios, it is interesting to see in Table 84 an overall weighted mean estimate of 13.9 years for the duration of an average/typical EPO patent in the patent portfolio, not much shorter than the estimate of 14.8 years for the duration of an average/typical patent in general.

There are variations from year to year in the statistics given to estimate economic parameters of companies. Although there may be some underlying changes over time, these are usually gradual and most of the differences of averages between years are due to sampling errors. We hope that a more general method to quote standard errors and confidence limits for estimated quantities in future surveys can be developed which can be used for all such estimates in a similar way to the standard errors currently reported in Annex VII. We also believe that there should be more usage of weighted medians because they show less sensitivity to outliers than weighted means.

Useful filings forecast results have been obtained from this survey. Also some of the economic results are about items that we believe have not been properly measured before. We are very grateful to the respondents for providing the data to allow for the various estimations. Please participate in this survey in case you are approached with a request to do so in future. We also hope that the respondents in future surveys will strive to fill in all the requested fields of the questionnaire.

We will be very happy to receive your feedback on any of the issues that are covered in this report. For this, you can send us an e-mail to the address below.

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EXECUTIVE SUMMARY

Based on the findings of this survey, the number of total filings (excluding divisional filings) at the European Patent Office for 2011 are forecast to grow strongly by +5.4% versus 2010 filings, resulting in an expected number of 226 027 filings.

For 2012, 239 711 total filings are expected (+11.8% versus 2010) and for 2013, the survey predicts 249 925 filings (+16.6% versus 2010).

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1 Introduction

1.1 Background and objectives

Since 1996, the European Patent Office (EPO) has carried out the annual "Patent Filings" (formerly "Future Filings" and "Applicant Panel") survey among a group of its patent applicants. Applicants are surveyed with the main objective of predicting the number of patent filings for the base year and the following two years. 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.

In 2011, the sixteenth in the series of surveys took place. The interviews and data collection were undertaken by Synovate (now Ipsos), providing the EPO with the benefit of joint experience previously gained in similar surveys from 2001 to 2010. For the eighth year in succession, Synovate was also in charge of the data analysis and interpretation in 2011.

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). The latter breakdown may be of special interest when assessing the impact of varying economic environments around the globe. 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. Data were collected on the basis of 14 joint clusters, corresponding to the structure in which the EPO has organised its search, examination and opposition departments, and then amalgamated into five rather more meaningful "mega clusters". The opportunity was also taken to ask for information on other characteristics of patenting firms and their views on aspects of the patenting procedure in Europe.

1.2 Content and structure of this report

The survey involves establishing forecasts from basic filing types and residence blocs of the applicants. The basic filings types at the EPO are first and subsequent filings, each of which can be either Euro-direct or PCT international phase filings (PCT-IP). The PCT-IP applications can later on become 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 latter of which also originate as PCT-IP applications.

Section 1.3 outlines the characteristics of this year's survey and sample groups. **Section 2** provides high-level summaries of the predicted counts of total filings and growth rates for 2011, 2012 and 2013 based on the recommended forecasting method. **Section 3** summarises forecasts (for Euro-direct and PCT-IP filings) based on two sample groups using the different forecasting methods, and puts the report into perspective by comparing

² European Patent Convention (EPC) contracting states, considered here as at April 2011 with 38 members.

results with those from previous surveys dating back to 2003. **Section 4** begins by describing the statistical methodologies employed for forecasting growth, and then provides forecast results (for Euro-direct and PCT-IP filings) for both sample groups with the breakdown scenarios employed. **Section 5** focuses on forecasts for PCT applications entering the regional filing phase (Euro-PCT-RP). The main part of the report wraps up with conclusions and an outlook in **Section 6**.

Annex I describes the survey fieldwork methodology as well as this year's questionnaire, and details the data validation procedures that were employed. **Annex II** reports on the comments to the survey received from respondents. **Annex III** contains details of the analytical methodology employed. **Annex IV** reports on forecasting results broken down by mega cluster. **Annex V** provides forecasts for applications at other national patent offices (national filings including worldwide first filings and national phase PCT filings). **Annex VI** provides summary statistics and a profile of respondents based on economic characteristics of the responding individuals or institutions. **Annex VII** analyses economic characteristics of EPO applicants in 2010, including R&D budgets, inventions, first filings, sales, numbers of employees (all and inventive), and some ratios that are based on these figures. **Annex VIII** reports on the applicants' assessment of the rule change regarding divisional filings, the Unitary Patent and patent portfolios. **Annex IX** gives details on the estimation of birth/death effects which can be used to deal with structural shortfalls of this empirical survey. **Annex X** reports forecasting results with an alternative weighting scheme using respondent-provided filing totals to calculate sampling weights. Finally, **Annex XI** reports on population sizes and sample sizes underlying the 2011 survey.

1.3 The 2011 survey

The survey design was to a large extent similar to that of the previous years, using overlapping Biggest and Random groups of selected applicants. Sampling for both target groups was based on semi-harmonised applicant names rather than applicant codes, in case the codes had caused multiple occurrences for some entities, and the main results for EPO filings were calculated on counts excluding divisional applications.

The total number of applicants involved was 2 738, with most of the Biggest group also appearing in the Random group³. The survey covered applicants for about 29% of the applications at the EPO (Euro-direct and PCT-IP filing numbers of Random sample relating to population, see **Annex XI**).

The survey was carried out via telephone and mail interviews with pre-established contact persons. Questionnaires were sent out from the beginning of May 2011, with interviews being completed by mid-September. Out of consideration for the tsunami and subsequent nuclear disaster that happened in Japan in early 2011, this phase started later there (end of May 2011). In total, 782 interviews were completed in 2011.

In the first stage, valid addresses were found for 2 568 applicants. Contacts were established for 2 114 applicants. The overall response rate in terms of the numbers of valid

³ This total includes 24 additional addresses that were specifically requested by EPO joint cluster managers.

addresses was 30.4% (782 out of 2 568), lower than in the previous 2010 survey (35.0% or 804 out of 2 300) for the comparable groups.

The EPO provided two **gross samples** of applicants drawn from the EPO database of applications (EPASYS) in early 2011.⁴

- "Biggest": This sample comprises the 415 largest applicants and was designed to allow for separate analysis of the intentions of the biggest applicants.
- "Random": This sample includes 2 671 applicants and was 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.

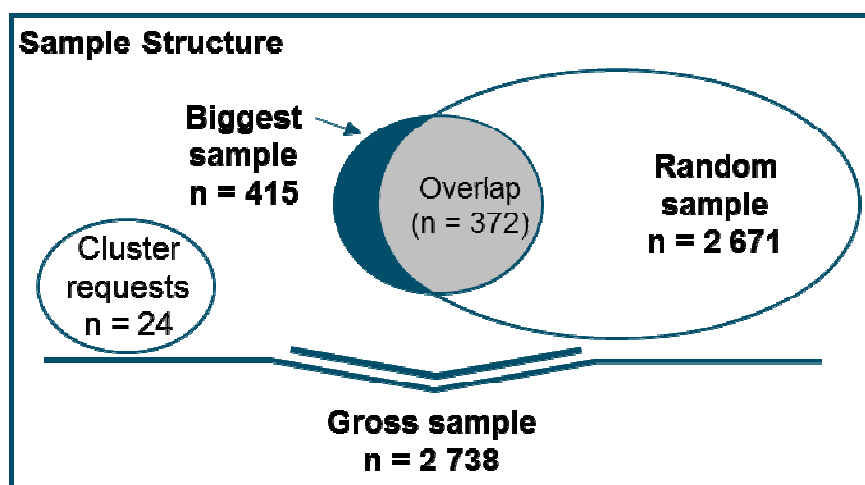


Figure 1: Sample structure of this year's survey

These samples were drawn separately, although the Random and Biggest groups contain an overlap of 372 large applicants that are part of both groups. The EPO also added another 24 deliberately selected addresses that are of special interest. Without double counting caused by the overlap, the gross sample included a total of 2 738 applicant addresses. Both samples should adequately represent the three regions, Europe, the US, and Japan. Other countries comprise a residual group for the rest of the world. The sampling scheme for the Random group should give Other countries an adequate representation in terms of their numbers of patent applications to the EPO, except perhaps where there has been fast growth in PCT-IP filings from a low level in the most recent years.

The questionnaire used for data collection was broadly similar to the one used in 2010 (see **Annex I**). It contained a full matrix of questions on patent filings and expectations for patent filings for the coming three years, in this case for 2011, 2012, and 2013, itemised by

⁴ The sampling procedures were done on database counts for Euro-direct and Euro-PCT regional phase filings only (PCT-IP filings were ignored for the sampling due to a lack of timeliness).

first and subsequent filings, not only at the EPO but also at other main worldwide patent offices.⁵ Apart from the main questions on predicting numbers of patent filings, questions were asked to elicit information on economic characteristics of applicants, including R&D expenditures and first 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 worldwide sales as well as number of staff that were involved in making inventions. New questions were included on: inventive staff younger than 40 years or female; evaluation of divisional filings and perceptions toward the proposed Unitary Patent system in Europe; and further assessment of the company's patent portfolio.

For details on parent population, target persons, questionnaire topics, data collection procedure, and response statistics, refer also to **Annex I**.

⁵ 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 had shown that some interviewees had difficulties calculating growth rates from a single base year. However, for this report we adopt the convention of indicating growth rates with respect to the base year (in this case 2010).

In addition, respondents were asked to always complete the whole row of the matrix with any patenting activity, i.e. for filings types and years with no activity to fill in a zero rather than leave the cell blank. This should result in a higher base of useful answers to calculate growth rates.

This year, applicants were also asked whether they were able to provide all the filing information asked for in the upper matrix of Section B of the questionnaire.

2 Forecast of future patent filings at EPO

All actual and estimated filing totals refer to filings excluding divisional filings. Divisional filings normally make up only a small proportion of Total filings, although they have been on a steady rise over the past decade and a rule change led to a surplus of divisional filings in 2010⁶. The survey question on filings at EPO specifically excludes divisional filings in the counts, so it was decided to exclude divisional filings from all the actual and predicted filing counts. As a consequence, whenever this report refers to filings or total filings, the counts excluding divisional filings are meant. It should be noted that, while this procedure ensures that all filing numbers contained are consistent (in the sense that they exclude divisional filings), it also means that filing numbers cannot easily be compared to filing numbers stated in reports of this survey prior to 2010.

Based on the recommended forecast method explained in **Section 3**, the estimated growth rates (with respect to 2010) for Total filings excluding divisional filings were calculated as **5.4% for 2011, 11.8% for 2012, and 16.6% for 2013**. The **overall survey forecast** for total filings excluding divisionals **in 2011 is 226 027**, with approximate 95% confidence limits of **212 517 to 239 536**, resulting in a deviation of 6.0%⁷. This forecast agrees reasonably well with the current assumed figure of 231 578 for actual 2011 filings excluding divisionals, and this number is well within the 95% confidence limit of the forecast. The estimated percentage of PCT-IP filings amongst total filings for 2011 is 78.0%, compared to an actual value of 77.6%. **For 2012**, the recommended forecast method predicts **239 711** total filings with approximate 95% confidence limits of **223 930 and 255 492**. **For 2013**, the recommended method estimates **249 925** total filings with approximate 95% confidence limits of **232 328 and 267 522**.

When correcting for birth and death effects as explained in **Annex IX**, this year's recommended forecast for total filings in 2011 increases to **227 355**. For **2012**, the recommended forecast method employing correction factors predicts **242 167** total filings and **254 631** total filings for **2013**.

Contrary to previous years, estimates for the Biggest group are not generally any more conservative than some of those based on the Random group. In terms of Total filings, estimates based on the Biggest group are generally within the range of estimates calculated on the basis of the Random group.

In summary, this year's survey predicts strong growth in filing totals for all years under review. The recommended forecast anticipates double-digit percentage growth in 2012 when compared to 2010, and all but one forecast predict double-digit percentage growth in 2013 compared to 2010. However, it should be noted, that this year's forecasts show higher deviations and also higher variance between forecast methods, when compared to

⁶ See the *Commentary by the European Patent Office* of the 2010 Future Filings Survey for further details.

⁷ The term deviation refers to the distance from the forecast filings number to the lower 95% confidence limit of the forecast as a percentage of the forecast filings number.

earlier survey years. Also this year, there is some indication of a change in applicant sentiment during the fieldwork phase of the survey.

As in previous years, it was also possible to analyse the questions on PCT filings entering the regional phase at the EPO (Euro-PCT-RP). For the Biggest group, growth rates (compared with 2010) can be estimated at 0.0% in 2011, 14.5% in 2012, and 18.0% in 2013. For the Random group, growth rates can be estimated at 0.2% in 2011, 7.0% in 2012, and 6.7% in 2013. For Euro-PCT-RP filings this year, two and three-year growth estimates based on the Biggest group are more positive than the recommended forecast based on the Random group.

3 Summary of forecasts and comparison with previous patent filings surveys

3.1 Summary of this year's forecasts

This report presents and discusses a variety of different forecasting approaches. Overviews of the main results presented in **Section 4** are summarised in **Table 1** with respect to growth rates and in **Table 2** for the resulting predicted filing numbers.

Comparison of forecasts: Growth from 2010
Euro-direct and PCT-IP

			Year					
			2011		2012		2013	
Qualifying comments	Group	Breakdown	Growth rate	Deviation*	Growth rate	Deviation*	Growth rate	Deviation*
Included	Biggest	None	3.1%		8.7%		13.7%	
Included	Biggest	Residence bloc	3.8%		8.9%		13.4%	
Included	Random	None	0.6%	5.5%	7.3%	6.1%	10.6%	6.4%
Included	Random	None (winsorized)	1.5%	3.8%	8.5%	3.9%	12.2%	4.2%
Included	Random	None (Euro-direct and PCT-IP filings combined)	-1.3%	5.2%	5.7%	4.7%	8.8%	5.3%
Included	Random	Residence bloc	6.7%	7.9%	14.6%	10.7%	20.0%	12.2%
Included	Random	Residence bloc (winsorized)	5.4%	6.0%	11.8%	6.6%	16.6%	7.0%
Included	Random	Residence bloc (ED and PCT-IP filings combined)	1.8%	8.9%	11.2%	10.8%	16.9%	12.3%
Excluded	Biggest	None	3.1%		8.7%		13.8%	
Excluded	Biggest	Residence bloc	3.7%		8.9%		13.4%	
Excluded	Random	None	-1.4%	5.6%	5.2%	6.1%	8.3%	6.4%
Excluded	Random	None (Euro-direct and PCT-IP filings combined)	-2.4%	5.4%	4.3%	4.9%	7.1%	5.5%
Excluded	Random	Residence bloc	1.4%	5.5%	7.0%	5.7%	11.0%	5.8%
Excluded	Random	Residence bloc (ED and PCT-IP filings combined)	-1.3%	8.4%	4.9%	8.4%	9.6%	9.9%

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

Table 1: Predicted growth rates for Euro-direct and PCT-IP filings by forecasting method

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

			Year									
			2011				2012			2013		
Qualifying comments	Group	Breakdown	Predicted filings	LCL	UCL	RMSEF*	Predicted filings	LCL	UCL	Predicted filings	LCL	UCL
Included	Biggest	None	221 120				233 136			243 874		
Included	Biggest	Residence bloc	222 561				233 619			243 239		
Included	Random	None	215 785	203 858	227 711	16 925	230 078	216 150	244 006	237 103	222 012	252 194
Included	Random	None (winsorized)	217 546	209 206	225 886	14 663	232 646	223 661	241 631	240 565	230 367	250 764
Included	Random	None (Euro-direct and PCT-IP filings combined)	211 638	200 682	222 593	20 708	226 733	216 020	237 447	233 277	220 974	245 579
Included	Random	Residence bloc	228 782	210 659	246 905	9 660	245 789	219 406	272 172	257 414	226 114	288 714
Included	Random	Residence bloc (winsorized)	226 027	212 517	239 536	8 850	239 711	223 930	255 492	249 925	232 328	267 522
Included	Random	Residence bloc (ED and PCT-IP filings combined)	218 225	198 871	237 578	16 607	238 348	212 511	264 186	250 627	219 709	281 546
Excluded	Biggest	None	221 014				233 169			244 102		
Excluded	Biggest	Residence bloc	222 319				233 522			243 270		
Excluded	Random	None	211 518	199 729	223 307	20 942	225 624	211 847	239 400	232 191	217 258	247 124
Excluded	Random	None (Euro-direct and PCT-IP filings combined)	209 347	198 014	220 680	22 970	223 606	212 697	234 514	229 740	217 181	242 298
Excluded	Random	Residence bloc	217 483	205 541	229 425	15 355	229 527	216 388	242 666	237 932	224 209	251 654
Excluded	Random	Residence bloc (ED and PCT-IP filings combined)	211 540	193 676	229 403	22 014	225 015	206 092	243 937	235 090	211 835	258 344
Actual Filings			231 578									

*) **RMSEF**: Root mean squared error of forecast

Table 2: Predicted total numbers of Euro-direct and PCT-IP filings by forecasting method

Contrary to previous years, forecasts based on the Biggest group are not always more pessimistic than those based on the Random group. In fact, this year's survey seems to indicate that the assessment of members of the Biggest group remained more robust than assessments of some Random group members.

A priori, the Biggest group is not the preferred sample on which to base overall estimates of growth rates and filings, since its composition is skewed to large companies. Although it gives valuable information about the intentions of the small number of major applicants to EPO, it is not representative of the overall EPO applicant population, whereas the Random group represents a probabilistic sample of the totality of the EPO applicant population. Therefore, it is usually recommended to use the results from the Random group.

When considering which forecasting method to use, our recommendation this year is based on a formalisation of previous years' criteria, namely adherence to the expected actual total filing number for the first year, and low variability of the estimate (see **Section 9.3** for further details). This "root mean squared error of forecast" (RMSEF) for each estimate is shown in **Table 2**. Based on this criterion, we recommend using the forecast broken down by residence bloc and employing winsorisation⁸. Its one-year estimate aligns well and best of all estimates with the current expectation of actual filings in 2011. Moreover, it is among the estimates with the lowest deviations for all forecast years, although this is to be expected since the winsorised estimate is specifically designed to reduce estimator variance. The filing estimates using the recommended prediction method as shown in **Figure 2** are **226 027 for 2011, 239 711 for 2012, and 249 925 for 2013**. For the two and three-year time horizon, our recommendation also aligns well with the long-term estimates based on the Biggest group, which has historically performed well in terms of two and three-year growth.

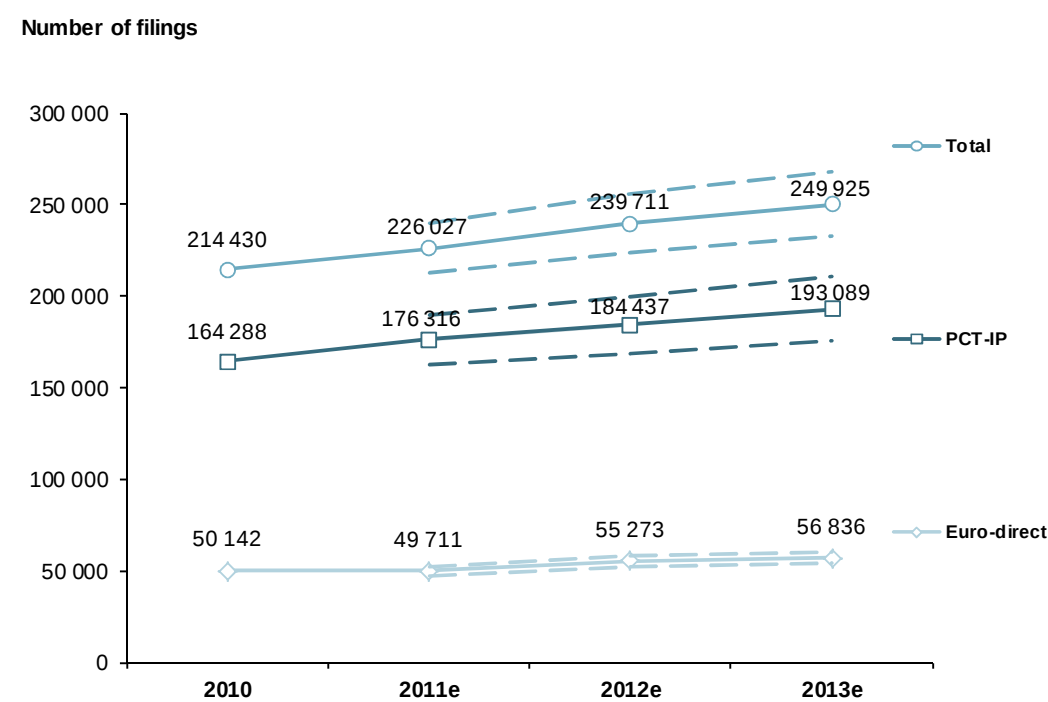


Figure 2: Forecasts for EPO filings based on the recommended forecast – Random group with breakdown by residence bloc, employing winsorisation (dotted lines illustrate 95% confidence limits)

⁸ "Included / Random / Residence bloc (winsorised)" in Table 1 and Table 2.

Due to the design of the survey, growth estimates and predicted filing totals based purely on these survey data cannot 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 one-year, two-year and three-year ahead correction factors to add to (or subtract from) the filing predictions of the survey. See **Annex IX** for details on this procedure.

Since estimation of these correction factors relies on somewhat stable historical data, it was decided not to provide corrected forecasts employing correction factors for the 2009 and 2010 surveys. For the 2011 survey, the global economic situation in 2009 and 2010 appeared to have stabilised enough to allow for sensible estimation of correction factors, so that in this survey it was decided to return to the policy of also reporting estimated filing totals including correction factors.

Applying this year's suggested respective correction factors results in a net increase of 1 328 predicted filings in 2011, 2 456 filings in 2012, and 4 706 filings in 2013. The corrected filing predictions for all forecast approaches of this survey are shown in **Table 3**. Notably, applying the correction factors actually leads to a small improvement in RMSEF values for most forecasts.

While these correction factors are certainly helpful in trying to overcome some of the limitations of this survey due to sampling, 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.

			Year												
			2011				2012			2013					
			Predicted filings	LCL	UCL	RMSEF	Predicted filings	LCL	UCL	Predicted filings	LCL	UCL			
Qualifying comments	Group	Breakdown	Birth / Death Correction Factor				1 328	1 328	1 328	2 456	2 456	2 456	4 706	4 706	4 706
Included	Biggest	None	222 448					235 592					248 580		
Included	Biggest	Residence bloc	223 889					236 075					247 945		
Included	Random	None	217 113	205 186	229 039	15 707		232 534	218 606	246 462			241 809	226 718	256 900
Included	Random	None (winsorized)	218 874	210 534	227 214	13 406		235 102	226 117	244 087			245 271	235 073	255 470
Included	Random	None (Euro-direct and PCT-IP filings combined)	212 966	202 010	223 921	19 443		229 189	218 476	239 903			237 983	225 680	250 285
Included	Random	Residence bloc	230 110	211 987	248 233	9 415		248 245	221 862	274 628			262 120	230 820	293 420
Included	Random	Residence bloc (winsorized)	227 355	213 845	240 864	8 118		242 167	226 386	257 948			254 631	237 034	272 228
Included	Random	Residence bloc (ED and PCT-IP filings combined)	219 553	200 199	238 906	15 598		240 804	214 967	266 642			255 333	224 415	286 252
Excluded	Biggest	None	222 342					235 625					248 808		
Excluded	Biggest	Residence bloc	223 647					235 978					247 976		
Excluded	Random	None	212 846	201 057	224 635	19 685		228 080	214 303	241 856			236 897	221 964	251 830
Excluded	Random	None (Euro-direct and PCT-IP filings combined)	210 675	199 342	222 008	21 697		226 062	215 153	236 970			234 446	221 887	247 004
Excluded	Random	Residence bloc	218 811	206 869	230 753	14 162		231 983	218 844	245 122			242 638	228 915	256 360
Excluded	Random	Residence bloc (ED and PCT-IP filings combined)	212 868	195 004	230 731	20 837		227 471	208 548	246 393			239 796	216 541	263 050
Actual Filings			231 578												

^{*)} RMSEF: Root mean squared error of forecast

Table 3: Birth/Death corrected predicted total numbers of Euro-direct and Euro-PCT-IP filings by forecasting method

3.2 Comparison with previous patent filings surveys

Figure 3 and **Table 4** as well as **Figure 4** and **Table 5** compare the forecasting results of previous surveys since 2003 for the Biggest and the Random groups, respectively.

The **precision of predictions** from previous years' surveys can be evaluated by comparison with actual filing numbers, which are given in the last row of the respective tables. The forecast numbers are given as percentage values of the actual filings in brackets. On the whole, the forecast deviation in terms of the percentage of actual filings remains between 90% and 105% with the notable exception of estimates based on the 2007 and 2008 surveys for the crisis-affected years of 2009 and 2010. Neither the 2007 nor the 2008 survey was able to predict the downturn in filings for 2009. But encouragingly, the 2009 survey not only properly captured base year filings, it also fared quite well in terms of predicting 2010 filings. Predictions from the 2010 survey appear somewhat too pessimistic in hindsight. As everywhere else in this report, all filing totals shown in this section and used to compare this year's survey with previous years exclude divisional filings, in order to ensure comparability with this year's forecasting approach. Correction factors for birth and death effects are omitted in this section.

Concerning which sample to base estimates on, in retrospect the estimates based on the Random group were slightly more accurate than the estimates based on the Biggest group, with the exception of estimates of the 2007 survey for 2008 and the 2008 survey for 2009 and 2010, where the Biggest group can now be seen to have fared better. However, this better performance of Biggest group estimates for the years of economic crisis is likely to have been not so much a matter of better foresight, but because estimates based on the Biggest group are traditionally more conservative than those based on the Random group.

Given the uncertainty about the sustainability of the current economic recovery, we will continue monitoring the performance of estimates based on both samples in subsequent surveys.

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

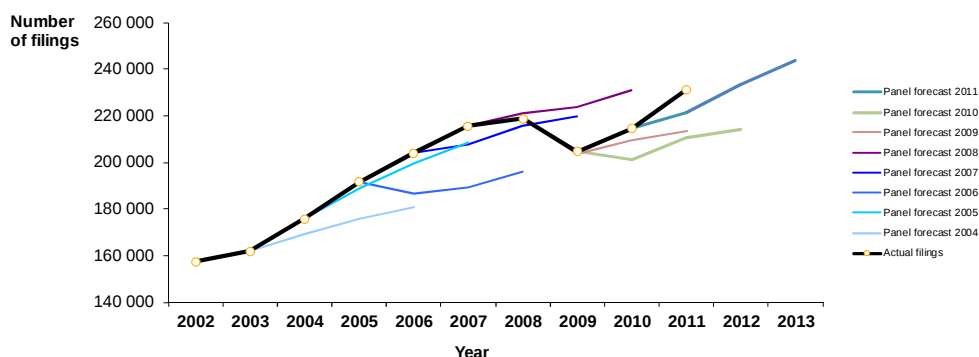


Figure 3: Comparison of forecasts since 2003 (Biggest group with no subsidiary breakdown)

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

Number of filings* forecasted based on ...	Forecasting Year											
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
... 2003 panel survey (in % of actual filings)	157 434 (=actual)	..	..	..								
... 2004 panel survey (in % of actual filings)		161 932 (=actual)	168 905 (96%)	175 647 (92%)	180 869 (89%)							
... 2005 panel survey (in % of actual filings)			175 643 (=actual)	188 713 (99%)	199 455 (98%)	208 532 (97%)						
... 2006 panel survey (in % of actual filings)				191 499 (=actual)	186 500 (91%)	189 297 (88%)	195 854 (90%)					
... 2007 panel survey (in % of actual filings)					204 027 (=actual)	207 557 (96%)	215 853 (99%)	219 717 (107%)				
... 2008 panel survey (in % of actual filings)						215 586 (=actual)	221 086 (101%)	223 897 (109%)	230 688 (108%)			
... 2009 panel survey (in % of actual filings)							218 757 (=actual)	203 663 (100%)	209 379 (98%)	213 281 (92%)		
... 2010 panel survey (in % of actual filings)								204 600 (=actual)	201 136 (94%)	210 322 (91%)	214 193 (N/A)	
... 2011 panel survey (in % of actual filings)									214 430 (=actual)	221 120 (96%)	233 136 (N/A)	243 874 (N/A)
Actual filings	157 434	161 932	175 643	191 499	204 027	215 586	218 757	204 600	214 430	231 204	N/A	N/A

Table 4: Comparison of forecasts since 2003 (Biggest group with no subsidiary breakdown)

Comparison of forecasts since 2003 based on the recommended forecast

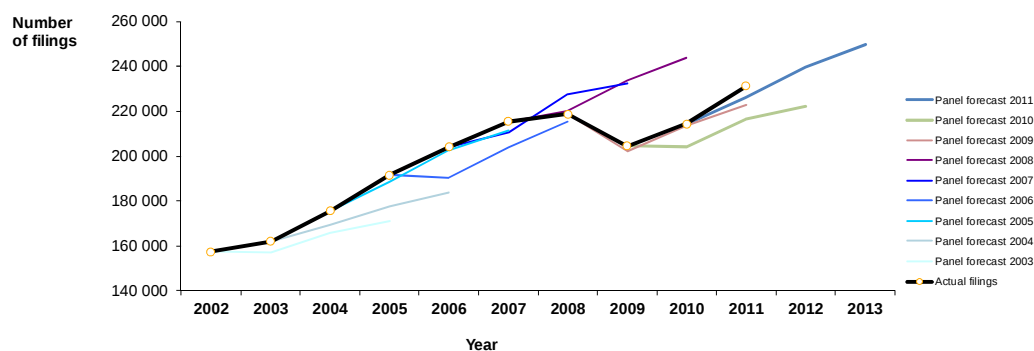


Figure 4: Comparison of recommended forecasts since 2003 (Random group)

Survey year	Recommended forecast method	Forecast ¹⁾	Forecasting Year											
			2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
2003	Random group with residence bloc breakdown (EPC and Others combined)	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit	157 434 (=actual)	157 121 (97%) 155 007 166 525	165 668 (94%) 160 982 178 091	171 061 (89%) 166 171 184 680								
2004	Random group without subsidiary breakdown	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit		161 932 (=actual)	169 516 (97%) 164 250 184 661	177 656 (93%) 170 228 195 439	183 606 (90%) 175 084 202 830							
2005	Random group without subsidiary breakdown	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit			175 643 (=actual)	188 798 (99%) 186 324 203 023	202 471 (99%) 197 983 219 560	211 427 (98%) 205 505 230 509						
2006	Random group with residence bloc breakdown	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit				191 499 (=actual)	190 338 (93%) 178 298 214 506	203 939 (95%) 187 051 233 821	215 408 (98%) 196 847 247 694					
2007	Random&Smallest group without subsidiary breakdown	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit					204 027 (=actual)	210 409 (98%) 209 961 224 927	227 451 (104%) 227 359 242 753	232 362 (114%) 231 081 249 180				
2008	Random group without subsidiary breakdown	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit						215 586 (=actual)	220 374 (101%) 219 446 234 509	233 575 (114%) 231 547 249 601	243 890 (114%) 240 746 261 649			
2009	Random group without subsidiary breakdown Euro-direct and Euro-PCT-IP filings combined	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit							218 757 (=actual)	202 063 (99%) 201 830 216 251	213 529 (100%) 211 940 229 862	222 822 (96%) 220 420 240 610		
2010	Random group without subsidiary breakdown Euro-direct and Euro-PCT-IP filings combined	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit								204 600 (=actual)	204 354 (95%) 199 117 209 591	216 620 (94%) 210 324 222 915	222 160 (N/A) 215 126 229 195	
2011	Random group with residence bloc breakdown (winsorized)	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit									214 430 (=actual)	226 027 (98%) 212 517 239 536	239 711 (N/A) 223 930 255 492	249 925 (N/A) 232 328 267 522
		Actual filings	157 434	161 932	175 643	191 499	204 027	215 586	218 757	204 600	214 430	231 204	N/A	N/A

¹⁾ First and subsequent Euro-direct and Euro-PCT-IP filings excluding divisional filings

Table 5: Comparison of recommended forecasts since 2003 (Random group)

4 Methodology and Individual Forecasts

Section 4.1 details the methodology employed for obtaining the growth forecasts. In **Sections 4.2 and 4.3**, results for the Biggest group and the Random group are presented, respectively.

4.1 Methodology and structure of results

The main part of the survey covers the predictions of future patent filings. The basic approach was the same as in the previous surveys. For a detailed description of the methodology see the *Applicant Panel Survey 2003 report*. The survey data from the main questions in **Part B** of the questionnaire are used to measure patent growth rates.

For the Biggest group, growth rates are calculated as a **Composite index**.⁹ Growth rates in the Random group are calculated as a **Q index**.¹⁰ This involves weighting each applicant's response with a so-called Poisson weight, to account for the fact that the Random group is a random sample of applications, rather than of applicants. The number of filings an applicant has made is a central factor in the determination of the Poisson weight. Traditionally, and in order to align with the sampling procedure, this number of filings was taken from the EPO's database recorded for each applicant. Using these "database-tethered Poisson weights" ensures that the number of filings which directly determine each applicant's probability of inclusion in the sample is used in the weighting procedure.

However, the respondent is also asked to give the number of filings that were made in the base year on the questionnaire, and this may differ from the number recorded in the EPO's database. One of the main reasons for this is that the respondent may actually be answering for a different, or overlapping, entity to the one that was selected as assumed from the EPO's database. Specifically, the respondent may represent a smaller or larger company than the database entity does. The extent of such mismatching was minimised by selecting applicants from the database on the basis of identical or very similar names, rather than by using applicant code numbers.

As was also done in the previous two surveys, a set of respondent-based weights was also computed as a further check on the effect of mismatching. See **Annex X**. However, all the forecasts in the main part of this report are calculated using database-tethered Poisson weights.

As in previous years, a natural logarithmic transformation was applied to the data before calculating the Q index.¹¹ A finite population correction (fpc) was included when calculating the confidence limits for forecasts of total patent filings. Details on the construction of the

⁹ Cf. Applicant Panel Survey 2001 report: Annex III.

¹⁰ Cf. Applicant Panel Survey 2002 report: Section IV.1, Annex IV.

¹¹ Cf. Applicant Panel Survey 2002 report: Annex IV.

finite population correction are given in the *Applicant Panel Survey 2006 report*¹². Specific fpc values used this year are explained in **Annex III, Section 9.4**.

When analysing data subsets, e.g. itemisations by residence bloc or mega cluster, cases arise where the sample size falls below a critical threshold of five respondents. In such cases, for either the Composite index or the Q index, replacement is done by a growth value taken from the corresponding analysis on the next available level of aggregation. In the results tables, the replacement of growth indices with aggregated values is marked with an asterisk (*).

Once the growth indices were calculated based on the survey results, they were multiplied by the actual numbers of filings (excluding divisional filings) in the 2010 base year in order to generate explicit forecasts. Data on Euro-direct, PCT-IP and Euro-PCT-RP filings for 2010 and 2011 were supplied by the EPO on 2 March 2012, and reflect the status of the database about one week before that date.

In many cases, the responses on growth forecasts in the questionnaire (**Part B**) made it necessary for the researchers to validate them, usually by conducting a clarifying conversation with the respondent. After the validation attempts, the validity and integrity of some responses remained doubtful and such cases were marked with a **critical code**. In this year's survey, 42 cases, or 5.4%, of survey responses were ultimately marked with a critical code. There are also non-critical codes. For details, refer to the plausibility checks described in **Annex I, Section 7.6**.

As in previous years, all growth forecasts were carried out twice: once on the full dataset including those cases marked with a critical code, and once on a reduced set of cases which do not carry any critical code. The summary tables shown in **Section 3.1** thus show results for both sets of data, while the detailed tables in this report always refer to the full dataset including cases with critical codes (unless explicitly stated otherwise).

The patent filing predictions are presented in various **breakdown scenarios**. Based on the resulting forecasts, an overall growth forecast is derived for each year based on an accumulation of the individual forecasts. In previous years, one of the breakdown scenarios examined was based on so-called mega clusters. This was of some interest for the EPO since these filing predictions provided industry-specific growth rates. This year, however, it was decided not to attempt megacluster-specific filing totals as the derivation of baseline filing totals per mega cluster is not always straightforward or unambiguous. Thus, mega cluster forecasts are shown as growth rate forecasts only, and appear in **Annex IV**.

As a means of analysing and reducing distortions by outliers, the technique of **winsorisation** was applied to some of the forecasts as an additional forecast approach. See **Section 9.5** for details on winsorisation.

¹² Cf. Applicant Panel Survey 2006 report: Annex VII, page 79.

4.2 Biggest group

This year, the Biggest group is based on a sample of 413 addresses found for Euro-direct filings and Euro-PCT-RP filings, being all the applicants making at least 35 such applications (excluding divisionals) in 2010. From this group, 168 responded to the 2011 Patent Filings Survey (40.7%).

It is considered appropriate to calculate growth rates for the Biggest group as a Composite index (CI).¹³ Detailed information on the forecasts by filing type and route are shown in **Table 6** and **Figure 5** (no subsidiary breakdown). **Table 7** shows details of the forecasts by filing type and route where the four residence blocs Europe (EPC), Japan (JP), Other (OT), and the US are differentiated (broken down by residence bloc). No confidence limits are given for the estimates as this is a survey of the intentions of the Biggest applicants and not of a random statistical sample.

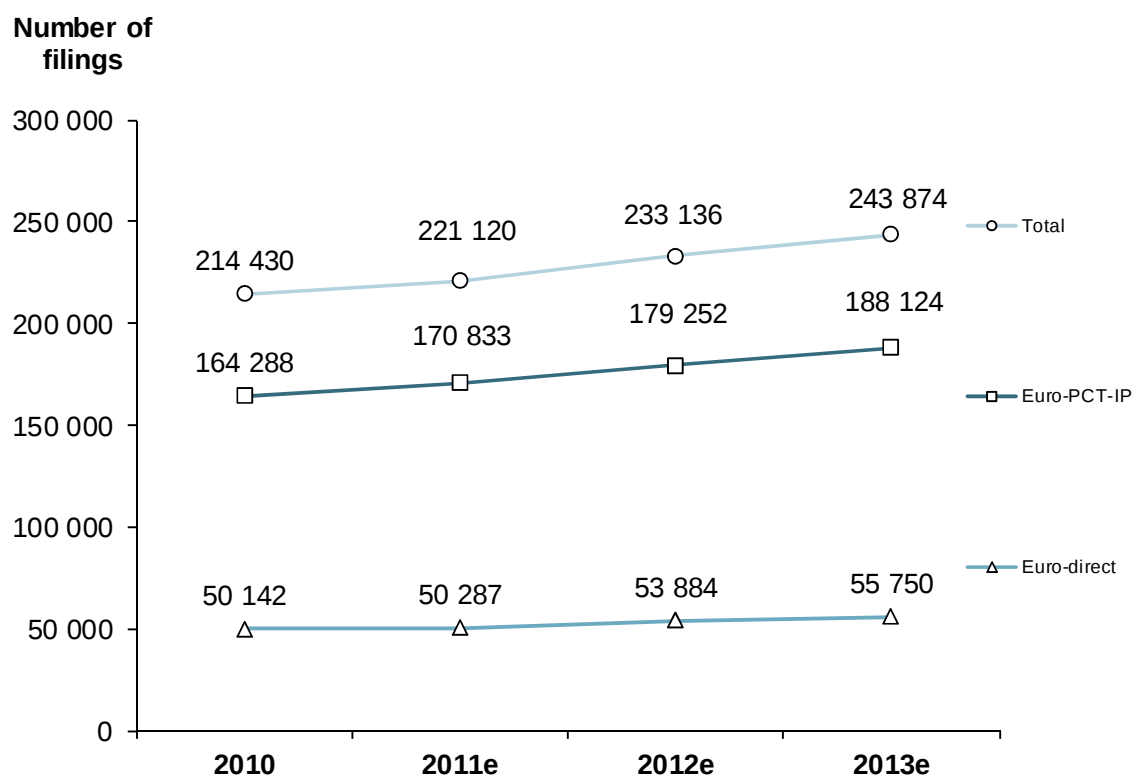


Figure 5: Forecasts for EPO filings – Biggest group with no subsidiary breakdown

¹³ Cf. Applicant Panel Survey 2001 report: Annex III.

Biggest group (including critical comments)
No subsidiary breakdown
Composite indices

			Year										
			2010	2011			2012			2013			
Filing type	Filing route	Res. bloc	Actual filings	Cases 11	Index 11	Predicted filings	Actual filings	Cases 12	Index 12	Predicted filings	Cases 13	Index 13	Predicted filings
First	Euro-direct	Total	19 070	57	1.0347	19 733	20 265	56	1.1123	21 212	56	1.1621	22 161
	Euro-PCT-IP	Total	4 816	50	1.0540	5 076	5 442	47	1.0752	5 179	47	1.1321	5 453
Subsequent	Euro-direct	Total	31 072	91	0.9833	30 554	31 597	87	1.0515	32 672	87	1.0810	33 588
	Euro-PCT-IP	Total	159 472	113	1.0394	165 757	174 274	112	1.0916	174 073	112	1.1455	182 672
All	Euro-direct	Total	50 142			50 287	51 862			53 884			55 750
	Euro-PCT-IP	Total	164 288			170 833	179 716			179 252			188 124
Grand total			214 430			221 120	231 578			233 136			243 874
Growth from 2010						3.1%	8.0%			8.7%			13.7%
Implied % Euro-PCT-IP			76.6%			77.3%	77.6%			76.9%			77.1%

Table 6: Forecasts for EPO filings – Biggest group with no subsidiary breakdown

Biggest group (including critical comments)
Breakdown by residence bloc
Composite indices

			Year										
			2010	2011			2012			2013			
Filing type	Filing route	Res. bloc	Actual filings	Cases 11	Index 11	Predicted filings	Actual filings	Cases 12	Index 12	Predicted filings	Cases 13	Index 13	Predicted filings
First	Euro-direct	EP	16 933	47	1.0177	17 232	18 146	46	1.0976	18 586	46	1.1449	19 386
		JP	188	6	1.7353	326	238	6	1.8529	348	6	2.0000	376
		OT	997	0 *	1.0347	1 032	931	0 *	1.1123	1 109	0 *	1.1621	1 159
		US	952	4 *	1.0347	985	950	4 *	1.1123	1 059	4 *	1.1621	1 106
		Total	19 070	57		19 575	20 265	56		21 102	56		22 027
First	Euro-PCT-IP	EP	1 549	32	1.0659	1 651	1 574	29	1.0922	1 692	29	1.1765	1 822
		JP	1 734	13	1.0341	1 793	2 173	13	1.0495	1 820	13	1.0668	1 850
		OT	970	1 *	1.0540	1 022	1 102	1 *	1.0752	1 043	1 *	1.1321	1 098
		US	563	4 *	1.0540	594	593	4 *	1.0752	606	4 *	1.1321	638
		Total	4 816	50		5 060	5 442	47		5 160	47		5 408
Subsequent	Euro-direct	EP	15 474	56	0.9670	14 963	15 214	53	1.0861	16 806	53	1.1175	17 292
		JP	6 082	25	1.0762	6 545	6 522	24	1.0934	6 650	24	1.0994	6 686
		OT	4 262	3 *	0.9833	4 191	4 640	3 *	1.0515	4 482	3 *	1.0810	4 607
		US	5 254	7	0.8755	4 600	5 221	7	0.8560	4 498	7	0.8784	4 615
		Total	31 072	91		30 299	31 597	87		32 436	87		33 201
Subsequent	Euro-PCT-IP	EP	52 388	67	1.0063	52 721	53 246	66	1.0513	55 078	66	1.1011	57 684
		JP	30 415	32	1.0996	33 445	38 113	32	1.1820	35 951	32	1.2580	38 263
		OT	32 245	1 *	1.0394	33 516	36 161	1 *	1.0916	35 197	1 *	1.1455	36 936
		US	44 424	13	1.0793	47 946	46 754	13	1.0961	48 694	13	1.1192	49 720
		Total	159 472	113		167 627	174 274	112		174 920	112		182 603
All	Euro-direct	EP	32 407			32 195	33 360			35 392			36 678
		JP	6 270			6 871	6 760			6 999			7 062
		OT	5 259			5 223	5 571			5 591			5 766
		US	6 206			5 585	6 171			5 557			5 721
		Total	50 142			49 874	51 862			53 538			55 228
All	Euro-PCT-IP	EP	53 937			54 372	54 821			56 770			59 506
		JP	32 149			35 238	40 286			37 771			40 113
		OT	33 215			34 538	37 262			36 240			38 034
		US	44 987			48 539	47 347			49 300			50 356
		Total	164 288			172 687	179 716			180 081			188 011
Grand total	Total	EP	86 344			86 567	88 181			92 162			96 185
		JP	38 419			42 110	47 046			44 769			47 175
		OT	38 474			39 761	42 833			41 831			43 800
		US	51 193			54 124	53 518			54 856			56 079
		Total	214 430			222 561	231 578			233 619			243 239
Growth from 2010						3.8%	8.0%			8.9%			13.4%
Implied Euro-PCT-IP						77.6%	77.6%			77.1%			77.3%

Table 7: Forecasts for EPO filings – Biggest group, broken down by residence bloc

4.3 Random group

The Random group this year is based on a sample of 2 502 addresses found for Euro-direct filings and Euro-PCT-RP filings, of which 760 responded to the survey (30.4%).

For responses from the Random group, the Q index method was used following logarithmic transformation of the data. All the tables in this section for the Random group analyses show the numbers of cases that estimates were based on, Q indices with their standard errors, the resulting filing forecasts, and the 95% confidence intervals based thereon.¹⁴ Unless explicitly stated otherwise, all results are based on the full version of the Random group dataset, including cases with critical comments.

The forecasts for numbers of patent filings without a breakdown by residence bloc are illustrated in **Table 8** to **Table 11**. **Figure 6** and **Table 8** depict the results with the usual breakdowns by filing type and filing route. **Table 9** gives the results of the same forecast method using winsorised data. To address any uncertainty about whether it is advisable to forecast separately by filing route, a forecast combining filing routes Euro-direct and PCT-IP was done, the results of which are displayed in **Table 10**. **Table 11** provides the results of the analysis without a breakdown by residence bloc, but including those companies which were marked with a critical code. Finally, **Table 12** shows the results of a forecast without subsidiary breakdown and combining Euro-direct and PCT-IP filing routes using all available Random group cases, including those with critical comments.

Analyses for the Random group using a breakdown into the four residence blocs, Europe (EPC), Japan (JP), Other (OT), and the US, are shown in **Table 13** to **Table 16**. **Table 13** shows the results when using Random group cases including critical comments. **Table 14** depicts the results using winsorised data and **Table 15** shows results when combining Euro-direct and PCT-IP filing routes. Finally, **Table 16** is analogous to the forecast shown in **Table 13**, but excludes cases with a critical code.

The analysis corresponding to **Table 8**, with no subsidiary breakdown, was used for the recommended filing forecasts in the 2005, 2007 and 2008 reports. This recommendation was based mostly on narrow confidence intervals of the forecast and better adherence to known filing figures of the survey year compared to other forecasting approaches.

In 2009 and 2010, the recommended forecast method was the one shown in **Table 10** (analysis with no subsidiary breakdown and with Euro-direct and PCT-IP filings combined), because of a better fit with 2009 actual filings and narrower confidence intervals.

When comparing analogous forecasts based on the full data set (including cases with critical codes) with forecasts based on the reduced Random group data set (excluding cases with critical codes), it becomes apparent that estimates based on the reduced data set this year are quite conservative in terms of one-year filings predictions. Also, contrary

¹⁴ The Q index is a weighted average of the individual growth rates given by the respondents using Poisson weights (weight formula shown in Section 9.1). Cf. Applicant Panel Survey 2002 report: Section IV.1, Annex IV. Reported standard errors are based on the logarithms of the respective Q-Index estimates. Cf. Applicant Panel Survey 2002 report, Annex IV. Finite population correction factors are applied. Cf. Applicant Panel Survey 2006 report: Annex VII, page 79.

to previous years, restricting the forecasts to the reduced data set this year does not lead to a consistent reduction in estimated deviations. Both of these observations support the decision to return to full data set estimates including cases with critical comments as the de facto standard for this report.

For this year’s survey, the recommended forecast approach uses a residence bloc breakdown and is based on winsorised individual growth indices. This approach exhibits the best adherence to actual 2011 filing counts in terms of RMSEF. Also, for two and three-year ahead predictions, this approach is roughly at the midpoint of all estimates and is reasonably well aligned with the Biggest group estimates. In terms of accuracy of the one-year growth point estimate alone, the forecast using a residence bloc breakdown without winsorisation is actually closer to the expected true filing total in 2011 than the recommended estimate. However, due to the lower variance of the winsorised estimate, it achieves the lowest RMSEF.

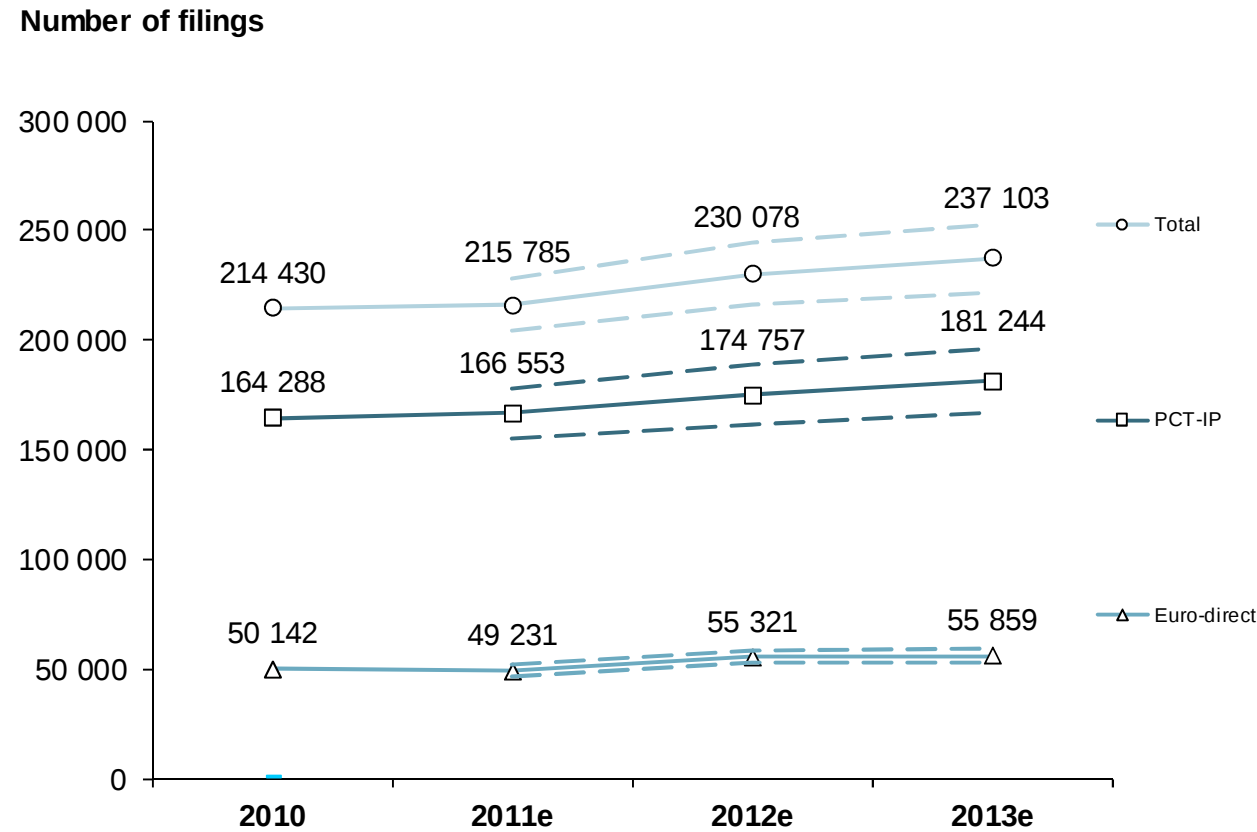


Figure 6: Forecasts for EPO filings – Random group without breakdown by residence bloc (dotted lines illustrate 95% confidence limits)

Random group (including critical comments)
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													
			2010	2011				2012				2013				
Filing type	Filing route	Res. bloc	Actual filings	Cases 11	Q-index	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index	S.E. 12	Predicted filings	Cases 13	Q-index	S.E. 13	Predicted filings
First	Euro-direct	Total	19 070	191	1.0873	0.0370	20 736	20 265	186	1.1575	0.0407	22 073	182	1.1751	0.0483	22 408
		LCL					19 229					20 311				20 283
		UCL					22 243					23 834				24 534
First	Euro-PCT-IP	Total	4 816	124	1.0591	0.1366	5 101	5 442	123	1.1056	0.1344	5 325	115	1.1846	0.1442	5 705
		LCL					3 716					3 903				4 067
		UCL					6 486					6 746				7 344
Subsequent	Euro-direct	Total	31 072	272	0.9171	0.0462	28 496	31 597	264	1.0701	0.0347	33 249	261	1.0765	0.0352	33 450
		LCL					25 912					30 983				31 142
		UCL					31 079					35 515				35 759
Subsequent	Euro-PCT-IP	Total	159 472	336	1.0124	0.0362	161 453	174 274	334	1.0625	0.0408	169 432	329	1.1008	0.0426	175 539
		LCL					149 990					155 877				160 869
		UCL					172 915					182 986				190 209
All	Euro-direct	Total	50 142				49 231	51 862				55 321				55 859
		LCL					46 240					52 452				52 721
		UCL					52 222					58 191				58 997
All	Euro-PCT-IP	Total	164 288				166 553	179 716				174 757				181 244
		LCL					155 008					161 128				166 483
		UCL					178 099					188 386				196 006
Grand total		Total	214 430				215 785	231 578				230 078				237 103
		LCL					203 858					216 150				222 012
		UCL					227 711					244 006				252 194
Growth from 2010							0.6%	8.0%				7.3%				10.6%
Implied % Euro-PCT-IP			76.6%				77.2%	77.6%				76.0%				76.4%
Deviation in % of forecast							5.5%					6.1%				6.4%

Table 8: Forecasts for EPO filings – Random group with no subsidiary breakdown

Random group (including critical comments)
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													
			2010	2011				2012				2013				
Filing type	Filing route	Res. bloc	Actual filings	Cases 11	Q-index	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index	S.E. 12	Predicted filings	Cases 13	Q-index	S.E. 13	Predicted filings
First	Euro-direct	Total	19 070	191	1.0611	0.0276	20 235	20 265	186	1.1214	0.0306	21 385	182	1.1450	0.0411	21 835
		LCL					19 140					20 102				20 072
		UCL					21 330					22 668				23 598
First	Euro-PCT-IP	Total	4 816	124	1.1622	0.0649	5 598	5 442	123	1.2103	0.0597	5 829	115	1.3099	0.0633	6 309
		LCL					4 884					5 146				5 524
		UCL					6 312					6 513				7 094
Subsequent	Euro-direct	Total	31 072	272	0.9339	0.0384	29 018	31 597	264	1.0765	0.0318	33 450	261	1.0866	0.0307	33 762
		LCL					26 830					31 365				31 729
		UCL					31 207					35 534				35 794
Subsequent	Euro-PCT-IP	Total	159 472	336	1.0202	0.0249	162 694	174 274	334	1.0785	0.0256	171 982	329	1.1203	0.0280	178 659
		LCL					154 754					163 364				168 854
		UCL					170 635					180 601				188 465
All	Euro-direct	Total	50 142				49 254	51 862				54 834				55 597
		LCL					46 807					52 387				52 906
		UCL					51 701					57 282				58 288
All	Euro-PCT-IP	Total	164 288				168 292	179 716				177 812				184 968
		LCL					160 319					169 166				175 131
		UCL					176 265					186 457				194 806
Grand total		Total	214 430				217 546	231 578				232 646				240 565
		LCL					209 206					223 661				230 367
		UCL					225 886					241 631				250 764
Growth from 2010							1.5%	8.0%				8.5%				12.2%
Implied % Euro-PCT-IP			76.6%				77.4%	77.6%				76.4%				76.9%
Deviation in % of forecast							3.8%					3.9%				4.2%

Table 9: Forecasts for EPO filings – Random group with no subsidiary breakdown, analysis employing winsorisation

Random group (including critical comments)
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													
			2010	2011				2012				2013				
Filing type	Filing route	Res. bloc	Actual filings	Cases 11	Q-index 11	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index 12	S.E. 12	Predicted filings	Cases 13	Q-index 13	S.E. 13	Predicted filings
First	All	Total	23 886	165	1.1295	0.0467	26 980	25 707	159	1.2043	0.0513	28 765	153	1.2646	0.0550	30 207
		LCL					24 504					25 869				26 944
		UCL					29 456					31 661				33 470
Subsequent	All	Total	190 544	323	0.9691	0.0295	184 658	205 871	316	1.0390	0.0266	197 968	313	1.0657	0.0298	203 070
		LCL					173 986					187 654				191 208
		UCL					195 330					208 283				214 932
Grand total		Total	214 430				211 638	231 578				226 733				233 277
		LCL					200 682					216 020				220 974
		UCL					222 593					237 447				245 579
Growth from 2010						-1.3%	8.0%					5.7%				8.8%
Deviation in % of forecast							5.2%					4.7%				5.3%

Table 10: Forecasts for EPO filings – Random group with no subsidiary breakdown (Euro-direct and PCT-IP filings combined)

Random group (excluding critical comments)
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													
			2010	2011				2012				2013				
Filing type	Filing route	Res. bloc	Actual filings	Cases 11	Q-index	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index	S.E. 12	Predicted filings	Cases 13	Q-index	S.E. 13	Predicted filings
First	Euro-direct	Total	19 070	183	1.0660	0.0388	20 711	20 265	178	1.1576	0.0427	22 076	174	1.1738	0.0507	22 384
		LCL					19 133					20 227				20 156
		UCL					22 289					23 925				24 613
First	Euro-PCT-IP	Total	4 816	119	1.0661	0.1419	5 135	5 442	119	1.1029	0.1385	5 312	111	1.1836	0.1488	5 701
		LCL					3 685					3 849				4 010
		UCL					6 584					6 775				7 391
Subsequent	Euro-direct	Total	31 072	256	0.9102	0.0480	28 282	31 597	247	1.0622	0.0361	33 006	243	1.0629	0.0362	33 027
		LCL					25 620					30 669				30 690
		UCL					30 945					35 343				35 374
Subsequent	Euro-PCT-IP	Total	159 472	316	0.9869	0.0365	157 390	174 274	313	1.0361	0.0412	165 230	309	1.0728	0.0431	171 079
		LCL					146 108					151 859				156 599
		UCL					168 673					178 600				185 558
All	Euro-direct	Total	50 142				48 993	51 862				55 082				55 412
		LCL					45 898					52 102				52 175
		UCL					52 089					58 062				58 648
All	Euro-PCT-IP	Total	164 288				162 525	179 716				170 542				176 779
		LCL					151 149					157 091				162 201
		UCL					173 900					183 992				191 357
Grand total		Total	214 430				211 518	231 578				225 624				232 191
		LCL					199 729					217 258				217 258
		UCL					223 307					239 400				247 124
Growth from 2010								8.0%				5.2%				8.3%
Implied % Euro-PCT-IP			76.6%				76.8%	77.6%				75.6%				76.1%
Deviation in % of forecast							5.6%					6.1%				6.4%

Table 11: Forecasts for EPO filings – Random group excluding companies with critical comments, no subsidiary breakdown

Random group (excluding critical comments)
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													
			2010	2011				2012				2013				
Filing type	Filing route	Res. bloc	Actual filings	Cases 11	Q-index 11	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index 12	S.E. 12	Predicted filings	Cases 13	Q-index 13	S.E. 13	Predicted filings
First	All	Total	23 886	156	1.1310	0.0494	27 015	25 707	151	1.2055	0.0538	28 795	145	1.2663	0.0578	30 248
		LCL					24 397					25 751				26 815
		UCL					29 634					31 839				33 680
Subsequent	All	Total	190 544	299	0.9569	0.0308	182 332	205 871	292	1.0224	0.0274	194 811	289	1.0470	0.0309	199 492
		LCL					171 306					184 336				187 412
		UCL					193 359					205 286				211 572
Grand total		Total	214 430				209 347	231 578				223 606				229 740
		LCL					198 014					212 697				217 181
		UCL					220 680					234 514				242 296
Growth from 2010							-2.4%	8.0%				4.3%				7.1%
Deviation in % of forecast							5.4%					4.9%				5.5%

Table 12: Forecasts for EPO filings – Random group excluding companies with critical comments, no subsidiary breakdown (Euro-direct and PCT-IP filings combined)

Random group (including critical comments)
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													
			2010		2011			2012			2013					
Filing type	Filing route	Res. bloc	Actual filings	Cases 11	Q-index 11	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index 12	S.E. 12	Predicted filings	Cases 13	Q-index 13	S.E. 13	Predicted filings
First	Euro-direct	EP	16 933	163	1.0254	0.0254	17 363	18 146	160	1.0000	0.0333	18 626	156	1.1104	0.0424	18 803
		JP	188	8	2.1790	0.3093	410	238	8	2.4081	0.3034	453	8	2.5564	0.3050	481
		OT	997	6	1.3728	0.1798	1 369	931	6	1.7462	0.1614	1 741	6	2.0298	0.1833	2 024
		US	952	14	1.2393	0.1612	1 180	950	12	1.1159	0.0527	1 062	12	1.1362	0.0559	1 082
		Total	19 070	191			20 321	20 265	186			21 882	182			22 389
First	Euro-PCT-IP	LCL					19 221	20 265				20 507				20 624
		UCL					21 421					23 257				24 153
		EP	1 549	77	0.9320	0.1736	1 444	1 574	75	0.9856	0.1789	1 527	69	1.0634	0.1936	1 647
		JP	1 734	19	1.3964	0.1496	2 422	2 173	19	1.4884	0.1773	2 599	19	1.5692	0.2029	2 721
		OT	970	8	1.1890	0.0733	1 153	1 102	9	1.3423	0.0873	1 302	8	1.5488	0.1195	1 502
Subsequent	Euro-direct	US	563	20	1.5684	0.2670	883	593	20	1.4139	0.1574	796	19	1.4659	0.1583	826
		Total	4 816	124			5 902	5 442	123			6 223	115			6 696
		LCL					4 882					5 097				5 335
		UCL					6 921					7 350				8 058
		EP	15 474	177	0.8766	0.0589	13 565	15 214	169	1.0742	0.0406	16 623	164	1.0731	0.0386	16 605
Subsequent	Euro-PCT-IP	JP	6 082	51	1.0404	0.0388	6 327	6 522	50	1.0845	0.0414	6 596	50	1.0945	0.0454	6 657
		OT	4 262	13	1.0639	0.1461	4 534	4 640	14	1.3069	0.1534	5 570	15	1.5746	0.1836	6 711
		US	5 254	31	0.9385	0.1814	4 931	5 221	31	0.9417	0.2032	4 948	32	0.9369	0.2293	4 922
		Total	31 072	272			29 357	31 597	264			33 736	261			34 895
		LCL					26 588					30 724				31 240
Subsequent	Euro-PCT-IP	UCL					32 127					36 749				38 551
		EP	52 388	215	0.9774	0.0475	51 202	53 246	212	1.0274	0.0546	53 822	207	1.0635	0.0574	55 712
		JP	30 415	71	1.1017	0.0333	33 509	38 113	70	1.1500	0.0339	34 978	70	1.1836	0.0373	36 000
		OT	32 245	11	1.3021	0.1773	41 988	36 161	11	1.4530	0.2515	46 852	11	1.5895	0.2751	51 253
		US	44 424	39	1.0468	0.0897	46 503	46 754	41	1.0872	0.0805	48 296	41	1.1361	0.0773	50 468
All	Euro-direct	Total	159 472	336			173 202	174 274	334			183 947	329			193 434
		LCL					155 354					157 797				162 428
		UCL					191 049					210 097				224 440
		EP	32 407				30 928	33 360				35 249				35 405
		JP	6 270				6 737	6 760				7 049				7 137
All	Euro-PCT-IP	OT	5 259				5 903	5 571				7 311				8 734
		US	6 206				6 111	6 171				6 010				6 004
		Total	50 142				49 679	51 862				55 618				57 284
		LCL					46 699					52 307				53 225
		UCL					52 658					58 930				61 343
All	Euro-PCT-IP	EP	53 937				52 646					55 349				57 359
		JP	32 149				35 931					37 576				38 722
		OT	33 215				43 141					48 154				52 755
		US	44 987				47 386					49 092				51 294
		Total	164 288				179 103	179 716				190 170				200 130
Grand total	Total	LCL					161 227					163 996				169 095
		UCL					196 980					216 345				231 165
		EP	86 344				83 574					90 597				92 768
		JP	38 419				42 668					44 625				45 855
		OT	38 474				49 044					55 465				61 490
Growth from 2010	Implied Euro-PCT-IP	US	51 193				53 497					55 102				57 298
		Total	214 430				228 782	231 578				245 789				257 414
		LCL					210 659					219 406				226 114
		UCL					246 905					272 172				288 714
							6.7%	8.0%				14.6%				20.0%
Implied Euro-PCT-IP							78.3%	77.6%					77.4%			77.7%
Deviation in % of forecast							7.9%						10.7%			12.2%

Table 13: Forecasts for EPO filings – Random group broken down by residence bloc

Random group (including critical comments)
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

Filing type	Filing route	Res. bloc	Year														
			2010			2011			2012			2013					
			Actual filings	Cases 11	Q-index 11	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index 12	S.E. 12	Predicted filings	Cases 13	Q-index 13	S.E. 13	Predicted filings	
First	Euro-direct	EP	16 933	163	1.0198	0.0242	17 268	18 146	160	1.0803	0.0293	18 292	156	1.0936	0.0395	18 518	
		JP	188	8	1.6532	0.1523	311	238	8	1.8270	0.1517	343	8	2.0394	0.2005	383	
		OT	997	6	1.3148	0.1516	1 311	931	6	1.6725	0.1380	1 667	6	2.0298	0.1833	2 024	
		US	952	14	1.1722	0.1151	1 116	950	12	1.1159	0.0527	1 062	12	1.1362	0.0559	1 082	
		Total	19 070	191			20 006	20 265	186			21 366	182			22 007	
First	Euro-PCT-IP	LCL					19 055					20 208				20 377	
		UCL					20 957					22 523				23 638	
		EP	1 549	77	1.0620	0.0659	1 545	1 574	75	1.1344	0.0734	1 757	69	1.2514	0.0809	1 938	
		JP	1 734	19	1.3091	0.1173	2 270	2 173	19	1.3525	0.1240	2 346	19	1.3655	0.1255	2 368	
		OT	970	8	1.1890	0.0733	1 153	1 102	9	1.3423	0.0873	1 302	8	1.5488	0.1195	1 502	
Subsequent	Euro-direct	US	563	20	1.6793	0.2427	946	593	20	1.4814	0.1191	834	19	1.5379	0.1080	866	
		Total	4 816	124			6 014	5 442	123			6 239	115			6 675	
		LCL					5 258					5 542				5 898	
		UCL					6 771					6 936				7 451	
		EP	15 474	177	0.9008	0.0487	13 939	15 214	169	1.0744	0.0406	16 625	164	1.0757	0.0383	16 646	
Subsequent	Euro-PCT-IP	JP	6 082	51	1.0319	0.0381	6 276	6 522	50	1.0818	0.0387	6 580	50	1.0937	0.0432	6 652	
		OT	4 262	13	1.0500	0.1058	4 475	4 640	14	1.2356	0.1339	5 266	15	1.3875	0.1421	5 913	
		US	5 254	31	0.9546	0.1319	5 015	5 221	31	1.0348	0.1124	5 437	32	1.0691	0.1089	5 617	
		Total	31 072	272			29 705	31 597	264			33 908	261			34 828	
		LCL					27 562					31 577				32 350	
Subsequent	Euro-PCT-IP	UCL					31 848					36 238				37 307	
		EP	52 388	215	0.9897	0.0301	51 851	53 246	212	1.0533	0.0316	55 181	207	1.0954	0.0357	57 387	
		JP	30 415	71	1.0988	0.0330	33 419	38 113	70	1.1486	0.0339	34 935	70	1.1833	0.0374	36 991	
		OT	32 245	11	1.1798	0.1289	38 042	36 161	11	1.2228	0.1630	39 429	11	1.3139	0.1737	42 365	
		US	44 424	39	1.0578	0.0888	46 990	46 754	41	1.0952	0.0806	48 653	41	1.1406	0.0773	50 672	
All	Euro-direct	Total	159 472	336			170 301	174 274	334			178 198	329			186 414	
		LCL					157 018					162 649				169 087	
		UCL					193 584					193 748				203 742	
		EP	32 407				31 207	33 360				34 917				35 164	
		JP	6 270				6 587	6 760				6 923				7 035	
All	Euro-PCT-IP	OT	5 259			5 786	5 571				6 934				7 193		
		US	6 209			6 131	6 171				6 499				6 695		
		Total	50 142			49 711	51 862				55 273				56 836		
		LCL					47 366					52 671				53 865	
		UCL					52 056					57 875				59 802	
All	Euro-PCT-IP	EP	53 937			53 896	56 938				58 336				59 325		
		JP	32 149			35 689	38 285				37 280				38 355		
		OT	33 215			39 195					40 731				43 866		
		US	44 987			47 936					49 488				51 538		
		Total	164 288			176 316	179 716				184 437				193 088		
Grand total	Total	LCL				163 011					169 072				175 744		
		UCL				189 620					200 003				210 434		
		EP	86 344			84 703					91 856				94 485		
		JP	38 419			42 276					44 204				45 394		
		OT	38 474			44 981					47 065				51 805		
Grand total	Total	US	51 193			54 067					58 237				58 237		
		Total	214 430			226 027	231 578				239 711				249 925		
		LCL				212 517					223 930				232 326		
		UCL				239 536					255 492				267 522		
		Growth from 2010				5.4%		8.0%				11.8%				16.6%	
Implied Euro-PCT-IP					76.0%		77.6%				76.9%				77.3%		
Deviation in % of forecast					6.0%						6.6%				7.0%		

Random group (including critical comments)
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															
			2010		2011				2012				2013					
Filing type	Filing route	Res. bloc	Actual filings	Cases 11	Q-index 11	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index 12	S.E. 12	Predicted filings	Cases 13	Q-index 13	S.E. 13	Predicted filings		
First	All	EP	18 482	121	1.0454	0.0406	19 321	19 720	114	1.1114	0.0442	20 542	109	1.1661	0.0488	21 551		
		JP	1 922	20	1.6775	0.1939	3 225	2 411	20	1.7723	0.2071	3 407	20	1.8494	0.2209	3 555		
		OT	1 967	5	1.1247	0.0623	2 212	2 033	6	1.3906	0.1074	2 735	5	1.7493	0.1775	3 441		
		US	1 515	19	1.1499	0.0670	1 742	1 543	19	1.2064	0.0733	1 828	19	1.2526	0.0757	1 898		
		Total	23 886	165			26 500	25 707	159			28 512	153			30 445		
LCL						24 478					26 141				27 544			
UCL						28 522					38 334				33 342			
Subsequent	All	EP	67 862	195	0.9500	0.0370	64 470	68 460	188	1.0286	0.0299	69 802	185	1.0539	0.0333	71 516		
		JP	36 497	75	1.0585	0.0294	38 632	44 635	73	1.1190	0.0305	40 841	73	1.1527	0.0349	42 068		
		OT	36 507	13	1.2626	0.1615	46 093	40 801	13	1.5281	0.1946	55 788	13	1.7233	0.2077	62 911		
		US	49 678	40	0.8561	0.1309	42 530	51 975	42	0.8737	0.1463	43 406	42	0.8794	0.1687	43 687		
		Total	190 544	323			191 725	205 871	316			209 837	313			220 183		
LCL						172 477					184 108				189 400			
UCL						210 972					235 565				250 962			
Grand total	Total	EP	86 344				83 791	88 181				90 343				93 068		
		JP	38 419				41 856	47 046				44 248				45 623		
		OT	38 474				48 305	42 833				58 523				66 352		
		US	51 193				44 273	53 518				45 234				45 594		
		Total	214 430				218 225	231 578				238 348				250 627		
LCL						198 871					212 511				219 707			
UCL						237 578					264 186				281 544			
Growth from 2010							1.8%				8.0%				16.9%			
Deviation in % of forecast							8.9%				10.8%				12.3%			

Table 15: Forecasts for EPO filings – Random group, broken down by residence bloc (Euro-direct and PCT-IP filings combined)

Random group (excluding critical comments)
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													
			2010		2011				2012				2013			
Filing type	Filing route	Res. bloc	Actual filings	Cases 11	Q-index 11	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index 12	S.E. 12	Predicted filings	Cases 13	Q-index 13	S.E. 13	Predicted filings
First	Euro-direct	EP	16 933	157	1.0210	0.0266	17 289	18 146	154	1.0969	0.0349	18 574	150	1.1053	0.0444	18 716
		JP	188	7	2.2349	0.3221	420	238	7	2.4811	0.3162	466	7	2.6410	0.3183	497
		OT	997	6	1.3728	0.1798	1 369	931	6	1.7462	0.1614	1 741	6	2.0298	0.1833	2 024
		US	952	13	1.2500	0.1682	1 190	950	11	1.1211	0.0556	1 067	11	1.1424	0.0586	1 088
		Total	19 070	183			20 267	20 265	178			21 849	174			22 324
LCL					19 136					20 418				20 498		
UCL					21 409					23 279				24 151		
First	Euro-PCT-IP	EP	1 549	75	0.9369	0.1807	1 451	1 574	74	0.9804	0.1845	1 519	68	1.0603	0.1998	1 642
		JP	1 734	18	1.3920	0.1526	2 414	2 173	18	1.4885	0.1805	2 581	18	1.5541	0.2063	2 695
		OT	970	7	1.2113	0.0808	1 175	1 102	8	1.3813	0.0954	1 340	7	1.6230	0.1313	1 574
		US	563	19	1.5876	0.2721	894	593	19	1.4272	0.1604	804	18	1.4814	0.1615	834
		Total	4 816	119			5 934	5 442	119			6 244	111			6 746
LCL					4 882					5 093				5 351		
UCL					6 966					7 394				8 141		
Subsequent	Euro-direct	EP	15 474	166	0.8657	0.0618	13 396	15 214	158	1.0656	0.0425	16 490	153	1.0613	0.0401	16 423
		JP	6 082	50	1.0436	0.0389	6 347	6 522	49	1.0883	0.0416	6 619	49	1.0984	0.0457	6 681
		OT	4 262	11	0.9727	0.1344	4 146	4 640	11	1.1326	0.1308	4 827	11	1.2368	0.1394	5 271
		US	5 254	29	0.9541	0.1889	5 013	5 221	29	0.9574	0.2119	5 030	30	0.9521	0.2389	5 002
		Total	31 072	256			28 902	31 597	247			32 967	243			33 377
LCL					26 120					30 064				30 192		
UCL					31 684					35 909				36 561		
Subsequent	Euro-PCT-IP	EP	52 388	203	0.9464	0.0480	49 579	53 246	198	0.9954	0.0555	52 149	194	1.0300	0.0586	53 961
		JP	30 415	68	1.0983	0.0340	33 404	38 113	68	1.1521	0.0343	35 041	68	1.1862	0.0377	36 079
		OT	32 245	8	1.0151	0.0904	32 731	36 161	8	1.0161	0.1205	32 765	8	1.0758	0.1175	34 689
		US	44 424	37	1.0505	0.0919	46 665	46 754	39	1.0920	0.0823	48 512	39	1.1426	0.0788	50 757
		Total	159 472	316			162 379	174 274	313			168 467	309			175 485
LCL					150 870					155 785				162 337		
UCL					173 809					181 150				188 634		
All	Euro-direct	EP	32 407				30 685	33 360				35 064				35 138
		JP	6 270				6 767	6 760				7 086				7 177
		OT	5 259				5 514	5 571				6 568				7 295
		US	6 206				6 203	6 171				6 098				6 090
		Total	50 142				49 169	51 862				54 816				55 700
LCL					46 162					51 580				52 025		
UCL					52 176					58 062				59 372		
All	Euro-PCT-IP	EP	53 937				51 031					53 668				55 603
		JP	32 149				35 818					37 623				38 775
		OT	33 215				33 906					34 105				36 263
		US	44 987				47 559					49 316				51 591
		Total	164 288				168 314	179 716				174 711				182 232
LCL					156 756					161 977				169 005		
UCL					179 871					187 445				195 454		
Grand total	Total	EP	86 344				81 715					88 732				90 741
		JP	38 419				42 586					44 708				45 952
		OT	38 474				39 420					40 673				43 558
		US	51 193				53 762					55 413				57 681
		Total	214 430				217 483	231 578				229 527				237 932
LCL					205 541					216 388				224 205		
UCL					229 425					242 666				251 654		
Growth from 2010								8.0%			7.0%			11.0%		
Implied Euro-PCT-IP							77.4%	77.6%					76.1%			76.6%
Deviation in % of forecast							5.5%						5.7%			5.8%

Table 16: Forecasts for EPO filings – Random group excluding companies with critical comments, broken down by residence bloc

4.4 Analysis by date of response

Most of the Random group estimates this year exhibit somewhat larger deviations than those seen in the 2010 survey and earlier years. While the reason for this could simply be a larger overall variance of assessments among respondents, another possible explanation is a decisive shift in applicant sentiment during the fieldwork period which lasted from May to September 2011. To highlight this observed change in sentiment, all of this survey's forecast approaches were also carried out separately on two subsets of the full data set. The "early" subset contains all applicant responses received before 1 August 2011, and the "late" subset contains all responses on or after that date. For the Random group, 337 responses are contained in the "early" subset and 423 responses in the "late" subset (for the Biggest group, there were 70 responses in the "early" subset and 98 responses in the "late" subset). **Table 17** shows summary results for the "early" subset and **Table 18** shows summary results for the "late" subset, and can be compared to **Table 1** which was based on analyses employing the full data set. Strikingly, for the "early" subset, all one-year growth forecasts were positive, whereas for the "late" subset, all drop notably and some turn negative. Biggest group estimates remain more consistent between the periods than estimates based on the Random group. In terms of one-year predictive accuracy and when comparing RMSEF values, estimates based on the "early" subset perform better than those based on the "late" data set.

It is also interesting to compare shifts in applicant sentiment by date of response broken down by residence bloc. To this end, **Table 19** shows the Q-indices for Random group cases including critical comments¹⁵. Looking at the percentage point changes from "early" to "late", it becomes apparent that there were strong and opposing shifts in applicant sentiment by residence bloc. Late responses from the EP bloc shifted most strongly to the negative, with an astonishing change of -19 percentage points for one-year growth. On the other hand, applicants from the JP, OT and US residence blocs turned more positive in the late period. Possible explanations for these observations include a deepening of the European sovereign debt crisis during the summer of 2011, coupled with sizeable setbacks for most European stock markets. At the same time, Japan appeared to recover from the earthquake and ensuing tsunami somewhat more quickly than had been feared by some. Finally, the recovery from the 2008 financial crisis appeared to gradually manifest itself in the United States.

¹⁵ Detailed Q-Indices shown in Table 19 are those leading to the summary line labelled "Included / Random / Residence bloc" in Table 17 and Table 18.

Comparison of forecasts: Growth from 2010
Euro-direct and PCT-IP

			Year					
Qualifying comments	Group	Breakdown	2011		2012		2013	
			Growth rate	Deviation*	Growth rate	Deviation*	Growth rate	Deviation*
Included	Biggest	None	3.4%		9.0%		15.2%	
Included	Biggest	Residence bloc	3.7%		9.8%		16.0%	
Included	Random	None	6.4%	3.9%	14.1%	4.4%	17.9%	4.7%
Included	Random	None (winsorized)	4.9%	3.0%	13.2%	3.6%	17.5%	4.2%
Included	Random	None (Euro-direct and PCT-IP filings combined)	2.6%	5.5%	9.9%	6.4%	13.6%	7.5%
Included	Random	Residence bloc	5.2%	3.2%	13.2%	3.9%	17.1%	4.7%
Included	Random	Residence bloc (winsorized)	4.5%	2.7%	12.6%	3.2%	16.5%	3.8%
Included	Random	Residence bloc (ED and PCT-IP filings combined)	12.6%	14.8%	26.2%	24.9%	40.4%	29.7%
Excluded	Biggest	None	3.3%		8.9%		15.1%	
Excluded	Biggest	Residence bloc	3.7%		9.7%		15.9%	
Excluded	Random	None	3.3%	3.3%	10.5%	3.7%	14.1%	4.3%
Excluded	Random	None (Euro-direct and PCT-IP filings combined)	1.5%	5.7%	8.0%	6.6%	11.5%	7.8%
Excluded	Random	Residence bloc	3.3%	3.1%	11.1%	3.8%	14.9%	4.7%
Excluded	Random	Residence bloc (ED and PCT-IP filings combined)	9.3%	16.2%	13.6%	14.4%	24.5%	18.5%

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

Table 17: Predicted growth rates for Euro-direct and PCT-IP filings by forecasting method based on the “early” subset

Comparison of forecasts: Growth from 2010
Euro-direct and PCT-IP

			Year					
Qualifying comments	Group	Breakdown	2011		2012		2013	
			Growth rate	Deviation*	Growth rate	Deviation*	Growth rate	Deviation*
Included	Biggest	None	2.5%		8.1%		11.9%	
Included	Biggest	Residence bloc	2.7%		8.0%		11.5%	
Included	Random	None	-4.5%	9.7%	1.5%	10.4%	4.4%	10.7%
Included	Random	None (winsorized)	-2.0%	6.6%	3.8%	6.2%	6.8%	6.5%
Included	Random	None (Euro-direct and PCT-IP filings combined)	-5.2%	8.5%	1.6%	6.6%	4.0%	6.9%
Included	Random	Residence bloc	2.8%	10.4%	10.0%	13.6%	14.7%	16.2%
Included	Random	Residence bloc (winsorized)	2.7%	8.0%	7.5%	7.4%	11.3%	8.1%
Included	Random	Residence bloc (ED and PCT-IP filings combined)	-1.9%	9.0%	6.2%	10.1%	10.2%	10.7%
Excluded	Biggest	None	2.4%		8.2%		12.2%	
Excluded	Biggest	Residence bloc	2.3%		7.9%		11.4%	
Excluded	Random	None	-5.7%	10.1%	0.5%	10.8%	3.3%	11.1%
Excluded	Random	None (Euro-direct and PCT-IP filings combined)	-6.3%	8.9%	0.5%	6.9%	2.7%	7.1%
Excluded	Random	Residence bloc	-1.6%	7.3%	3.8%	7.2%	6.9%	7.2%
Excluded	Random	Residence bloc (ED and PCT-IP filings combined)	-5.2%	7.7%	1.6%	7.8%	4.8%	8.2%

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

Table 18: Predicted growth rates for Euro-direct and PCT-IP filings by forecasting method based on the “late” subset

Random group (including critical comments)
Breakdown by residence bloc
Q-indices

Res. bloc	Growth rates “Early” subset			Growth rates “Late” subset			Difference in growth rates		
	Q-index 11	Q-index 12	Q-index 13	Q-index 11	Q-index 12	Q-index 13	Q-index 11	Q-index 12	Q-index 13
EP	1.0629	1.1401	1.1652	0.8738	0.9612	0.9879	-0.1891	-0.1789	-0.1772
JP	1.0619	1.1639	1.2173	1.1677	1.1876	1.2115	0.1058	0.0237	-0.0058
OT	1.0645	1.1400	1.1831	1.1716	1.3374	1.4584	0.1071	0.1974	0.2753
US	1.0164	1.0866	1.1361	1.0758	1.0902	1.1335	0.0594	0.0035	-0.0025
Total	1.0519	1.1316	1.1708	1.0281	1.1000	1.1471	-0.0238	-0.0316	-0.0237

Table 19: Random group Q-Index comparison of “early” and “late” partitions based on the analysis with residence bloc breakdown and employing all cases including those with critical comments

5 Forecasts for PCT regional phase applications

The results for PCT regional phase applications at the EPO were obtained from question (j) in **Part B** of the questionnaire (see **Annex I**). The forecasts for Euro-PCT-RP filings are calculated both for the Biggest group sample and the Random group sample, applying the Composite index and the Q index, respectively. No separate questions on first filings and subsequent filings were asked regarding Euro-PCT-RP applications. Unless explicitly stated otherwise, the results for the Random group are based on the full version of the dataset that includes cases with critical comments.

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 20**) and in terms of absolute numbers of filings (**Table 21**). Firstly, Euro-PCT-RP filings are estimated for the Biggest group with no subsidiary breakdown (**Table 22**) and broken down by residence bloc (**Table 23**). Then a series of tables give forecasts for Euro-PCT-RP filings from the Random group. Q indices for the Random group sample are calculated with no subsidiary breakdown using the full Random group dataset including cases with a critical code (**Table 24**) and excluding companies with a critical code (**Table 25**). The same analysis is repeated with the Euro-PCT-RP filings itemised by residence bloc using the full dataset (**Table 26**) and again using only those respondents without critical codes (**Table 27**).

Comparing the RMSEF of Random group forecasts, the analysis without residence bloc breakdown consistently produces the best values and should thus be considered superior. The estimate without subsidiary breakdown shown in **Table 24** thus continues to be the preferred estimate for PCT-RP applications. It should be noted, however, that as was the case this year for PCT-IP and Euro Direct filings, estimates employing a residence bloc breakdown (which is the recommended forecast for PCT-IP and Euro Direct filings this year) are somewhat more optimistic than the recommended approach without any breakdown. Looking at the residence bloc breakdown, it can be seen that applicants from the US and OT residence blocs are particularly optimistic with respect to PCT-RP filings.

Regardless of the forecast method used, it is notable that two and three-year growth rate estimates exhibit a strong jump when compared to the one-year growth estimate for PCT regional phase filings.

Comparison of forecasts: Growth from 2010
Euro-PCT-RP

Qualifying comments	Group	Breakdown	2011		2012		2013	
			Growth rate	Deviation*	Growth rate	Deviation*	Growth rate	Deviation*
Including	Biggest	None	0.0%		14.5%		18.0%	
Including	Biggest	Residence bloc	1.0%		10.6%		15.0%	
Including	Random	None	0.2%	4.1%	7.0%	7.1%	6.7%	12.9%
Including	Random	Residence bloc	3.7%	5.4%	11.6%	7.7%	13.7%	10.6%
Excluding	Biggest	None	0.0%		1.4%		4.4%	
Excluding	Biggest	Residence bloc	1.0%		0.7%		4.5%	
Excluding	Random	None	0.0%	4.1%	3.6%	6.4%	2.9%	12.9%
Excluding	Random	Residence bloc	3.2%	5.4%	8.3%	7.4%	10.1%	10.7%

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

Table 20: Overview of predicted growth rates for Euro-PCT-RP applications by forecasting method

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

Qualifying comments	Group	Breakdown	2011				2012			2013		
			Predicted filings	LCL	UCL	RMSEF*	Predicted filings	LCL	UCL	Predicted filings	LCL	UCL
Including	Biggest	None	79 713				91 241			94 033		
Including	Biggest	Residence bloc	80 497				88 100			91 605		
Including	Random	None	79 855	76 616	83 093	1 704	85 232	79 186	91 278	85 012	74 080	95 944
Including	Random	Residence bloc	82 656	78 190	87 123	3 298	88 928	82 105	95 750	90 572	80 979	100 166
Excluding	Biggest	None	79 688				80 757			83 160		
Excluding	Biggest	Residence bloc	80 465				80 220			83 281		
Excluding	Random	None	79 653	76 370	82 937	1 786	82 585	77 324	87 846	81 996	71 428	92 563
Excluding	Random	Residence bloc	82 205	77 752	86 657	2 982	86 300	79 875	92 724	87 740	78 391	97 088
Actual filings			80 273									

*) RMSEF: Root mean squared error of forecast

Table 21: Overview of predicted filing numbers for Euro-PCT-RP applications by forecasting method

Biggest group (including critical comments)
No subsidiary breakdown
Composite Indices

			Year									
Patent Office	Filing route	Res. bloc	2010	2011				2012			2013	
			Actual filings	Cases 11	Index 11	Predicted filings	Actual filings	Cases 12	Index 12	Predicted filings	Cases 13	Index 13
EPO	Euro-PCT-RP	Total	79 681	137	1.0004	79 713	80 273	119	1.1451	91 241	115	1.1801
Growth from 2010						0.0%	0.7%			14.5%		18.0%

Table 22: Forecasts for Euro-PCT-RP applications - Biggest group (no subsidiary breakdown)

Biggest group (including critical comments)
Breakdown by residence bloc
Composite indices

			Year									
Patent office	Filing route	Res. bloc	2010	2011				2012			2013	
			Actual filings	Cases 11	Index 11	Predicted filings	Actual filings	Cases 12	Index 12	Predicted filings	Cases 13	Index 13
EPO	Euro-PCT-RP	EP	35 681	80	0.9878	35 246	35 641	68	1.1721	41 821	64	1.1937
		JP	12 073	37	1.0231	12 352	12 052	32	1.1663	14 081	32	1.2305
		OT	8 223	2 *	1.0004	8 226	8 679	2 *	1.1451	9 416	2 *	1.1801
		US	23 704	18	1.0409	24 673	23 901	17	0.9611	22 782	17	1.0316
Total		Total	79 681	137		80 497	80 273	119		88 100	115	
Growth from 2010						1.0%	0.7%			10.6%		15.0%

Table 23: Forecasts for Euro-PCT-RP applications - Biggest group (broken down by residence bloc)

Random group (including critical comments)
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									
Patent office	Filing route	Res. bloc	2010	2011				2012			2013	
			Actual filings	Cases 11	Q-index 11	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index 12	S.E. 12	Predicted filings
EPO	Euro-PCT-RP	Total	79 681	434	1.0022	0.0207	79 855	80 273	388	1.0697	0.0362	85 232
		LCL					76 616					79 186
		UCL					83 093					91 278
							0.2%	0.7%				7.0%
Growth from 2010							4.1%					7.1%
Deviation in % of forecast												12.9%

Table 24: Forecasts for Euro-PCT-RP applications - Random group (no subsidiary breakdown)

Random group (excluding critical comments)
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									
Patent office	Filing route	Res. bloc	2010	2011				2012			2013	
			Actual filings	Cases 11	Q-index 11	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index 12	S.E. 12	Predicted filings
EPO	Euro-PCT-RP	Total	79 681	410	0.9997	0.0210	79 653	80 273	363	1.0364	0.0325	82 585
		LCL					76 370					77 324
		UCL					82 937					87 846
							0.0%	0.7%				3.6%
Growth from 2010							4.1%					6.4%
Deviation in % of forecast												12.9%

Table 25: Forecasts for Euro-PCT-RP applications - Random group excluding cases with critical comments (no subsidiary breakdown)

Random group (including critical comments)
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													
			2010		2011				2012				2013			
Patent Office	Filing route	Res. bloc	Actual filings	Cases 11	Q-index 11	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index 12	S.E. 12	Predicted filings	Cases 13	Q-index 13	S.E. 13	Predicted filings
EPO	Euro-PCT-RP	EP	35 681	286	0.9711	0.0227	34 651	35 641	250	1.0274	0.0466	36 659	240	0.9984	0.0914	35 624
		JP	12 073	72	1.0286	0.0468	12 419	12 052	66	1.1482	0.0362	13 862	66	1.1607	0.0402	14 013
		OT	8 223	16	1.0889	0.1249	8 954	8 679	16	1.3971	0.1074	11 489	17	1.3992	0.1195	11 506
		US	23 704	60	1.1236	0.0644	26 633	23 901	54	1.1357	0.1002	26 920	53	1.2415	0.1115	29 429
Total		Total	79 681	434			82 656	80 273	388			88 928	376			90 572
		LCL					78 190					82 105				80 979
		UCL					87 123					95 750				100 166
Growth from 2010							3.7%	0.7%				11.6%				13.7%
Deviation in % of forecast							5.4%					7.7%				10.6%

Table 26: Forecasts for Euro-PCT-RP applications - Random group (broken down by residence bloc)

Random group (excluding critical comments)
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													
			2010		2011				2012				2013			
Patent Office	Filing route	Res. bloc	Actual filings	Cases 11	Q-index 11	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index 12	S.E. 12	Predicted filings	Cases 13	Q-index 13	S.E. 13	Predicted filings
EPO	Euro-PCT-RP	EP	35 681	267	0.9677	0.0230	34 527	35 641	230	0.9806	0.0397	34 989	220	0.9445	0.0920	33 702
		JP	12 073	70	1.0257	0.0471	12 383	12 052	66	1.1461	0.0366	13 836	64	1.1587	0.0406	13 989
		OT	8 223	15	1.0402	0.1236	8 553	8 679	14	1.2791	0.0946	10 518	14	1.2770	0.1075	10 501
		US	23 704	58	1.1281	0.0650	26 741	23 901	53	1.1372	0.1011	26 956	51	1.2465	0.1132	29 548
Total			79 681	410			82 305	80 273	363			86 300	349			87 740
			LCL				77 752					79 875				78 391
			UCL				86 657					92 724				97 088
Growth from 2010							3.2%	0.7%				8.3%				10.1%
Deviation in % of forecast							5.4%					7.4%				10.7%

Table 27: Forecasts for Euro-PCT-RP applications - Random group excluding cases with critical comments (broken down by residence bloc)

6 Conclusions and Outlook

The data for this survey were collected from May to September 2011. During this time span, the European sovereign debt crisis deepened, dragging down most major European stock markets. At the same time, Japan continued to recover from the early 2011 earthquake and the associated tsunami and the United States began to show first signs of an economic recovery after the financial crisis of 2008.

Thus, the 2011 survey occurred during a time of increased uncertainty when compared to the 2010 survey. In addition, there are clear signs in the data this year that applicant sentiment shifted during the course of fieldwork. European respondents became more pessimistic, whereas sentiment for other residence blocs actually improved. Thus it is intuitive that this year's recommended forecasts employ a residence bloc breakdown which is best able to handle differing growth expectations between residence blocs.

As a result, the forecasts reported in this survey are associated with larger variability than in previous years, both in terms of agreement between different forecast approaches and in terms of estimated standard error for a given approach.

In previous years, respondents from the Biggest group were often more conservative in terms of growth estimates when compared to estimates based on the Random group. This year, however, Biggest group applicants were not found to be more pessimistic than Random group applicants. Thus, Biggest group applicants this year stabilised over all forecasts, as shifts in sentiment over time were clearly weaker in the Biggest group than in the Random group.

Ultimately, our recommended forecast this year predicts strong one-year growth and continuing growth thereafter, but the variability observed and lower growth projections (including some negative ones) of other forecast approaches should serve as a warning to monitor the results presented here closely.

As uncertainty about a solution of the European debt crisis and its impact on the global economy remains, the annual patent filings surveys are a crucial element in updating and validating growth expectations, and in promptly identifying additional shifts in expectations or sentiment.

The EPO uses the forecasts of this survey to allocate its resources and capacities in order to optimise the patent examination process. We would thus like to thank all participants of this year's survey for their valuable time and input. We realise that filling in the questionnaire diligently and fully is a time-consuming process. In order to be able to continue with a well-founded resource allocation process at EPO, we would also like to appeal to all applicants that might be approached in the future to kindly respond in full to the questions.

Please read the following Annexes for information on the mechanism and execution of the survey (Annexes I to V), for results on respondents' profiles (Annex VI), and answers to additional questions (Annexes VII to VIII). An analysis of company economic attributes, such as R&D budgets, inventions, inventors, and first filings, is given in Annex VII. Applicants were also asked to assess certain issues regarding divisional filings, the Unitary Patent, and patent portfolios (Annex VIII). Annex IX reports on possible correction factors to adjust for the survey's inability to pick up new and dropped out applicants. Annex X reports on the forecasts from the Random group using alternative response-based Poisson weights. Finally, Annex XI gives details on this year's survey's population and sample sizes.

7 ANNEX I: Methodological approach, data collection procedure, and questionnaire

7.1 Parent population and target persons

The **parent population** of the Patent Filings Survey comprises applicants who filed a patent application at the EPO in 2010. These applicants are mainly companies, but there are also some educational organisations and private inventors. The applicants come from all over the world, but are mostly residents of Europe, the US, and Japan.

The following table shows the distribution of the applicant population in 2010, broken down by residence bloc (applicants for Euro-direct and Euro-PCT-RP, here excluding divisional filings.¹⁶).

Residence bloc	Applicants (population)	%
EPC countries	21 880	55.2%
Japan	2 952	7.4%
USA	9 252	23.4%
Other countries	5 545	14.0%
Total	39 646	100.0%

Table 28: Population size (applicants for Euro-direct and Euro-PCT-RP)

The following table shows the probability distributions of the same applicant population in terms of numbers of filings made per applicant, with separate distributions shown per bloc of origin and overall.

class	lb	ub	EP	JP	OT	US	TOTAL
1	1	1	0.69	0.52	0.75	0.64	0.68
2	2	2	0.14	0.15	0.12	0.15	0.14
3	3	3	0.05	0.09	0.05	0.06	0.06
4	4	5	0.05	0.08	0.03	0.06	0.05
5	6	9	0.03	0.06	0.02	0.04	0.03
6	10	19	0.02	0.06	0.01	0.03	0.02
7	20	39	0.01	0.03	0.00	0.01	0.01
8	40	and higher	0.01	0.02	0.00	0.01	0.01

Table 29: Grouped bloc-wise probabilities of existence of specific filing counts

¹⁶ These use applicant codes from the database, as were also used for selecting the samples. The counts are slightly higher than those obtained using semi-harmonised applicant names, as for example in **Annex XI**.

Details of each selected applicant were provided by the EPO, including the name of the company/person, address and further information from the EPO database, such as number of filings at the EPO in 2010.

The **target persons** within companies are the head of the intellectual property department, an in-house or external patent agent, a member of the R&D department, or a member of management.

7.2 Questionnaire

The questionnaire used for data collection is printed below. It is broadly similar to the one used in 2010, and covers the following key topics:

- **Company details**, such as organisation type (**part A**), number of employees, size of total sales (**part C**), founding year and year when an organisation started applying for a patent at the EPO (**part E**).
- **Current and future filings (part B)**, split by
 - First and subsequent filings
 - Different procedures: Euro-direct, PCT international and national/regional phase, and national procedures
 - Different countries: Germany, Japan, the US, Republic of Korea, China, and other countries
- **Research and development budget as well as patenting activities (part C)**, split by the 14 joint cluster organisational groupings used for examinations at the EPO; total number of inventions considered for patent applications, percentage of inventions that are patented, total number of staff employed at an organisation, number of staff that were involved in making inventions, and number of inventive staff that are female / younger than 40 years.
- **Issues relating to divisional filings and proposed Unitary Patent system in Europe (part D)**: attitude towards making divisional filings and the proportion of divisional filings, effects of a possible European Union Unitary Patent on business operations, recommended additional factors for a Unitary Patent, and effects of different fee scenarios on the registration of granted EPO patents as Unitary Patents.
- **Patent portfolio (part E)**: quantity and purpose of patents, number of additionally purchased and sold patents, amount of time a patent or European patent is kept in the portfolio, and finally, a rating of the influence of the Unitary Patent on the portfolio size.
- General **comments** regarding the questionnaire (**part F**). A summary of the comments received is included in **Annex II**.

Basic results of **Section D** and **E** are documented in **Annex VIII**.

There were several changes in the main part B of the questionnaire: The assortment of countries mentioned for national applications was modified, as United Kingdom and France dropped out, but Republic of Korea was added. In the section for PCT applications entering the national/regional phase, the Korean Intellectual Property Office was added. Furthermore, an additional question was appended below the first table. It asks whether the respondent was able to complete the tables or not. The questions in Part C were the

same as the ones in the previous year, except that two questions on breakdowns of inventive staff were added. The questions on company economic attributes are analysed in Annexes VI and VII.

The questionnaire was accompanied by an **official letter of recommendation signed by the Head of Controlling at the EPO**, 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 results would be published on the internet. Since 2010, the letter has stated that guesses are welcome in case no exact figures can be retrieved (up to 2009, respondents were asked to fill in at least part B of the questionnaire in such cases). In addition, a **cover letter from Synovate** provided information on the survey procedure.

Both the letter and the questionnaire were personalised, i.e. the company name, the address, the name of the contact person, and an identification number were printed on each questionnaire and reference letter. To cover the requirements of the contact persons, the letters and questionnaires sent were available in English, French, German, and Japanese. Furthermore, it was decided to cover more languages in 2011, thus the letters and questionnaires were also available in (both simplified and traditional) Chinese, Italian, and Spanish.

Although the questionnaire was rather similar to the one used in 2010, it was still tested in 15 pre-test interviews (English and German versions). For this purpose, the correct contact persons were researched and contacted by telephone. If they agreed to take part in the survey, the draft questionnaire was sent via fax and discussed by phone in a follow-up call. This meant that Synovate not only received their answers but had a follow-up talk about the questionnaire as well. The pre-test interviews resulted in some changes in wording. The answers given in the pre-test interviews were included in the analysis. There was also one later returned questionnaire out of the pre-test contacts (without the follow-up talk) which was then used as usual return.

The English version of the questionnaire is displayed below:



ID / GROUP
FA
LEITER PATENTABTL
ABTEILUNG
STRASSE

ORT
LAND

Questionnaire

for Patent Filings Survey

Please return to the EPO:
+49-89-2399-1333
filingsurvey@epo.org

We assure you that all the information you provide will be treated as strictly confidential by the EPO as well as by Synovate, and will be used solely for the purposes of neutral, general statistical evaluation.

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.

For which company/company part will you answer the questionnaire?

- ☐ the company/company part mentioned by Synovate
☐ smaller company/company part, please specify: _____
☐ bigger company/company part, please specify: _____

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

A. Contact Details

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: _____

Please indicate the nature of the entity for which you will answer the following questions in Sections B to F of this questionnaire. Please cross the box that applies.

- Type: Private enterprise/commercial sector ☐
Public sector:
- Government-performed R&D ☐
- Higher educational sector ☐
- Other public sector ☐
Other, please specify: _____ ☐

A summary of the results of the survey will be published in early 2012 at <http://www.epo.org/service-support/contact-us/surveys/future-filings.html>. We will remind you of this if you could please give us your E-mail address under Section A of this questionnaire.

B. Estimation of your levels of patenting activity throughout the world

Please give information on numbers of filings in the two tables below. In case you are unable to give actual figures, indicate anticipated yearly growth rates as percentages (i.e. 2011 compared with 2010; 2012 compared with 2011; 2013 compared with 2012).

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. For each row with any patenting activity, always complete the whole row, i.e. for filings types and years with no activity fill in a zero (0).

		Filed		Expected		Expected		Expected	
		2010		2011		2012		2013	
		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)								
	Japan (d)								
	United States ³ (e)								
	Republic of Korea (f)								
	China (g)								
	Other countries (h)								
Worldwide Total First Filings (i)									

Were you able to complete the table above with all the requested information regarding your activities?

☐ Yes ☐ No

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 Exclude any multiple counting that is due to the retrospective filing of divisional applications.

³ Include provisional filings at USPTO in the cells for first filings of this row.

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 2010	Expected 2011	Expected 2012	Expected 2013
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)				
China State Intellectual Property Office (SIPO) (n)				
Korean Intellectual Property Office (KIPO) (o)				

If you have any comments on this part please put them in Section F on page 5.

C. Your activities in total and in various sectors

Can you give us more information on your **business activities**, including **sales, staff, inventions, R&D budget** as well as **first patent filings**? This will help EPO to develop detailed plans that use relationships between various items in the major technological categories of industrial research. Please indicate...

- (a) the approximate size of your total sales throughout the world in 2010
(specify currency):
- (b) the total number of distinct inventions in 2010 that led your organisation to consider making patent applications:
- (c) the percentage of these distinct inventions in 2010 that are actually leading you to file for one or more patents: %

We are interested in classifying your activities in terms of **technical domains** according to organisational groupings of examination departments at the European Patent Office. Please complete the following table as far as you can, by indicating...

(d) ...which of the following you believe contain(s) the main area(s) of your business. Please tick appropriate box(es).	(e) ...the approximate size of your R&D budget 2010 (specify currency)	(f) ...the number of first patent filings that you actually made in 2010 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)		
☐ 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 in Section F on page 5.

* The Total for first patent filings provided at the bottom of this column should correspond to the number of worldwide total first filings provided in part B of the questionnaire, line (i).

(g) Please indicate...

the approximate total number of staff employed at your organisation at the end of 2010:

the number of these staff that were directly involved in making inventions that might be patented:

the number of your inventive staff that are younger than 40 years old:

the number of your inventive staff that are female:

D. Other issues: Divisional filings and proposed Unitary Patent system in Europe(a) In 2010 a time limit was introduced regarding **divisional applications at the EPO** that are based on existing applications there. Has this time limit **changed your attitude** towards making divisional filings?Yes ☐No ☐Not relevant ☐(b) What is the **proportion of divisional filings** (out of your total EPO filings including divisional filings) that you made/will make...

in 2009 and earlier years:%

in 2011 and later years:%

(c) The European Union is moving forward to implement the **Unitary Patent**. This will be an additional option for EPO patents after grant, where the registration will be made in one place and give protection simultaneously in about 25 European countries. **How** would you rate the **effects** that the following features of the Unitary Patent system will have on your business operations, bearing in mind also the benefits to your competitors? Please tick the relevant boxes (only one per row) of the scale from 1 to 5.

	Bad effect 1	2	No effect 3	4	Good effect 5
1. Reduction of translation costs at registration	☐	☐	☐	☐	☐
2. Possible reduction of total (internal and external) patent attorney costs	☐	☐	☐	☐	☐
3. A single renewal fee only to be paid periodically to one agency	☐	☐	☐	☐	☐
4. Simultaneous patent coverage for several countries	☐	☐	☐	☐	☐

(d) For you, what other **additional factors** would you recommend including in a Unitary Patent system?

(e) Assume for now that the Unitary Patent will become available for EPO patents granted as from 1st January 2012. **What proportion of your granted EPO patents in 2012 will you register as Unitary Patents** under all three of the following alternative possible scenarios?Renewal fee for the Unitary Patent to be set as the sum of the renewal fees under the current system forProportion of EPO grants in 2012 to register as Unitary Patents**Scenario 1:-** 6 most commonly validated countries

in %:

Scenario 2:- 9 most commonly validated countries

in %:

Scenario 3:- 12 most commonly validated countries

in %:

Comments:

E. Details of company/company part and patent portfolio

Please fill out this section as far as possible on the basis of information that you have readily available.

(a) In what year was your company/company part created?

(b) In what year did your company / company part start applying for patents at EPO? *

* Do not consider any other patent offices located in Europe. Note that EPO effectively started operations in 1978.

In the following, "patents" is to include patent applications that are still under consideration at least at one Patent Office as well as those that are already granted and maintained. Please count patents for the same invention under several jurisdictions only once. If you group several inventions within your patents, please use the number of inventions covered by an EPO patent as a basis for counting your portfolio size.

(c) Please tell us approximately how many patents you currently have in your patent portfolio?.....

(d) What proportion of patents in your current portfolio are used for:

Proportion
of total portfolio

- | | |
|----------------------------------|---------|
| 1. Protecting products..... | _____ % |
| 2. Licensing out | _____ % |
| 3. Enhancing reputation | _____ % |
| 4. Setting Standards | _____ % |
| 5. Others, please specify: | _____ % |
| | _____ % |

(Please note that one patent may be used for several purposes, while others may not be in active use)

(e) What proportion of patents in your current portfolio have you bought from external sources? %

(f) How many patents that you have applied for within the last 20 years are no longer in your portfolio because you sold them?

(g) How long do you keep an average/typical patent in your portfolio? years

(h) How long do you keep an average/typical European patent (i.e. a patent resulting from a European patent application) in your portfolio? years

(i) What do you think; will the Unitary Patent as described in Part D of the questionnaire increase or decrease the number of patents in your portfolio if all other factors remain the same?

Increase ☐ Decrease ☐ No effect/stay the same ☐

Comments:

F. Comments

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

Thank you very much for your cooperation.

7.3 Data collection procedure

As in previous years, data collection was done through mailed questionnaires backed up by telephone interviews, and consisted of three steps.

7.3.1 International research of up-to-date telephone numbers

Telephone numbers were searched for the 2 738 EPO applicant addresses (Biggest and Random samples and special requests).

The following sources were used to search for telephone numbers:

- Internet search engines
- Special business pages on the internet
- Phone directories of the relevant countries
- Websites of the companies on the internet
- Directory enquiries

As in previous years, it was not possible to find out up-to-date telephone numbers for all applicants in the gross sample. It was difficult to find telephone numbers particularly for private inventors, for companies in the US and GB, and applicants in the "other countries" category.

7.3.2 Telephone contact interviews

Following the research step, telephone contact interviews were conducted with applicants whose current telephone number had been obtained. The contact interviews consisted of the following steps:

- Identifying the target person within the company or organisation who could answer the questions in the questionnaire
- Introducing the background and the purpose of the survey to the target person and requesting his/her participation
- Recording the name and fax number or, where required, e-mail address of the target person, or recording their reason for declining, where applicable.

Due to the complexity of the topics, all participants received the questionnaire in writing to enable them to look up the required figures and provide reasonable estimates. In 148 cases, the questionnaire and the accompanying letter were sent via fax or postal mail. However, the majority of applicants preferred to receive the documents via e-mail (1 701). Six applicants received the documents via fax as well as e-mail.

The main contacting phase, i.e. sending the personalised questionnaires and accompanying letters to the participants, started on 5 May 2011. Out of consideration for the tsunami and subsequent nuclear disaster happening in Japan since early 2011, this phase started later there (on 30 May 2011).

From 1 until 19 August, there was a summer break as in previous years. Fieldwork was not completely stopped at any point; nevertheless, the interviewers only conducted previously agreed calls.

7.3.3 Main interviews

The target respondents were offered several modes of returning a completed questionnaire: fax, e-mail, telephone, and post. Principally, the respondents were asked to send their questionnaire to the EPO. If this did not suit their need for data protection, they could return the questionnaire directly to Synovate. In this case, the identity was not made known to EPO. Alternatively, the respondents could opt for a telephone interview.

Most of the questionnaires were completed by the target respondents themselves and sent back to the EPO by e-mail or fax. Compared to previous years, e-mail responses increased significantly again (316 in 2009 vs. 496 in 2010 vs. 560 in 2011). A few responses (50) were collected directly through a follow-up telephone call. Proactive fieldwork was finished by 14 September 2011. However, to increase the number of responses, all completed questionnaires received by 30 September 2011 were included in the analysis. After that date, just one more questionnaire was received.

Return Type	To the EPO					To Synovate				
	Total	EPC	US	JP	OT	Total	EPC	US	JP	OT
by E-mail	393	250	56	66	21	167	105	31	9	22
by Fax	168	105	16	42	5	4	4	-	-	-
by Phone	-	-	-	-	-	50	47	1	1	1
Total	561	355	72	108	26	221	156	32	10	23

Table 30: The distribution of responses received by the EPO and by Synovate

In total, **782 interviews** were realised in 2011. The number of responses is slightly lower than last year, but higher than the responses of earlier years (804 interviews in 2010, 702 interviews in 2009, 772 interviews in 2008, 747 in 2007, and 772 in 2006). Of these 782 participants in 2011, 118 also took part in the 2010 survey (according to consolidated EPO identification numbers for the Random group and names for the Biggest group).

The following table shows the total number of applicants who were selected for the survey, the number of applicants who dropped out for various reasons, the final numbers of responses received for the total net number of applicants, and the split into Biggest and Random groups.

	Total**		Biggest		Random	
	n	%	n	%	n	%
Total gross sample	2 738	100.0	415	100.0	2 671	100.0
Addresses not found	170	6.2	2	0.5	169	6.3
Addresses found	2 568	100.0	413	100.0	2 502	100.0
Dropouts (1)	454	17.7	48	11.6	442	17.7
Adjusted sample	2 114	82.3	365	88.4	2 060	82.3
Dropouts (2)	1 332	51.9	197	47.7	1 300	52.0
Total responses/ response rate*	782	30.5	168	40.7	760	30.4

(1) Number of losses: company was identical with/included in another one already identified in the sample; an appropriate contact was not found or could not be reached; contact was sick/on vacation; company no longer exists or is being restructured, etc.

(2) Number of refusals: questionnaire not returned though promised; no time available for dealing with the matter; no interest in filling in the questionnaire; not able to collect requested data; company policy; data too confidential, etc.

*) Calculation: total responses over addresses found

**) Including 24 addresses requested by EPO joint cluster managers

Table 31: Overview of samples and responses received

During the main interview phase, the respondents were contacted several times through follow-up telephone calls in order to realise both a high response rate and quality. The follow-up calls aimed to

- arrange appointments with target persons who were difficult to reach
- remind respondents about the questionnaire
- clarify questions and help respondents to complete the questionnaire
- collect the responses by telephone, where appropriate

All contact interviews and, where applicable, main interviews were conducted centrally by telephone from the Synovate call centre in Munich. This facilitated efficient and reliable survey coordination.

All interviewers involved were either native speakers of the required languages, or speak those languages fluently. Most of them already had prior experience with patent-related topics or other EPO surveys. All 13 interviewers received a detailed briefing about the study and the contents of the questionnaire in order to prepare them for any questions from the target persons. Delegates from the EPO attended the initial briefing of the interviews.

The following table shows the distribution of responses received from different countries, to show the effects on the response rates this year of using questionnaires in more languages. Especially a rise of responses from Spain and Taiwan can be detected, which seems to be due to the availability of a questionnaire version in the local language.

BLOC	Country	2010			2011		
		Addresses found	Responses	Response rate*	Addresses found	Responses	Response rate*
EPC	Italy	123	33	27%	121	31	26%
	Spain	27	6	22%	41	13	32%
	Others	1131	489	43%	1228	467	38%
JP	Japan	284	163	57%	278	118	42%
US	US	555	88	16%	623	103	17%
OT	China (mainly simplified)	18	2	11%	33	5	15%
	Taiwan (traditional)	16	0	0%	43	9	21%
	Others	146	23	16%	201	36	18%

* Calculated over addresses found

Table 32: Overview of sample and responses received by areas receiving questionnaires in different languages

7.4 Experiences during fieldwork

During fieldwork, complex company structures were considered in order to avoid data overlaps. Multiple contacts with one and the same department through different company subsidiaries were avoided as far as possible, e.g. by carefully checking the gross sample for companies with identical or similar names.

Just as in 2010, the fieldwork in 2011 started about a month earlier than the start dates previously. The early start enabled the fieldwork staff to progress better with initiating contacts/conducting follow-up calls with the respondents prior to the summer break. However, in 2011 respondents took much more time to send back their replies so that more follow-up calls were needed to motivate contact persons.

As in previous years, the contact phase was particularly difficult in the US. The response rate for both the Biggest group and the Random group in the US was the same as in 2010, which was still lower than in 2009. This was due to the increasing difficulty to identify target persons within the companies, i.e. the extended use of mailbox systems or the policy not to put any phone call through unless a correct name of a contact person could be provided.

However, these days, the situation that interviewers only got through if they had the name of the contact person has not only been encountered in the US, but also in European countries. In addition, some applicants that had participated in the past explained that they wanted a "break" for the current year. This pattern was also seen in previous years. For some small enterprises and private inventors, the applicants found the questionnaire too difficult to fill in and more complicated than expected. Contact persons whose companies file a low number of patent applications were less willing to participate in the survey as they did not recognise the benefits.

7.5 Questionnaire checks

Each questionnaire returned was checked in detail and corrected according to rules agreed with the EPO. If necessary, verbal information provided by the respondents on the questionnaire was converted into figures. All relevant modifications were recorded on a separate change and comment list.

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.

Technical areas noted verbally in the "Others" line of Part C were allocated to one of the 14 joint clusters ex post, where possible.

7.6 Plausibility rules

To ensure that the answers given in the questionnaire were logical and consistent, some plausibility rules were set up. The rules covered the following topics:

General rules:

- 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) as well as with the total number of first filings given in part C/question f. If missing or implausible, the worldwide total of first filings was calculated according to the figures provided or deleted. The calculated sum can be interpreted as an estimation for the worldwide total of first filings.
- For non-EPC-respondents (US, JP, CN, ROK, etc.), the number of first filings at the EPO (Euro-direct/European patent applications under the EPC, line a) should not be much higher than the number of first filings at the respective home office in the same year. In addition, a non-EPC-respondent should not have more first filings at the EPO than subsequent filings at the EPO one year later.

Specific rules for "critical codes" that can lead to removal from the analysis:

Some plausibility checks resulted in "critical codes" in the electronic database that identify an answer scenario as being dubious. If the following rules were not fulfilled, the answer scenario was set as being dubious:

- 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 2012 and 2013 (lines l, m, n, o, or p) 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 2010 and 2011, respectively.
- Any scenario that gave the impression of being dubious due to other reasons.

Specific rules resulting in an analysis as combined filings only:

In addition, it was checked if there was any evidence that first and subsequent filings had not been distinguished by the respondents. Such cases were analysed as combined filings only. This refers to the following rules:

- If a respondent indicated first filings, there should be subsequent filings in the following year. If there are only figures provided for the first filings column, this probably indicates that the respondent did not distinguish first and subsequent filings but put them together.
- If a respondent indicated subsequent filings at the home office (national office of applicant residence) only, but no subsequent filings in other countries/procedures. This also may indicate that first and subsequent home office filings were put together.
- If there was a specific comment by the respondent that first and subsequent filings could not be distinguished (no case in 2011).

Such suspected combined answers could not properly be allocated or partitioned between first and subsequent filings, and unfortunately, could not be used for the detailed analyses as they are calculated for this report. Therefore, they were marked with a comment code in the data set and were included only at a higher level of aggregation with first and subsequent filings combined.

Table 33 shows the distribution of such cases total (Biggest and Random groups put together) and broken down by residence bloc. This problem is slightly more relevant for applicants from the US, JP and Other countries than for EP applicants.

	Total	EP	US	JP	OT
Total number of interviews	782	511	103	118	50
Cases without subsequent filings entered, but first filings	131 17%	74 14%	23 22%	24 20%	10 20%
Cases with subsequent filings in home office only	8 1%	0 0%	5 5%	1 1%	2 4%

Table 33: Distribution of cases that can be analysed at higher level of aggregation only

Plausibility check on future filing totals:

As last year, an additional semi-automatic plausibility check was carried out with respect to respondents' answers regarding future filing totals. For any given filing category, a flag was set if an applicant had at least ten filings in any given year and if the ratio of maximum filings to minimum filings in that category over time was four or more (comparing all pairs of years from 2009 to 2013). For each applicant that was flagged, a further inspection and a manual review of the returned questionnaire was performed. This year, no respondents were excluded from the analysis as a result of this check.

7.7 Respondents' reactions to the questionnaire

The questionnaire required a high level of commitment from the respondents. Some respondents found the questionnaire very complicated and difficult to understand. Sometimes it was impossible to gather the information requested, or data collection was perceived as being very time-consuming. As in previous years, all this resulted in a significant time lag between initial contact and response. In addition, a substantial number of follow-up calls (in many cases 8 to 12 calls) were required to remind and encourage respondents to complete the questionnaire, and to assist respondents with explanations about the questions. If respondents indicated that it was difficult to give precise quantitative answers to the questions asked, then they were asked to give educated guesses where no exact data were available.

In general, the respondents had the following difficulties when responding to the questionnaire:

- Difficulty providing the information due to unavailability of the data
 - o Some organisations do not record the requested data
 - o Data are only available for a larger part of the company than that requested
 - o Data are not recorded in the required structure
 - o Data are not available because the company is currently under transition (e.g. due to a merger)
- Difficulty providing the information due to data confidentiality
- Confusion about the terminology used in the questionnaire
- Difficulty answering the questions as they are not relevant to their organisation

7.8 Non-response analysis and response rates

7.8.1 Address qualification

The EPO provided lists containing a total¹⁷ of 2 738 selected applicants. The researchers strove to identify contact names, addresses and telephone numbers, and 2 568 addresses were confirmed. It was possible to obtain 413 telephone numbers for 415 Biggest addresses (99%) through the international research procedure. In the Random group (including target group overlap), the percentage of telephone numbers found was lower

¹⁷ Including 24 addresses requested by EPO joint cluster managers.

than that of the Biggest group but was higher than the percentage in the previous year – and thus almost on the same level as in 2009 (94% in 2011 vs. 89% in 2010 vs. 95% in 2009).

7.8.2 Losses

In 2011, 5% of the addresses found for the Biggest group were identical to, or included in, another company. A further 6% had to be classified as non-systematic losses. Cases were classified as losses if either a company or contact person was not available, or a company could not take part due to economic or organisational changes. Non-systematic losses for the Biggest group were less than half of those in 2010. In the Random group, 7% of the addresses found were identical to, or included in, another applicant in the sample. As in 2010, this rate is again lower than in 2009 (18%), as a result of the EPO's attempt to eliminate the identical addresses in the gross sample. Another 11% were non-systematic losses (2010: 14%), i.e. general drop-outs not due to a refusal of the contact person (reasons like no availability, no appropriate contact found/mailbox system, technical problems or language problems, company no longer exists, etc.).

In the Biggest group, a direct contact person could be identified for 88% of the 415 gross addresses (= "adjusted sample B", 2010 79%). This figure was lower in the Random group (77% of 2 671 gross addresses), which is also slightly better than in the previous year (72%). However, in the US and the group of Other countries (Random group), the quota of useable Random sample contacts is consistently lower than in the other countries (quotas for the US: 69%, for Other countries: 67% in 2011). For the US, a reason for this may be that the contacting phase was again extremely difficult, due to the use of mailbox systems or the policy not to put any phone call through if the calling person cannot provide a correct name of a contact person.

In absolute numbers, the useable number of contacts in the Random sample (adjusted sample B) is higher than in the previous years (2 060 addresses for the Random group in 2011 compared to 1 809 addresses in 2010, and 1 427 addresses in 2009). However, again more addresses were provided by the EPO (which resulted in 2 671 addresses in the gross sample in 2011 compared to 2 530 in 2010, and 2 029 in 2009).

7.8.3 Response rates

As in previous years, the general response rate was higher in the Biggest group than in the Random group in 2011. In terms of addresses found, **Table 31** shows that the overall response rate is 30.5%, 40.7% in the Biggest group, and 30.4% in the Random group.

In the following more detailed **Tables 33 and 34**, response rates are given in terms of percentages against adjusted sample B (equivalent to "adjusted sample" in Table 31) ("Response rate 1") and the number of addresses found ("Response rate 2"). The latter includes duplicates (according to names/addresses) and non-systematic losses and is, therefore, lower than response rate 1.

Referring to adjusted sample B, the overall response rate was 46% in the Biggest group and 37% in the Random group. Compared to the previous years, there is a steady decrease in both groups (2010: 54%, 2009: 58% response rate in the Biggest group; 2010: 43%, 2009: 45% in the Random group).

The response rates in all regions of the survey, except for Others, also dropped in both groups:

The response rate for **EPC countries** declined in the Biggest group to 49% (54% in 2010) and in the Random group to 43% (2010: 46%). Among EPC applicants (for countries with substantial numbers of addresses), high response rates were achieved in the Biggest group in the Netherlands (67%), Sweden (63%), and Switzerland (56%), and in the Random group in Austria (62%), Sweden (56%), and the Netherlands (52%).

In the **US**, the response rate dropped to 22% in the Biggest group (2010: 35%), and 22% in the Random group (2010: 26%), although the absolute number of Random group interviews increased.

In **Japan**, the response rates decreased in both groups: 64% in the Biggest group (2010: 70%), and 48% in the Random group (2010: 61%). This, however, seems mainly to be due to the earthquake catastrophe in Japan. In addition, fieldwork in Japan started nearly one month later than in other countries. Keeping this in mind, the response rate is still relatively high and was achieved because many Japanese respondents quickly returned to “business as usual”.

In the **Other regions**, the Biggest group response rates increased for Asian countries. In the Random group, this is also the case at least for Korea and Taiwan. The absolute numbers of interviews increased in these regions in 2011 compared to 2010, which seems to result mainly from providing an interviewer who speaks the local language or the availability of the questionnaire in the local language.

One reason for the decrease in most response rates may be that the same absolute amount of interviewer hours was spread among a larger number of addresses compared to previous years. In addition, in 2011, there was a larger time lag between first contact and response so that more effort was needed to motivate contacts than in previous years.

The third column from the right in both **Table 34**: Non-response statistics – Biggest (incl. overlapping members of the Random group) (Biggest group) and **Table 35**: Non-response statistics – Random (incl. overlapping members of the Biggest group) (Random group) shows the numbers of responses achieved with blocs and countries of origin. **Table 36**: Respondent structure shows in addition the numbers of responses by origin from the combined samples. Reasons for non-response are explained in **Table 37** (combined sample).

Block, Biggest	Country	Addresses in gross sample ¹	Addresses not found	Addresses found	Included in/Identical with other applicant ^{D1}	Adjusted sample A	Number of losses	Adjusted sample B ^{D1}	Number of refusals ^{D2}	Number of interviews	Response rate 1*	Response rate 2**
EPC	AT	3	1	2	1	1	0	1	1	0	0%	0%
EPC	BE	7	0	7	0	7	0	7	4	3	43%	43%
EPC	CH	18	0	18	0	18	0	18	8	10	56%	56%
EPC	DE	87	0	87	8	79	0	79	41	38	48%	44%
EPC	DK	7	0	7	0	7	0	7	4	3	43%	43%
EPC	FI	6	0	6	0	6	1	5	3	2	40%	33%
EPC	FR	36	0	36	3	33	0	33	20	13	39%	36%
EPC	GB	9	0	9	2	7	1	6	3	3	50%	33%
EPC	IT	5	0	5	0	5	1	4	0	4	100%	80%
EPC	LI	2	0	2	0	2	0	2	1	1	50%	50%
EPC	LU	3	0	3	0	3	1	2	2	0	0%	0%
EPC	NL	13	0	13	1	12	0	12	4	8	67%	62%
EPC	SE	8	0	8	0	8	0	8	3	5	63%	63%
EPC	SI	1	0	1	0	1	0	1	1	0	0%	0%
EPC	TR	1	0	1	0	1	0	1	0	1	100%	100%
EPC	Total	206	1	205	15	190	4	186	95	91	49%	44%
JP	JP	89	0	89	2	87	3	84	30	54	64%	61%
US	US	97	0	97	4	93	12	81	63	18	22%	19%
OT	Total	23	1	22	1	21	7	14	9	5	36%	23%
OT	CN	4	0	4	0	4	1	3	2	1	33%	25%
OT	KR	11	0	11	0	11	4	7	4	3	43%	27%
OT	BB	1	0	1	0	1	1	0	0	0	0%	0%
OT	CA	2	1	1	0	1	0	1	1	0	0%	0%
OT	SG	2	0	2	1	1	0	1	1	0	0%	0%
OT	TW	2	0	2	0	2	0	2	1	1	50%	50%
OT	VG	1	0	1	0	1	1	0	0	0	0%	0%
Total	Total	415	2	413	22	391	26	365	197	168	46%	41%

1) Without addresses requested by EPO joint cluster managers

D1) Both columns sum up to Dropouts (1) in **Table 31**

D2) This column refers to Dropouts (2) in **Table 31**

*) Calculation: number of interviews over adjusted sample B

**) Calculation: number of interviews over addresses found

Table 34: Non-response statistics – Biggest (incl. overlapping members of the Random group)

Block, Random	Country	Addresse s in gross sample ¹	Addresse s not found	Addres ses found	Included in/Identical with other applicant ^{D1}	Adjusted sample A	Number of losses ^{D1}	Adjuste d sample B	Number of refusals ^{D 2}	Number of interviews	Respon se rate 1*	Respon se rate 2**
EPC	AT	52	5	47	6	41	4	37	14	23	62%	49%
EPC	BE	55	3	52	4	48	3	45	24	21	47%	40%
EPC	CH	116	8	108	13	95	9	86	53	33	38%	31%
EPC	DE	473	9	464	28	436	22	414	219	195	47%	42%
EPC	DK	33	2	31	0	31	0	31	17	14	45%	45%
EPC	ES	45	4	41	3	38	10	28	15	13	46%	32%
EPC	FI	26	0	26	0	26	5	21	15	6	29%	23%
EPC	FR	184	3	181	27	154	8	146	95	51	35%	28%
EPC	GB	128	30	98	6	92	7	85	53	32	38%	33%
EPC	IT	124	3	121	2	119	12	107	76	31	29%	26%
EPC	NL	81	5	76	6	70	3	67	32	35	52%	46%
EPC	NO	16	0	16	1	15	0	15	9	6	40%	38%
EPC	SE	48	1	47	5	42	1	41	18	23	56%	49%
EPC	Others	62	17	45	0	45	3	42	29	13	31%	29%
EPC	Total	1443	90	1353	101	1252	87	1165	669	496	43%	37%
JP	JP	275	4	271	14	257	17	240	125	115	48%	42%
US	US	653	50	603	32	571	118	453	354	99	22%	16%
OT	Total	300	25	275	22	253	51	202	152	50	25%	18%
OT	CN	33	0	33	0	33	4	29	24	5	17%	15%
OT	KR	62	0	62	7	55	17	38	27	11	29%	18%
OT	AU	28	1	27	1	26	5	21	18	3	14%	11%
OT	CA	41	4	37	4	33	6	27	17	10	37%	27%
OT	IL	34	4	30	2	28	5	23	13	10	43%	33%
OT	TW	43	0	43	5	38	2	36	27	9	25%	21%
OT	Asian Others	13	0	13	1	12	0	12	12	0	0%	0%
OT	Other Others	46	16	30	2	28	12	16	14	2	13%	7%
Total	Total	2671	169	2502	169	2333	273	2060	1300	760	37%	30%

1) Without addresses requested by EPO joint cluster managers

D1) Both columns sum up to Dropouts (1) in **Table 31**

D2) This column refers to Dropouts (2) in **Table 31**

*) Calculation: number of interviews over adjusted sample B

**) Calculation: number of interviews over addresses found

Table 35: Non-response statistics – Random (incl. overlapping members of the Biggest group)

Block	Country	Biggest (incl. Target group overlap) ¹	Random (incl. Target group overlap) ¹	Biggest & Random/net number of interviews ²
EPC	AT	0	23	24
EPC	BE	3	21	21
EPC	CH	10	33	34
EPC	DE	38	195	201
EPC	DK	3	14	14
EPC	ES	0	13	13
EPC	FI	2	6	7
EPC	FR	13	51	54
EPC	GB	3	32	32
EPC	HU	0	1	1
EPC	IE	0	3	3
EPC	IS	0	1	1
EPC	IT	4	31	31
EPC	LI	1	2	2
EPC	LU	0	1	1
EPC	NL	8	35	38
EPC	NO	0	6	6
EPC	PL	0	2	2
EPC	SE	5	23	23
EPC	TR	1	3	3
EPC	Total	91	496	511
JP	JP	54	115	118
US	US	18	99	103
OT	Total	5	50	50
OT	AU	0	3	3
OT	BR	0	2	2
OT	CA	0	10	10
OT	CN	1	5	5
OT	IL	0	10	10
OT	KR	3	11	11
OT	TW	1	9	9
Total	Total	168	760	782

1) Without addresses requested by EPO joint cluster managers

2) Including addresses requested by EPO joint cluster managers

Table 36: Respondent structure

Losses ¹			Systematic losses/refusals ¹		
Appropriate contact not found / mailbox system	97	35%	Didn't return questionnaire	676	51%
Contact never available***	79	29%	No time	162	12%
Company is never available	37	13%	Not interested	115	9%
Language problems	18	6%	Company policy	76	6%
Affected by Earthquake/Tsunami (Japan)	13	5%	Not able to identify/collect data	67	5%
Company is being restructured	11	4%	Data too confidential	51	4%
Company no longer exists	10	4%	No reason given	44	3%
Company will be liquidated	6	2%	Questionnaire too complicated	16	1%
Contact is sick/on vacation	6	2%	Participated in other EPO survey	5	0%
Technical problems (fax, e-mail address not working)	0	0%	Returned questionnaire too late	0	0%
			Other reasons (please specify in comment)*	63	5%
			No name policy**	17	1%
			Data security	14	1%
			Questionnaire too long	13	1%
Total	277	100%	Total	1319	100%

1) Without addresses requested by EPO joint cluster managers

* = e.g. too expensive due to external attorney/ have already participated often and want a break; do not have any patent filings etc.

** = Mailbox systems/Blocking operators in case no correct contact name is available

*** = Contact name could be searched, but never was available

Table 37: Reasons for non-response – Biggest and Random groups

7.8.4 Item non-response

Apart from the overall response rates, the different sections of the questionnaire were filled in with varying completeness, i.e. there are different response rates for different parts of the questionnaire. The completion rates of the questionnaire were 98% for part B (the same as in 2010), 91% for part C (95% in 2010), 88% for part D, and 89% for Part E (although these gratifyingly high percentages hide cases where not all questions were answered for a part). See also **Table 38**.

In total (Biggest and Random groups), out of 782 completed interviews, 755 responses (775 in 2010) provided information for either EPC or PCT International Phase (B(a) or B(b))

for at least one-year/first or subsequent filings). However, less than that (715) provided figures for at least one forecasting year between 2011 and 2013 for either EPC or PCT International Phase filings. 670 responses (698 in 2010) could be used for EPO PCT regional phase applications (B(j)).

664 respondents (690 in 2010) provided information on the technical area they are active in. However, 220 of these respondents noted their technical area(s) in the "others" line. Where possible (in 216 cases), these responses were allocated to one of the 14 joint clusters by Synovate ex post. 338 responses (314 in 2010) contributed to the analysis of R&D budgets (C(e)). Compared to other questions, the response rate for R&D budget is particularly low: not even half of the respondents give information about this topic (43% in total).

In the **Biggest group** (including overlap), out of 168 completed interviews, 166 cases provided information for either EPC or PCT International Phase (B(a) or B(b)) for at least one year on first or subsequent filings (equivalent response rate 2 over addresses found: 40%, which is about the same as the rate in the previous year: 41%). Of these, 155 responses provided figures for at least one forecasting year between 2011 and 2013 for either EPC or PCT International Phase filings. Again 155 responses provided useful information on EPO PCT regional phase applications (B(j)) – equivalent response rate 2: 38%, which is the same as in 2010). For **Section C**, 147 respondents answered at least one question (equivalent response rate 2: 36%; which are fewer respondents than in 2010: 173 or 42%), but only 73 responses contributed to the analysis of R&D budgets (C(e)) – equivalent response rate 2: 18% compared to 15% in 2010). 143 respondents provided useful answers to **Section D** questions (equivalent response rate 2: 35%), while 146 respondents provided the information on **Section E** (equivalent response rate 2: 35%).

In the **Random group** (including overlap), out of 760 completed interviews, 733 responses provided information for either EPC or PCT International Phase (B(a) or B(b)) for at least one year on first or subsequent filings (equivalent response rate 2: 29%, which decreased by 5 percentage points from the previous year). Of these, 696 responses provided figures for at least one forecasting year between 2011 and 2013 for either EPC or PCT International Phase filings. 650 responses supplied useful information on EPO PCT regional phase applications (B(j)) – equivalent response rate 2: 26% compared to 30% in 2010). For **Section C**, 696 respondents answered at least one question (equivalent response rate 2: 28% compared to 33% in 2010) but only 333 responses could be used for the analysis of R&D budgets (C(e)) – equivalent response rate 2: 13% compared to 14% in 2010). 669 respondents answered **Section D** questions (equivalent response rate 2: 27% compared to 29% in 2010), while 679 respondents provided information on **Section E** (equivalent response rate 2: 27% compared to 31% in 2010).

	Total*		Biggest (incl. Overlap)**		Random (incl. Overlap)**	
	782		168		760	
Part B overall	768	98%	166	99%	746	98%
Part B (at least one of Ba or Bb in at least one year)	755	97%	166	99%	733	96%
Part B (at least one of Ba or Bb in at least one of 2011-13)	715	91%	155	92%	696	92%
Part B (Bj)	670	92%	155	92%	650	86%
Part C overall	714	91%	147	88%	696	92%
Part C technical domain (Cd)	664	85%	130	77%	650	86%
Part C R&D budget (Ce)	338	43%	73	43%	333	44%
Part C Filings 2010 (Cf)	743	99%	166	99%	721	95%
Part D overall	687	88%	143	85%	669	88%
Part E overall	696	89%	146	87%	679	89%

* = Including addresses requested by EPO clusters

** = Without addresses requested by EPO clusters

Table 38: Partial response rates – Biggest and Random groups

8 Annex II: Comments received from participants

8.1 Multiple comments

The table below lists a selection of comments which were received multiple times. Numbers refer to the number of times a specific comment was received. Sometimes the same respondent made identical comments in several parts of the questionnaire. The comments may refer to more than one of the questions in the particular part mentioned.

Questionnaire part:	B	C	D	E	F	Total
	Absolute frequency of comments					
No answer/no data available/unknown	6	110	61	60	10	247
Hard to answer (not collecting data in requested structure/change in organisation/external attorney handles patent filing, company too young)	2	-	-	12	18	32
Confidentiality	-	13	-	2	15	30
Difficult to provide figures/hard to estimate/estimation only	5	-	2	5	4	16
Unclear question/terminology	3	5	5	1	2	16
Time-consuming/takes a lot of effort	2	2	1	-	7	12
Question not relevant to this entity/organisation (e.g. because the applicant is an university)	-	-	1	-	5	6
Total	18	137	70	84	62	371

Table 39: Number of multiple comments

8.2 Individual comments (selection)

8.2.1 Individual comments on patenting strategy and development

- Recent increases in EPO fees (particularly Designation Fees) caused re-introduction of direct national filing, as we perceive only limited value for patents in more than three countries in Europe.
- There are no PCT applications which entered national Phase at DPMA. Instead, we generally validate our European patents before the DPMA.
- Note that no initial patents have been applied for in Europe. We lodge provisional patents in Australia. We then apply for PCT through Australia. Following expiry of PCT, we apply for National phase in various jurisdictions, including Europe.
- We try to avoid filing PCT applications because it is expensive and does not lead to a patent. We file directly in the EPO or national patent offices within one year of filing priority U.S. patent application.

- Since (...) our company has the market mostly in Europe, we do not prefer PCT filings or other kind of filings (US, JPO, etc.) except domestic or EPO.
- Our competitors in the US apply no longer/not at all or only sometimes at the EPO. Explanation: takes too long/too expensive. They are only interested in some European countries, which are relevant to our business (France, GB, rarely Germany). They apply directly in the countries and normally receive their patents after 2.5 years latest (in France and GB).
- Our foreign filings have decreased over the last few years due to the cost of filing fees and annuities.

8.2.2 Individual comments on divisional filings

- The introduction of (...) [a] time limit [regarding divisional applications] was a very negative development and made EP procedure less attractive.
- The new rule punishes those who are fair and restricts the possibilities of applicants. This leads to a locational handicap compared to e.g. the US or Japan; furthermore, the new rules are very complicated, error-prone and expensive, as divisional filings have to be made earlier and laid in stock.
- The introduction of divisional applications means a deterioration of the EPO's services.
- The EPO should abolish the divisional rules that were introduced in 2009 and go back to the previous rules. This will save the applicants a huge amount of money and make the European patent system more attractive to SMEs. The rule change in 2009 had the exact opposite effect - but has surely increased fees to the EPO. The changes to the law on divisional filings are seen as regressive resulting in an unfair burden to the applicant with the only benefiter being the EPO. Our opinion of the EPO has gone down because of the unnecessary changes.
- We request the early maintenance expenses for EP application will be low. Especially on divisional application, we request the accumulating yearly maintenance expenses will be free or reduced.
- The time limit regarding divisional applications strongly limits their benefits. One would need to apply for divisional filings on a precautionary basis, which is not justified for financial reasons.

8.2.3 Individual comments on EPC system/EPO quality

- Registration in one contracting state exerts influence on all contracting states. EPO needs to standardise screening-level for registrations in every state.
- It would have been nice with some question related to the customers' expectation [concerning] patent prosecution time at the EPO, which is slow in some areas
- EPO fees are relatively high. Lower fees would allow more inventions to be protected in Europe.

- The amendment conditions at the examination stage are quite strict. These conditions for amendment are too hard for applicants in some cases. We request these conditions (...) will be relaxed.
- The duration until a patent is granted is too long and not acceptable. Acceptable is a duration of approx. two years.
- It mostly lasts too long until patents are granted; by the time they are granted, you can't use the patents any longer.
- When we compare the proceeding speed of EPO and other countries, EPO tends to work slower and there was the case like, rights got to be expired before registration. We request accelerated proceedings at EPO.
- About examination standard of EPC: we feel new matters or judgement of requirements at registration is so strict at EPC. It seems to be stricter than [in] other countries (...).
- Applying for European patents is not popular in our institute. Brochures and/or guide books should be provided for its popularity.
- It would be good to try to stimulate those companies which are not interested in Intellectual Property any longer. One should emphasise the advantages, importance and strategic interests of intellectual properties.

8.2.4 Individual comments on Unitary Patent

- Even the cheapest option is too much and unreasonable. Compare US renewal costs, which are less than the German patent alone, while the business territory is much bigger. The Unitary Patent will serve large firms only which have a wide validation policy.
- We found six countries is more than enough coverage for Europe. Cost is the main driver. Surprisingly, we have found bypassing the EPO and going national phase in our selected countries to be more economical.
- It would be good to also have a unitary Jurisdiction after grant.
- Cost will be the ultimate driver of how we use this mechanism - percentages subject to change depending on what the costs will be - if there is no cost difference, then we will validate in as many countries as possible. Otherwise, we will validate only in the largest market countries (DE, GB, FR, and possibly IT, ES, NO).
- A Unitary Patent must be of reasonable cost. If it becomes significantly more expensive, consideration will have to be made for a filing strategy which bypasses the EPO with direct filing at the national patent offices.
- I hope the Unitary Patent will reduce costs, thereby allowing increase in number of patents.
- We are assuming that the present, country-specific validation system will continue to be available for EP patents, as a "competitor" to the Unitary Patent.
- A Unitary Patent system must include a robust court structure with specialist patent judges and an appeal route to a highest court with patent cases heard by non-specialist patent judges. Such a structure would bring confidence to the industry.

Claim constructions for both infringement and validity must be the same and determined in the same court.

- We would recommend one patent court of law to include in the Unitary Patent system.
- We would recommend only English as language and a unique patent court at least for nullification.
- A common court system dealing with infringement proceedings. Also "Client-Attorney privilege" should be introduced for patent attorneys on a European scale.
- As long as it is not crystal clear in front of which court infringement cases regarding Unitary Patent are handled, any final assessment of Unitary Patent is difficult.
- Expedience in prosecuting patent applications, having set timelines for responses and eliminating protests during prosecution since the competing companies use this as a tool to slow down and increase the cost of the patent application. Make this part similar to the USPTO.
- I'd suggest the possibility to choose the "old system" for 1) optimal protection (in case of invalidity in one country, the patent is still in force in other) and 2) for cost saving if only few countries of interest
- First, we compare the new system, Unitary Patent, and traditional system, EP-route or direct application procedure to each country. Then we will take the most effective and most reasonable way (on running cost, good cost performance) for the application.
- I am doubtful if there will be a reduction of the translation costs, since we already have the London agreement. If more than English then the costs will increase over an average and the Unitary Patent will not be used.
- Publication of a single, unified guidance which would allow young and inexperienced companies how to plan and manage their IP activities.

9 Annex III: Analytical Methodology

9.1 Poisson weighting of Random group forecasting results

The established method used in this report to analyse the Random group involves Poisson weights that take account of the probability of inclusion of the respondent within the sample asked, as measured via the number of filings made in the base year according to the EPO database¹⁸.

The Poisson weight for each respondent is calculated as

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

where n^+ is the number of extractions made for sampling purposes, A is the total number of recorded filings in the base year, and A_i is the known number of applications made by the i -th sampled applicant in the base year. For this year's sample, $A = 129\,652$ (excluding divisional filings) and $n^+ = 4\,400$.

9.2 Amalgamation of joint clusters into mega clusters

At the EPO, operations with respect to patent filings are organised according to industry segments, also called *joint clusters*. In the questionnaire Part C, respondents are invited to give some information broken down according to these classes. Joint cluster specific filing estimates help the EPO anticipate industry-specific trends and dynamics. For purposes of aggregating enough sample responses to give better forecasts by technical areas, these 14 joint clusters have been amalgamated into five larger groups in this report. These *mega clusters* each define a hopefully fairly homogenous group of industries. Through this amalgamation, each of the 14 joint clusters is assigned to just one of the mega clusters. The assignment is given in **Table 40**.

In this year's report, growth estimates broken down by mega cluster are given in **Annex IV**. Additional analyses of **Annex VI** to **Annex VIII** are also provided using mega cluster breakdowns.

¹⁸ See Applicant Panel Survey 2001 report: Annex III; and Applicant Panel Survey 2002 report: Section IV.1, Annex IV.

Mega Cluster	Joint Cluster
Electricity	Electricity and Semiconductor Technology Electronics Measuring and Optics
ICT	Audio, Video & Media Computers Telecommunications
Inorganic Chemistry	Industrial Chemistry Polymers
Organic Chemistry	Biotechnology Pure & Applied Organic Chemistry
Traditional	Civil Engineering & Thermodynamics Handling & Processing Human Necessities Vehicles & General Technology

Table 40: Amalgamation of joint clusters into mega clusters

9.3 Assessment of forecast quality using RMSEF

In previous surveys, the assessment of the quality of different forecast methods was largely driven by a heuristic evaluation of two criteria. The first criterion was an intuitive comparison of the forecast's estimate of one-year ahead total filings with the true actual number of total filings for that given year. The second criterion was an evaluation of a forecast's standard error for all three years under review (but again, primarily for the first year). In terms of one-year ahead performance, this heuristic was formalised in this survey, by way of a "mean squared error" type of criterion.

For all forecast approaches under review this year, we calculate the root mean squared error of the forecast (RMSEF) as

$$RMSEF(\hat{f}) = \sqrt{[bias(\hat{f})]^2 + Var(\hat{f})} ,$$

where $bias(\hat{f})$ is the difference between the forecast and the actual number of total filings for year one; and $Var(\hat{f})$ is the variance of the forecast that is calculated as the Poisson weighted sum of squared differences from the actual number of total filings. Based on the tables presented in this report, $Var(\hat{f})$ can also be calculated as

$$Var(\hat{f}) = \left(\frac{Deviation(\hat{f}) * \hat{f}}{1.96} \right)^2 .$$

9.4 Finite population correction

Finite population correction values were obtained from the EPO database counts of Euro-direct and Euro-PCT-RP filings of respondents in the Random group as follows:

Residence bloc	fpc
Total	0.24
EP	0.29
JP	0.42
OT	0.04
US	0.12

Finite population correction factor values shown here were used in the current analysis. In fact, these fpc values are conservative because they are based on database counts for filings by respondents, while the reported counts for base year filings by the respondents can be somewhat higher (see **Annex XI**, where numbers of applicants responding are smaller than numbers of applicants asked, although numbers of applications are, in fact, higher for applicants responding than for applicants asked in the case of PCT-IP filings). This year's fpc values are quite similar to last year's, as the identical total fpc value of 0.24 indicates. This is continued evidence that the increased sample size, as well as the new sampling scheme attempting to combine all filings of a company, have successfully covered a larger proportion of filings when compared to years prior to 2010. For the first time this year, FPC values were calculated based on total filings excluding divisional filings, since this was the population of filings on which the sampling mechanism was based.

9.5 Winsorisation

Some of the forecast approaches in this survey were repeated using a winsorised version of applicant responses¹⁹. With this method, individual applicant growth indices are adjusted by reigning in the most extreme growth indices after logarithmic transformation. Indices that fall below the 5% percentile and indices that lie above the 95% percentile are replaced by the growth index at the respective percentile. The adjusted data are then used for carrying out Q index calculations according to the various breakdown scenarios.

For the first time in this year's report, when using winsorised data, standard errors of Q index based growth rate estimates are adjusted to take account of the winsorisation by applying an inflation factor of

$$\frac{(n - 1)}{(n - 2k - 1)},$$

with k being the number of sample cases effected by the winsorisation process at each end²⁰.

¹⁹ Cf. Applicant Panel Survey 2005 report: Section 7.5.

²⁰ Tukey and McLaughlin, (1963): Less vulnerable confidence and significance procedures based on a single sample: trimming and winsorization, *Sankhyā: The Indian Journal of Statistics, Series A*, Vol. 25, No. 3, pp 331-352.

9.6 Nonparametric bootstrapping

Nonparametric bootstrapping was carried out to validate the stability of the forecast results in terms of the analytically calculated standard errors of the growth indices²¹. 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.

²¹ Cf. Applicant Panel Survey 2006 report: Section 7.5.

10 Annex IV: Forecasts broken down by mega cluster

The forecasts for EPO filings were analysed with primary breakdowns by mega cluster based on amalgamated joint clusters (see **Annex III, Section 7.8.4** and **Section 9.1**). For the Biggest group sample, the composite indices were calculated, while for the Random group sample, Q indices were calculated.

Contrary to recent years, growth rate estimates broken down by mega cluster are not used this year to attempt to forecast mega-cluster-specific and overall filing numbers. This is because unambiguous classification of past filings into specific mega clusters is not straightforward and reliable base line filing numbers are thus hard to come by.

This year's forecasts employing a mega cluster breakdown are based on the modified weight allocation scheme that was first described in the 2009 report²². This ensures that an applicant's growth estimate retains the same overall leverage, regardless of the number of mega clusters the applicant may be active in.

When deriving the standard error for mega-cluster-based analyses, a correction factor is included to avoid distortions caused by multiple mega cluster classifications. For the Random group, this correction factor takes into account the average multiplicity of mega clusters per responding applicant in this year's survey of 1.47²³, and widens the confidence limits by multiplying standard errors by 1.21 (the square root of 1.47). As previously for the calculation of standard errors, a finite population correction is also applied. This has the compensatory effect of narrowing the confidence limits.

10.1 Results broken down by mega cluster only

The forecasts of filings by filing type, filing route and mega cluster for the Biggest group are shown in **Table 41**. The analogous forecasts for the Random group broken down by mega cluster are given in **Table 42**.

Even though the past practice of attempting total filing forecasts based on an aggregation of individual mega cluster growth forecasts has been discontinued in this report, this analysis remains useful for business planning as it provides growth rate estimates for groups of individual EPO examining departments of the various primary combinations of first, subsequent, Euro-direct, and PCT-IP filings.

²² Cf. Future Filings Survey 2009 report: Section 4.4.

²³ See Section 12.5 below for details of this calculation.

Forecast for EPO filings - Biggest group by mega clusters

Biggest group (including critical comments)
Breakdown by EPO mega cluster
Composite indices

			Year					
			2011		2012		2013	
Filing type	Filing route	Cluster	Cases 11	Index 11	Cases 12	Index 12	Cases 13	Index 13
First	Euro-direct	Electricity	21	1.0524	21	1.1571	21	1.2289
		Organic Chemistry	18	1.0429	18	1.1067	18	1.1525
		Inorganic Chemistry	12	1.0018	12	1.0847	12	1.1333
		ICT	12	1.0329	12	1.0519	12	1.0917
		Traditional	26	1.0600	25	1.1448	25	1.1807
First	Euro-PCT-IP	Electricity	20	1.1015	20	1.1276	20	1.2144
		Organic Chemistry	15	1.1146	14	1.1330	14	1.2206
		Inorganic Chemistry	9	1.0761	9	1.1268	9	1.2464
		ICT	9	1.0461	9	1.0651	9	1.1290
		Traditional	22	1.0713	19	1.0858	19	1.1401
Subsequent	Euro-direct	Electricity	32	0.8947	31	0.9486	31	0.9508
		Organic Chemistry	17	0.9165	16	1.0041	16	0.9927
		Inorganic Chemistry	18	0.8435	18	0.8529	18	0.8505
		ICT	19	0.8817	18	0.8544	18	0.8443
		Traditional	45	0.9703	41	1.0840	41	1.0995
Subsequent	Euro-PCT-IP	Electricity	37	1.0824	37	1.1543	37	1.2199
		Organic Chemistry	28	1.0760	28	1.1048	28	1.1543
		Inorganic Chemistry	27	1.1033	27	1.1473	27	1.1867
		ICT	22	1.0888	22	1.1489	22	1.2091
		Traditional	55	1.0611	54	1.1143	54	1.1666

Table 41: Forecasts for EPO filings at the EPO – Biggest group broken down by mega cluster

Forecast for EPO filings - Random group by mega clusters

Random group (excluding critical comments)
Breakdown by EPO mega cluster
Q-indices

S.E. indicates standard error of logarithm

			Year								
			2011			2012			2013		
Filing type	Filing route	Cluster	Cases 11	Q-index 11	S.E. 11	Cases 12	Q-index 12	S.E. 12	Cases 13	Q-index 13	S.E. 13
First	Euro-direct	Electricity	55	1.1243	0.1187	55	1.2410	0.1148	53	1.2814	0.1214
		Organic Chemistry	47	1.0299	0.0557	46	1.1102	0.0597	45	1.1606	0.0608
		Inorganic Chemistry	37	1.1761	0.0875	36	1.2657	0.0699	35	1.3506	0.0751
		ICT	29	1.0149	0.1201	29	0.9757	0.1418	29	0.9155	0.1776
		Traditional	87	1.0561	0.0408	84	1.1775	0.0704	84	1.1710	0.0747
First	Euro-PCT-IP	Electricity	44	1.1956	0.0845	44	1.3414	0.0822	42	1.5097	0.1108
		Organic Chemistry	31	1.2877	0.1141	30	1.5000	0.1237	29	1.6286	0.1002
		Inorganic Chemistry	23	1.1852	0.1433	22	1.3353	0.1675	21	1.5040	0.1552
		ICT	21	0.5911	0.7688	21	0.5649	0.6809	21	0.5880	0.6917
		Traditional	54	1.2848	0.1192	51	1.2718	0.1154	47	1.3447	0.1363
Subsequent	Euro-direct	Electricity	89	0.9129	0.0649	87	1.0902	0.0531	87	1.0942	0.0528
		Organic Chemistry	43	0.7440	0.3379	42	1.1089	0.0861	41	1.1474	0.0863
		Inorganic Chemistry	46	0.8659	0.1508	46	0.9390	0.1511	43	0.9235	0.1747
		ICT	45	0.7554	0.2344	44	0.8398	0.1535	44	0.8431	0.1533
		Traditional	151	0.9962	0.0424	142	1.1425	0.0442	141	1.1464	0.0429
Subsequent	Euro-PCT-IP	Electricity	102	0.9041	0.1346	102	0.9672	0.1579	101	1.0159	0.1642
		Organic Chemistry	79	1.0322	0.0539	79	1.0084	0.0507	79	1.0334	0.0576
		Inorganic Chemistry	83	1.0285	0.0395	81	1.1467	0.0405	79	1.1960	0.0426
		ICT	52	0.9677	0.1158	53	1.0280	0.1133	52	1.0761	0.1226
		Traditional	169	1.1173	0.0433	166	1.1638	0.0489	164	1.2010	0.0507

Table 42: Forecasts for EPO filings at the EPO – Random group broken down by mega cluster

Table 42 suggests that, for most filing types, lower growth is predicted for ICT than for the other sectors. On the other hand, Traditional seems quite strong, and there is a suggestion of a switch towards first filings in inorganic chemistry. However, these suggestions are not substantiated by results from the Biggest group in **Table 41**, where the size of the selected sample may be too small to make such effects apparent.

10.2 Results broken down by mega cluster and residence bloc

The data of the Random group were also analysed with a simultaneous breakdown by mega cluster and residence bloc. The results are shown in **Table 43**.

Detailed forecasting results - Random group, breakdown by mega cluster and residence bloc ("Other" incorp. into EP)

Random group (including critical comments)
Breakdown by mega cluster and residence bloc ("Other" incorporated into EP)
Q-indices
First, Subsequent, Euro-direct and Euro-PCT-IP filings combined

				Year								
				2011			2012			2013		
Filing type	Filing route	mega cluster	Res. bloc	Cases 11	Q-index 11	S.E. 11	Cases 12	Q-index 12	S.E. 12	Cases 13	Q-index 13	S.E. 13
First+Subsequent	Euro-direct+Euro-PCT-IP	Electricity	EP/OT	58	1.0602	0.0281	56	1.1725	0.0306	54	1.2319	0.0317
			JP	27	1.0001	0.1074	26	1.1656	0.1051	25	1.2708	0.1419
			US	15	0.8204	0.2148	15	0.8529	0.2452	14	0.8446	0.3140
First+Subsequent	Euro-direct+Euro-PCT-IP	Organic Chemistry	EP/OT	50	0.9563	0.0618	45	1.0315	0.0705	42	1.0173	0.0720
			JP	17	1.1966	0.1358	15	1.1058	0.0572	15	1.1331	0.0712
			US	9	1.0408	0.0765	9	1.2278	0.0904	9	1.2465	0.1007
First+Subsequent	Euro-direct+Euro-PCT-IP	Inorganic Chemistry	EP/OT	33	0.8797	0.0702	30	1.1419	0.0540	28	1.2231	0.0685
			JP	22	1.0042	0.0296	21	1.0475	0.0306	21	1.0572	0.0404
			US	11	0.5184	0.4800	11	0.5297	0.5858	11	0.4856	0.6687
First+Subsequent	Euro-direct+Euro-PCT-IP	ICT	EP/OT	28	0.8369	0.1590	27	0.8920	0.1647	26	0.9292	0.1861
			JP	14	1.0114	0.0375	14	1.0761	0.0737	13	1.0865	0.0857
			US	4	0.6785	0.6555	5	0.6317	0.5900	5	0.6294	0.6832
First+Subsequent	Euro-direct+Euro-PCT-IP	Traditional	EP/OT	110	0.9972	0.0416	101	1.1686	0.0401	98	1.2089	0.0441
			JP	40	1.0549	0.0341	37	1.1244	0.0521	37	1.1579	0.0632
			US	11	0.9884	0.0566	10	1.0606	0.0451	10	1.0904	0.0451

Table 43: Forecasts for EPO filings at the EPO – Random group broken down by residence bloc and mega cluster

Following on the results mentioned above under **Table 42**, it seems that the possible malaise in ICT will not be seen so much in Japan, while the apparent growth to come in Traditional will not be seen so much in the US. But due to very low cell counts in some instances, results from this two dimensional breakdown should certainly be interpreted with caution.

10.3 Forecasts for PCT regional phase applications broken down by mega cluster

Growth rate estimates for PCT regional phase applications were also estimated broken down by mega cluster. The results of this analysis are shown in **Table 44**.

Random group (including critical comments)
Breakdown by EPO mega cluster
Q-indices

S.E. indicates standard error of logarithm

			Year								
			2011			2012			2013		
Patent office	Filing route	Cluster	Cases 11	Q-index 11	S.E. 11	Cases 12	Q-index 12	S.E. 12	Cases 13	Q-index 13	S.E. 13
EPO	Euro-PCT-RP	Electricity	123	1.0125	0.0370	110	1.0104	0.1118	108	0.9076	0.2825
		Organic Chemistry	109	0.9339	0.0583	88	0.9547	0.0677	89	0.9983	0.0804
		Inorganic Chemistry	106	0.9659	0.0487	95	1.0959	0.0590	88	1.1771	0.0731
		ICT	66	0.9249	0.0834	58	1.0229	0.0800	58	1.0373	0.0859
		Traditional	203	1.0671	0.0307	188	1.1671	0.0532	182	1.1820	0.0561

Table 44: Forecasts for Euro-PCT-RP applications - Random group (broken down by mega cluster)

At least for 2011, a low growth rate is again predicted for ICT.

11 Annex V: Forecasts for applications at other patent offices

11.1 Worldwide first filings

Intentions regarding worldwide future patent filings were obtained from question (i) in **Part B** of the questionnaire (**Annex I**). For the first time, an estimate of total worldwide first filings is made in this report, based on the worldwide first filings growth rate estimates obtained from the respondents. The sample that was employed in this survey, while representative of EPO applicants, does not match all the applicants that apply at the various other national and regional offices, because they include some entities that do not apply to EPO. Care should thus be taken when interpreting these numbers.

“2010 Actual filings” that are used as base year data for the projections are based on numbers reported by WIPO, using information that appeared in December 2011.²⁴ The definition that was chosen for first patent filings is a proxy equivalent to the one that is used in the Four Office Statistics Report²⁵. An assumption is made that the domestic national filings reported from each patent office are equivalent to first filings. In order to estimate numbers of first filings from EPC states, domestic national filings from the national offices of the 38 EPC contracting states are summed and added to the numbers of Euro-direct first filings at EPO coming from residents. Some simplifying assumptions were applied to calculate the 2010 base year counts from this source, so that numbers that will appear in the next published version of the Four Office Statistics Report may vary slightly from these numbers.

Table 45 shows the results without further breakdown, whereas **Table 46** depicts the results broken down by residence bloc.

As was the case for estimated EPO Total filings growth, estimates based on a residence bloc breakdown are considerably more optimistic than estimates without breakdown. Clear differences in growth expectations can be observed between residence blocs. The strongest growth by far is expected to come from the OT residence bloc (including China and Korea). The EP, JP and US residence blocs all exhibit less than a quarter of the growth anticipated for the OT residence bloc with respect to three-year growth expectations.

Random group (including critical comments)
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

Filing type	Res. bloc	Year				2011				2012				2013			
		Actual filings	Cases 11	Q-index 11	S.E. 11	Predicted filings	Cases 12	Q-index 12	S.E. 12	Predicted filings	Cases 13	Q-index 13	S.E. 13	Predicted filings	Cases 14	Q-index 14	S.E. 14
Worldwide Total First Filings	Total	1 148 999	500	1.0074	0.0150	1 157 530	485	1.0657	0.0151	1 224 527	467	1.1036	0.0168	1 268 021			
	LCL					1 123 531				1 188 295				1 226 278			
	UCL					1 191 530				1 260 758				1 309 764			
Growth from 2010						0.7%				6.6%				10.4%			

Table 45: Forecast for worldwide first filings, no breakdown – Random group

²⁴ See www.wipo.int/ipstats/en/statistics/patents/. The data are extracted from the table there "Patent applications by office and by country of origin (1995-2010)".

²⁵ See Fig. 3.4 in the Four Office Statistics Report at www.trilateral.net/statistics/tsr/fosr2010.html

Random group (including critical comments)
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															
		2010				2011				2012				2013			
Filing type	Res. bloc	Actual filings	Cases 11	Q-index 11	S.E. 11	Predicted filings	Cases 12	Q-index 12	S.E. 12	Predicted filings	Cases 13	Q-index 13	S.E. 13	Predicted filings			
Worldwide Total First Filings	EP	133 122	331	0.9977	0.0190	132 822	322	1.0543	0.0189	140 352	307	1.0909	0.0209	145 217			
	JP	290 081	87	1.0410	0.0233	301 987	86	1.0790	0.0278	312 987	85	1.1035	0.0322	320 109			
	OT	483 819	28	1.1283	0.0997	545 900	26	1.3324	0.0684	644 650	26	1.4686	0.0725	710 527			
	US	241 977	54	0.9671	0.0438	234 022	51	1.0401	0.0388	251 686	49	1.0881	0.0427	263 301			
	Total	1 148 999	500			1 214 732	485			1 349 675	467			1 439 154			
	LCL					1 104 451				1 259 086				1 333 325			
	UCL					1 325 012				1 440 265				1 544 983			
Growth from 2010						5.7%				17.5%				25.3%			

Table 46: Forecast for worldwide first filings, broken down by residence bloc – Random group

11.2 Patent filings at specific national offices

Intentions regarding future patent filings at specific national offices were obtained from questions (c) to (h) and (k) to (o) in **Part B** of the questionnaire (**Annex I**).

National applications by country based on the Random group are presented in **Table 47** and **Table 48**. Forecasts based on the Random group for PCT national phase applications at USPTO, JPO, SIPO, and DPMA (German Patent Office) are displayed in **Table 49** to **Table 52**. The tables are limited to calculating growth indices in these cases. Counts for base year 2010 are also provided in some cases by WIPO as of December 2011 (see the source reference in **Section 11.1** above). But we choose not to attempt to model the absolute future levels of such filings here because of the lack of representativeness in the sample.

The filing intentions at national offices of the companies that applied at the EPO in 2010 vary strongly from country to country. While China (especially) and Korea are expected to see strong national first filings growth in 2011, first filings in Germany, Japan and the United States are expected to remain stable or to grow only slightly. Over the three-year horizon of this survey, China is anticipated to experience 133% first filings growth (indicating nearly a doubling of the three year growth rate compared to last year), with the United States growing 16%, while Germany and Japan are expected to grow only 7%.

In terms of subsequent national filings, the expected growth rates show fewer variations between countries, but are highest in China and (especially) Korea.

Random group (including critical comments)
No breakdown
Q Indices

Filings type	Filing route	Nation	Res. bloc	Year								
				2011			2012			2013		
				Cases 11	Q-index 11	S.E. 11	Cases 12	Q-index 12	S.E. 12	Cases 13	Q-index 13	S.E. 13
First	National	Germany (c)	Total	134	1.0215	0.0227	125	1.0488	0.0316	124	1.0733	0.0348
		Japan (d)	Total	104	1.0178	0.0288	100	1.0528	0.0352	100	1.0742	0.0400
		United States (e)	Total	184	1.0368	0.0352	170	1.1084	0.0366	167	1.1535	0.0407
		Republic of Korea (f)	Total	17	1.2279	0.1460	15	1.3590	0.1367	16	1.3660	0.1298
		China (g)	Total	45	1.5029	0.1920	43	2.0513	0.2330	43	2.3333	0.2586
		Other Countries (h)	Total	131	0.9771	0.0587	125	0.9970	0.0583	120	1.0537	0.0534
Subsequent	National	Germany (c)	Total	66	1.1244	0.0566	66	1.1356	0.0447	63	1.1928	0.0483
		Japan (d)	Total	136	0.8332	0.1487	130	1.1150	0.0419	132	1.1522	0.0419
		United States (e)	Total	244	0.9992	0.0513	238	1.1078	0.0591	236	1.1339	0.0647
		Republic of Korea (f)	Total	90	1.2711	0.0740	87	1.4155	0.0871	89	1.5573	0.1349
		China (g)	Total	176	1.1399	0.1985	174	1.4148	0.1352	175	1.4863	0.1374
		Other Countries (h)	Total	182	1.0679	0.0577	171	1.2924	0.0732	171	1.2801	0.0656

Table 47: Detailed forecasting results for national applications (excluding PCT), no breakdown – Random group

Random group (including critical comments)
Q Indices, Breakdown by residence bloc

Filings type	Filing route	Nation	Res. bloc	Year								
				2011			2012			2013		
				Cases 11	Q-index 11	S.E. 11	Cases 12	Q-index 12	S.E. 12	Cases 13	Q-index 13	S.E. 13
First	National	Germany (c)	EP	128	1.0146	0.0227	120	1.0411	0.0317	119	1.0648	0.0350
			JP	0	1.0215 *	0.0227 *	0	1.0488 *	0.0316 *	0	1.0733 *	0.0348 *
			OT	2	1.0215 *	0.0227 *	1	1.0488 *	0.0316 *	1	1.0733 *	0.0348 *
			US	4	1.0215 *	0.0227 *	4	1.0488 *	0.0316 *	4	1.0733 *	0.0348 *
		Japan (d)	EP	12	0.9709	0.0672	9	0.9659	0.0685	9	0.9618	0.0672
			JP	85	1.0321	0.0273	84	1.0711	0.0328	84	1.0931	0.0376
			OT	2	1.0178 *	0.0288 *	2	1.0528 *	0.0352 *	2	1.0742 *	0.0400 *
			US	5	1.0178 *	0.0288 *	5	1.0528 *	0.0352 *	5	1.0742 *	0.0400 *
		United States (e)	EP	91	1.0296	0.0521	83	1.1010	0.0524	80	1.1548	0.0582
			JP	26	1.1131	0.0541	26	1.1729	0.0722	26	1.1960	0.0792
			OT	16	1.1226	0.1216	15	1.3535	0.1281	15	1.4562	0.1637
			US	51	0.9755	0.0455	46	1.0244	0.0422	46	1.0477	0.0480
		Republic of Korea (f)	EP	4	1.2279 *	0.1460 *	3	1.3590 *	0.1367 *	4	1.3660 *	0.1298 *
			JP	5	1.2279 *	0.1460 *	5	1.3590 *	0.1367 *	5	1.3660 *	0.1298 *
			OT	4	1.2279 *	0.1460 *	3	1.3590 *	0.1367 *	3	1.3660 *	0.1298 *
			US	4	1.2279 *	0.1460 *	4	1.3590 *	0.1367 *	4	1.3660 *	0.1298 *
		China (g)	EP	21	1.5957	0.2596	20	2.3606	0.2913	20	2.7913	0.3141
			JP	13	1.4248	0.1933	13	1.6259	0.2683	13	1.6735	0.2827
			OT	6	1.0154	0.0754	5	2.0513 *	0.2330 *	5	2.3333 *	0.2586 *
			US	5	1.5029 *	0.1920 *	5	2.0513 *	0.2330 *	5	2.3333 *	0.2586 *
		Other Countries (h)	EP	102	0.9651	0.0697	98	0.9782	0.0699	93	1.0436	0.0642
			JP	9	1.0205	0.0246	9	1.0349	0.0284	9	1.0349	0.0284
			OT	11	1.3207	0.2863	10	1.6260	0.1733	10	1.6913	0.2064
			US	9	0.8596	0.1093	8	0.9020	0.1199	8	0.9283	0.1174
Subsequent	National	Germany (c)	EP	35	1.1288	0.0779	36	1.1117	0.0548	34	1.1720	0.0562
			JP	21	1.1614	0.0964	22	1.1703	0.0958	21	1.1874	0.1000
			OT	3	1.1244 *	0.0566 *	2	1.1356 *	0.0447 *	2	1.1928 *	0.0483 *
			US	7	0.9661	0.0350	6	1.0216	0.0214	6	1.1123	0.0457
		Japan (d)	EP	71	0.8042	0.2004	68	1.0743	0.0376	69	1.1187	0.0394
			JP	41	1.1871	0.0986	40	1.2626	0.1151	40	1.2682	0.1148
			OT	6	0.9359	0.1068	6	1.1118	0.0999	6	1.2527	0.1061
			US	18	0.4424	0.4912	16	1.0052	0.1695	17	1.0393	0.1654
		United States (e)	EP	134	0.9480	0.0745	128	1.0995	0.0871	126	1.1368	0.0958
			JP	58	1.1910	0.0782	60	1.2009	0.0833	59	1.2048	0.0919
			OT	19	0.7966	0.2375	17	0.8954	0.2574	17	0.9294	0.2583
			US	33	1.0220	0.0666	33	1.0471	0.0723	34	1.0527	0.0758
		Republic of Korea (f)	EP	36	1.3977	0.0679	34	1.5065	0.1097	35	1.6941	0.1901
			JP	35	1.2098	0.1159	35	1.2842	0.1421	35	1.2997	0.1437
			OT	6	1.3458	0.1970	6	1.1463	0.4755	6	1.8433	0.3262
			US	13	0.8509	0.2269	12	1.3304	0.0928	13	1.3378	0.0918
		China (g)	EP	86	0.9459	0.2865	85	1.2662	0.1540	86	1.3328	0.1652
			JP	57	1.2272	0.0723	57	1.3224	0.0839	56	1.3978	0.0917
			OT	8	1.1103	0.1143	7	1.3860	0.1244	7	1.6143	0.1521
			US	25	2.7885	0.7046	25	3.2060	0.7297	26	3.1712	0.6998
		Other Countries (h)	EP	98	1.0919	0.0698	90	1.3635	0.1010	89	1.3218	0.0871
			JP	45	1.0127	0.0909	45	1.0909	0.1021	46	1.1447	0.1105
			OT	10	1.1618	0.1545	10	1.4405	0.1332	9	1.3054	0.2414
			US	29	1.0480	0.2355	26	1.3550	0.1517	27	1.3725	0.1473

Table 48: Detailed forecasting results for national applications (excluding PCT), broken down by residence bloc – Random group

Random group (including critical comments)
Breakdown by residence bloc
Q-indices

			Year								
			2011			2012			2013		
Patent Office	Filing route	Res. bloc	Cases 11	Q-index 11	S.E. 11	Cases 12	Q-index 12	S.E. 12	Cases 13	Q-index 13	S.E. 13
USPTO	PCT National	EP	240	0.9472	0.0438	209	1.0153	0.0548	206	0.9840	0.1076
		JP	73	1.0666	0.0672	68	1.2079	0.0704	66	1.2210	0.0754
		OT	16	1.0706	0.0620	13	1.2848	0.1138	13	1.3355	0.1511
		US	41	1.1562	0.0433	34	1.1880	0.0537	34	1.2109	0.0628
USPTO	PCT National	Total	370	0.9892	0.0341	324	1.0708	0.0423	319	1.0542	0.0770

Table 49: Detailed forecasting results for PCT applications entering the national phase at USPTO (United States) – Random group

Random group (including critical comments)
Breakdown by residence bloc
Q-indices

			Year								
			2011			2012			2013		
Patent Office	Filing route	Res. bloc	Cases 11	Q-index 11	S.E. 11	Cases 12	Q-index 12	S.E. 12	Cases 13	Q-index 13	S.E. 13
JPO	PCT National	EP	163	0.9465	0.0310	143	0.9646	0.0601	139	1.0483	0.0498
		JP	55	1.0593	0.0498	54	1.1191	0.0483	52	1.1259	0.0646
		OT	12	1.0607	0.0752	12	1.1250	0.0929	11	1.2018	0.1074
		US	42	1.0378	0.0584	37	1.0070	0.0668	36	1.1090	0.0743
JPO	PCT National	Total	272	0.9810	0.0239	246	1.0064	0.0408	238	1.0770	0.0359

Table 50: Detailed forecasting results for PCT applications entering the national phase at JPO (Japan) – Random group

Random group (including critical comments)
Breakdown by residence bloc
Q-indices

			Year								
			2011			2012			2013		
Patent Office	Filing route	Res. bloc	Cases 11	Q-index 11	S.E. 11	Cases 12	Q-index 12	S.E. 12	Cases 13	Q-index 13	S.E. 13
SIPO	PCT National	EP	187	1.0186	0.0308	175	1.0829	0.0613	171	1.0693	0.1178
		JP	70	1.1316	0.0734	65	1.3033	0.0811	63	1.3569	0.0882
		OT	14	1.1443	0.0731	13	1.3915	0.1144	12	1.6295	0.1540
		US	42	1.2061	0.0513	37	1.2442	0.0800	37	1.3404	0.0834
SIPO	PCT National	Total	313	1.0620	0.0264	290	1.1475	0.0457	283	1.1619	0.0814

Table 51: Detailed forecasting results for PCT applications entering the national phase at SIPO (China) – Random group

Random group (including critical comments)
Breakdown by residence bloc
Q-indices

			Year								
			2011			2012			2013		
Patent Office	Filing route	Res. bloc	Cases 11	Q-index 11	S.E. 11	Cases 12	Q-index 12	S.E. 12	Cases 13	Q-index 13	S.E. 13
DPMA	PCT National	EP	57	0.9025	0.1740	46	1.0094	0.1902	49	1.1761	0.2035
		JP	20	1.1561	0.1014	19	1.0853	0.0814	19	1.1112	0.0824
		OT	4	0.8972	0.0918	2	1.2166	0.1432	2	1.2166	0.1432
		US	11	1.2894	0.1806	9	1.4451	0.2551	8	1.8145	0.2307
DPMA	PCT National	Total	92	0.9702	0.1329	76	1.0501	0.1394	78	1.1854	0.1416

Table 52: Detailed forecasting results for PCT applications entering the national phase at DPMA (Germany) – Random group

Random group (including critical comments)
Breakdown by residence bloc
Q-indices

			Year								
			2011			2012			2013		
Patent Office	Filing route	Res. bloc	Cases 11	Q-index 11	S.E. 11	Cases 12	Q-index 12	S.E. 12	Cases 13	Q-index 13	S.E. 13
KIPO	PCT National	EP	109	0.9879	0.0290	94	1.0608	0.0687	92	1.2151	0.0743
		JP	60	1.0898	0.0779	56	1.2059	0.0917	55	1.2807	0.1021
		OT	9	0.8844	0.2052	9	1.0355	0.1324	9	1.2482	0.1449
		US	34	0.9683	0.0711	28	1.0528	0.0815	29	1.1261	0.0821
KIPO	PCT National	Total	212	1.0065	0.0272	187	1.0914	0.0496	185	1.2203	0.0529

Table 53: Detailed forecasting results for PCT applications entering the national phase at KIPO (Korea) – Random group

Regarding filings growth rates for national phase PCT applications in the various offices, these also vary strongly according to Office and country of origin. While filings at SIPO are again strong, this is not so prominent this time for KIPO. Future national phase PCT filings generally remain growing at all offices tested. Regarding blocs of origin, Japan and Others (presumably meaning mostly China) are a strong source of national phase PCT filings at all Offices studied. Again it should be noted that these growth rate estimates apply only to the population from which the sample was selected, namely applicants to EPO for Euro-direct and PCT-IP filings in 2010.

12 Annex VI: Respondents' profiles

In **Sections C** and **E** of the questionnaire, some of the questions asked respondents to indicate the profile of the company, including company/organisation type, the number of persons employed, the joint clusters that best describe the applicant's business, and the year of foundation of the company. The results from these questions are analysed in this annex, with the other questions from Sections C and E analysed in the following annexes VII and VIII, respectively.

12.1 All respondents

These findings represent the totality of responses to the survey. As in the main forecasting exercise of this report, it is considered better here to analyse and report results separately for the Biggest and Random groups, and not to provide combined results for all respondents.

12.2 Respondents from the Biggest group

Figure 7 shows that the majority of companies in the Biggest group were founded in the first half of the twentieth century. While 44% of Biggest group applicants were active at the EPO more or less from the start of its operations (essentially in 1978), only 9% began patenting activities at the EPO after 2000.²⁶

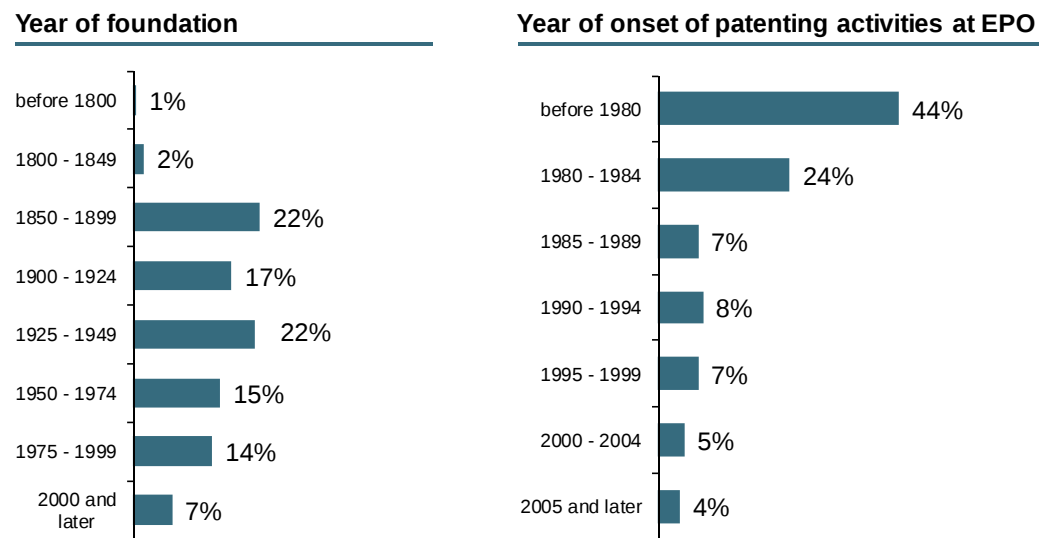


Figure 7: Biggest group by year of foundation and year of onset of patenting activities at the EPO

Broken down by residence bloc, distributions of year of foundation and number of employees are shown in the following two tables:

²⁶ A few responses indicating activity before the start of operations of the EPO were removed before analysing the data for the Biggest group and the Random group.

Biggest group
By year of foundation
Total and breakdown by residence bloc

Residence bloc	before 1800	1800 - 1849	1850 - 1899	1900 - 1924	1925 - 1949	1950 - 1974	1975 - 1999	2000 and later	Grand total	No. of cases
Total	1%	2%	22%	17%	22%	15%	14%	7%	100%	144
EP	1%	4%	32%	15%	14%	14%	11%	10%	100%	73
JP	0%	0%	9%	23%	40%	19%	8%	2%	100%	53
OT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3
US	0%	0%	27%	13%	0%	7%	40%	13%	100%	15

Table 54: Biggest group by year of foundation 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%	1%	1%	4%	15%	16%	42%	21%	100%	135
EP	0%	0%	1%	1%	5%	8%	14%	48%	22%	100%	73
JP	0%	0%	0%	0%	2%	23%	21%	40%	13%	100%	47
OT	0%	0%	0%	0%	25%	50%	0%	0%	25%	100%	4
US	0%	0%	0%	0%	0%	9%	9%	27%	55%	100%	11

Table 55: Biggest group by number of employees and residence bloc

With respect to the type of organisation, as in previous years, the overwhelming majority of Biggest group applicants (94.8% this year) are private enterprises.

12.3 Respondents from the Random group

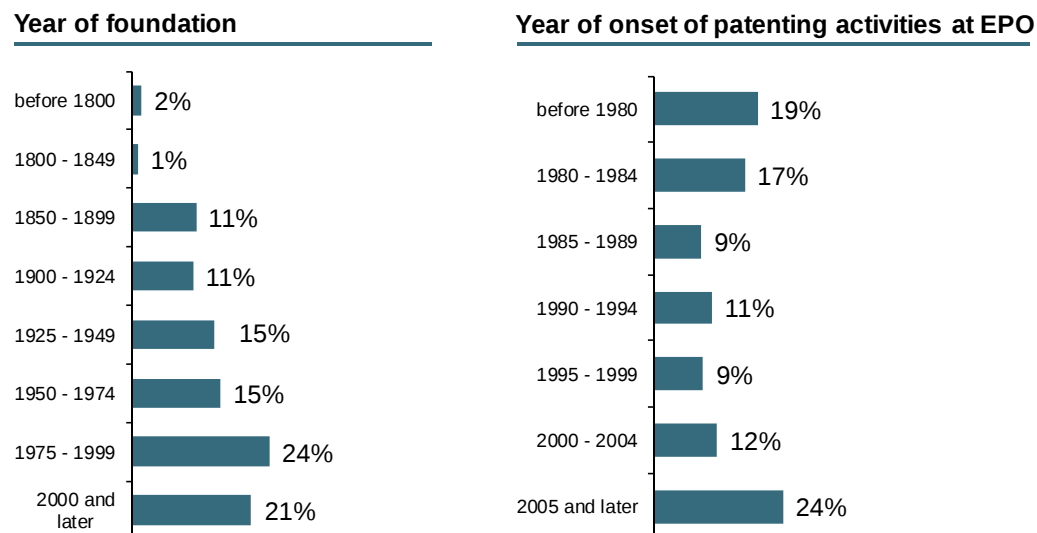


Figure 8: Random group by year of foundation and year of onset of patenting activities at the EPO

Figure 8 shows that, in the Random group, 45% of companies were founded after 1974 and only 19% were active at the EPO from the onset (before 1980), while 36% initiated activities at the EPO only from 2000 onwards.

Broken down by residence bloc, distributions of year of foundation and number of employees are shown in the following two tables:

Random group

By year of foundation

Total and breakdown by residence bloc

Residence bloc	before 1800	1800 - 1849	1850 - 1899	1900 - 1924	1925 - 1949	1950 - 1974	1975 - 1999	2000 and later	Grand total	No. of cases
Total	2%	1%	11%	11%	15%	15%	24%	21%	100%	620
EP	3%	2%	12%	8%	12%	15%	27%	22%	100%	398
JP	0%	0%	11%	19%	34%	20%	6%	9%	100%	114
OT	0%	0%	3%	5%	0%	21%	37%	34%	100%	38
US	0%	0%	11%	17%	7%	7%	30%	27%	100%	70

Table 56: Random group broken down by year of foundation 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	0%	7%	10%	18%	14%	21%	10%	15%	5%	100%	605
EP	1%	7%	13%	21%	12%	20%	9%	13%	4%	100%	393
JP	0%	1%	1%	6%	12%	34%	15%	26%	6%	100%	107
OT	0%	10%	8%	21%	31%	15%	10%	0%	5%	100%	39
US	0%	11%	11%	17%	17%	11%	8%	15%	12%	100%	66

Table 57: Random group broken down by persons employed and residence bloc

With respect to the type of organisation, as in previous years the overwhelming majority of the applicants that responded in the Random group are private enterprises (91.1% this year), while the second biggest group are educational institutions (4.6% this year) followed by Government R&D (2.4% this year).

12.4 Estimated composition of the population of EPO applicants

Although the Random group is primarily designed to be a random sample drawn from the pool of applications, it can also be used to make inferences about the properties and composition of the population of EPO applicants if a proper weighting scheme is used.

The weighting to estimate applicant population characteristics uses the extended structural weight approach described in the *Future Filings Survey 2010 report*²⁷. These weights are based on the denominator of the Poisson weight and then an adjustment to match the sample to the population by bloc and size classes. As last year, the adjustment is achieved solely by using the sample response rate by size class per bloc of residence (SRSS).

Table 58 shows bloc-wise 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"), but class midpoints are used in the analysis. This year, as in the previous four years, bloc-specific SRSS values were used since there are pronounced differences in sample response rates between blocs.

²⁷ Cf. Future Filings Survey 2010 report, Section 11.4, p. 77.

class	lb	ub	EP	JP	OT	US	TOTAL
1	1	1	0.27	0.24	0.11	0.14	0.22
2	2	2	0.31	0.29	0.14	0.17	0.26
3	3	3	0.30	0.50	0.14	0.20	0.29
4	4	5	0.38	0.21	0.20	0.13	0.29
5	6	9	0.40	0.34	0.10	0.16	0.30
6	10	19	0.41	0.44	0.13	0.12	0.32
7	20	39	0.41	0.42	0.05	0.16	0.33
8	40	9999999	0.42	0.53	0.04	0.15	0.36

Table 58: Bloc-wise SRSS values of the Random sample by filing count class

The results in **Table 58** are consistent with **Table 35**, which also shows that the highest response rates are found from applicants residing in Japan and the EPC.

Extended structural weights are applied for estimating distributions for the whole applicant population by year of foundation and the onset of patenting activities at the EPO, giving the following results:

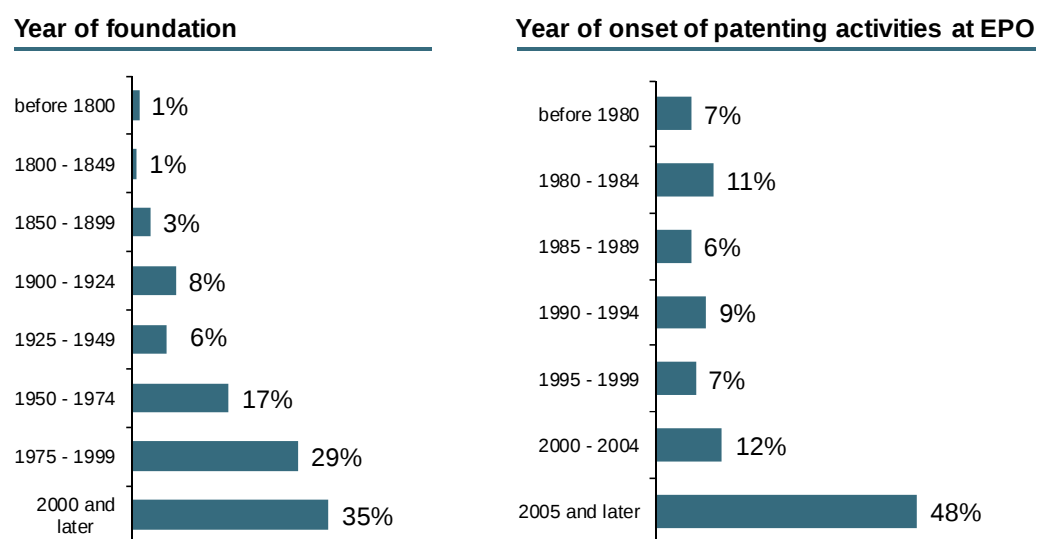


Figure 9: Estimated distribution of the EPO patent filings survey population by year of foundation and year of onset of patenting activities at the EPO

The inference for the whole applicant population is that 64% of applicant companies were founded after 1974 (2010 report: 73%), 7% of applicants were active at the EPO before 1980 (2010 report: 2%), and a majority - 60% - initiated patenting activities at the EPO after 1999 (2010 report: 62%). Both distributions in **Figure 9** show a strong contrast to the data for the Biggest group in **Figure 7**.

Separated by residence bloc, the estimated composition of the applicant distributions can be summarised as follows:

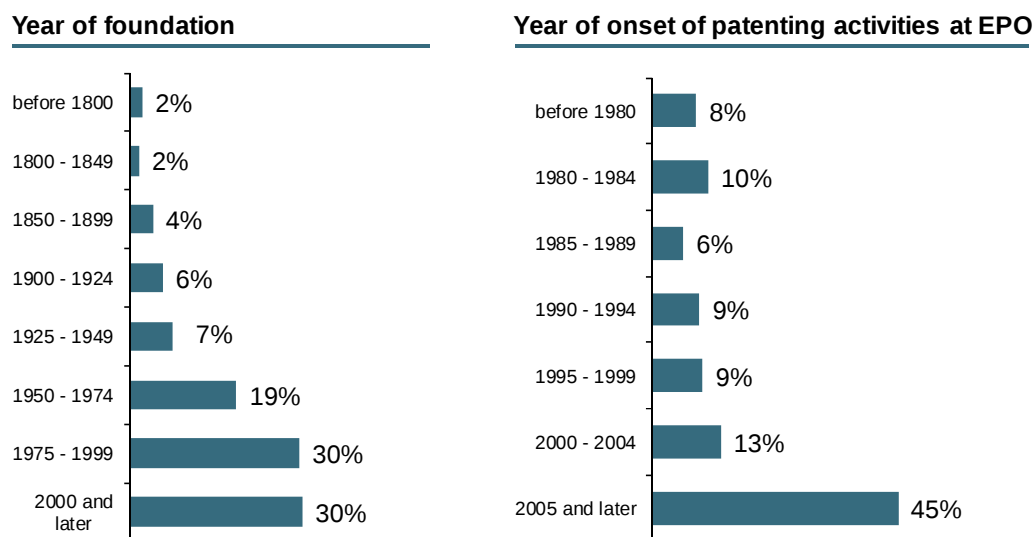


Figure 10: Estimated distribution of the EPO patent filings survey population in the EPC (EP) residence bloc by year of foundation and year of onset of patenting activities at the EPO

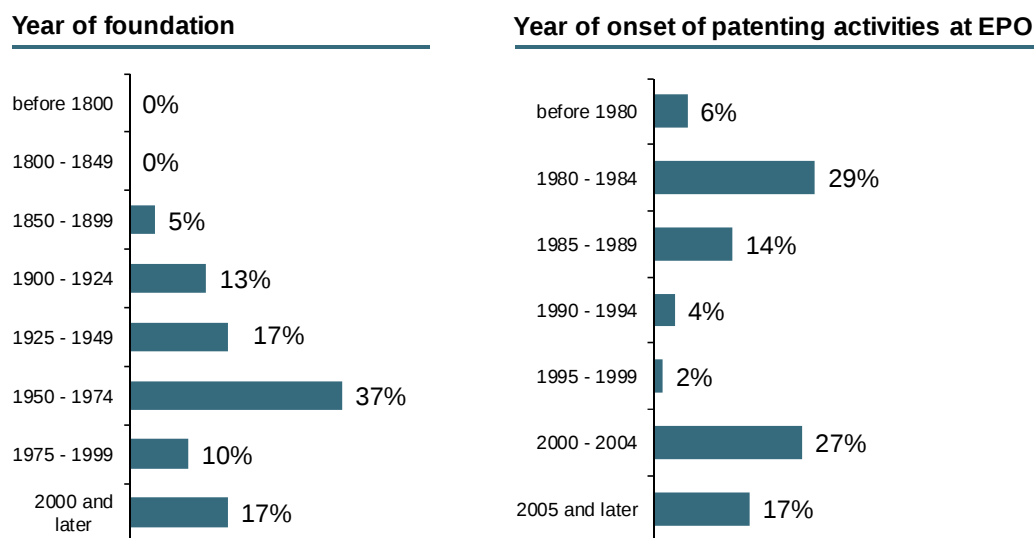
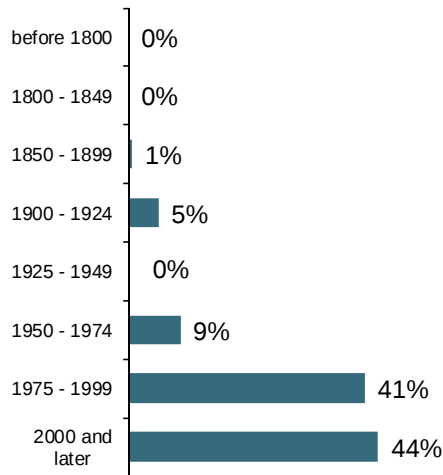


Figure 11: Estimated distribution of the EPO patent filings survey population in the Japan (JP) residence bloc by year of foundation and year of onset of patenting activities at the EPO

Year of foundation



Year of onset of patenting activities at EPO

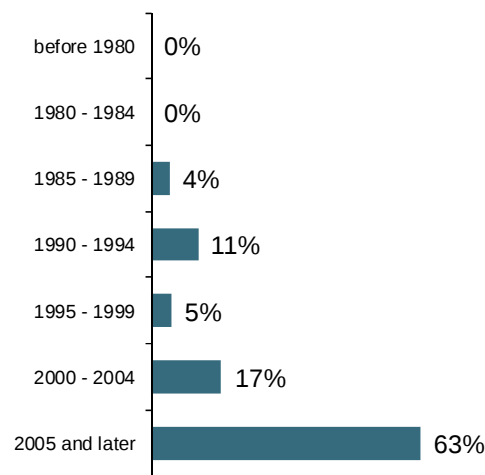
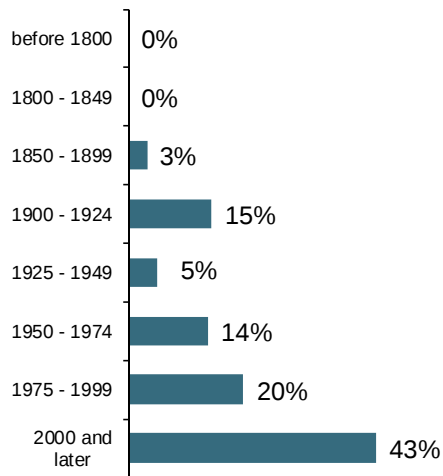


Figure 12: Estimated distribution of the EPO patent filings survey population in the Others (OT) residence bloc by year of foundation and year of onset of patenting activities at the EPO

Year of foundation



Year of onset of patenting activities at EPO

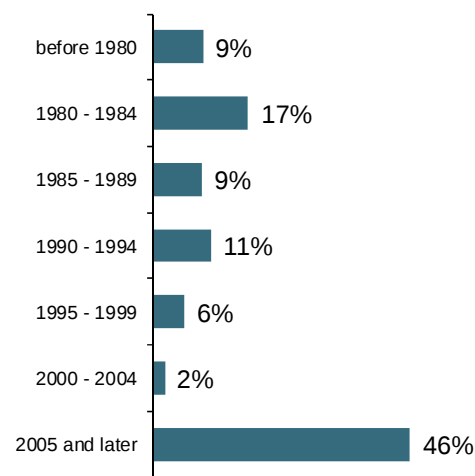


Figure 13: Estimated distribution of the EPO patent filings survey population in the US residence bloc by year of foundation and year of onset of patenting activities at the EPO

Notable differences can be inferred between the typical histories of applicants from the various blocs. Many Japanese applicants at the EPO were founded before their European counterparts and applicants from the US, and even more so the OT bloc, which tend to be youngest. The difference in maturity is mirrored in the onset of patenting activities at the EPO: 49% of Japanese applicants at the EPO began filing before 1990, whereas, for all other blocs, more than two thirds of current applicants began filing at the EPO in 1990.

The "U" shaped distribution on the right side of **Figure 11**, for the year of onset of patenting activities at EPO for Japan, is supported by a similar result in the 2010 survey report. This may reflect the long recessionary period in Japan in the 1990s. On the other hand, the apparent "U" shape on the right side of **Figure 13** for US-based applicants does not compare well to the analogous distribution in the 2010 survey report.

Broken down by residence bloc, the inferred distributions of year of foundation and number of employees are shown in the following two tables:

Estimation incorporating structural weights

By year of foundation

Total and breakdown by residence bloc

Residence bloc	before 1800	1800 - 1849	1850 - 1899	1900 - 1924	1925 - 1949	1950 - 1974	1975 - 1999	2000 and later	Total
Total	1.3%	0.9%	3.3%	7.8%	6.1%	17.0%	29.1%	34.5%	100%
EP	2.3%	1.7%	4.1%	5.9%	7.4%	18.7%	29.7%	30.2%	100%
JP	0.0%	0.0%	4.6%	13.5%	17.4%	37.2%	10.3%	17.1%	100%
OT	0.0%	0.0%	0.7%	5.3%	0.0%	9.1%	41.3%	43.7%	100%
US	0.0%	0.0%	3.2%	14.5%	4.9%	13.9%	20.1%	43.3%	100%

Table 59: Estimated distribution of EPO applicants by year of foundation and residence bloc

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	0.8%	15.8%	15.6%	29.5%	19.5%	11.5%	4.0%	2.5%	0.9%	100%
EP	1.4%	16.3%	19.7%	31.0%	12.9%	11.2%	4.5%	2.8%	0.2%	100%
JP	0.0%	7.6%	1.3%	28.1%	29.0%	22.3%	3.9%	7.2%	0.7%	100%
OT	0.0%	13.7%	10.5%	27.9%	31.5%	11.3%	3.8%	0.0%	1.3%	100%
US	0.0%	18.9%	13.8%	27.3%	22.2%	9.5%	2.7%	3.2%	2.4%	100%

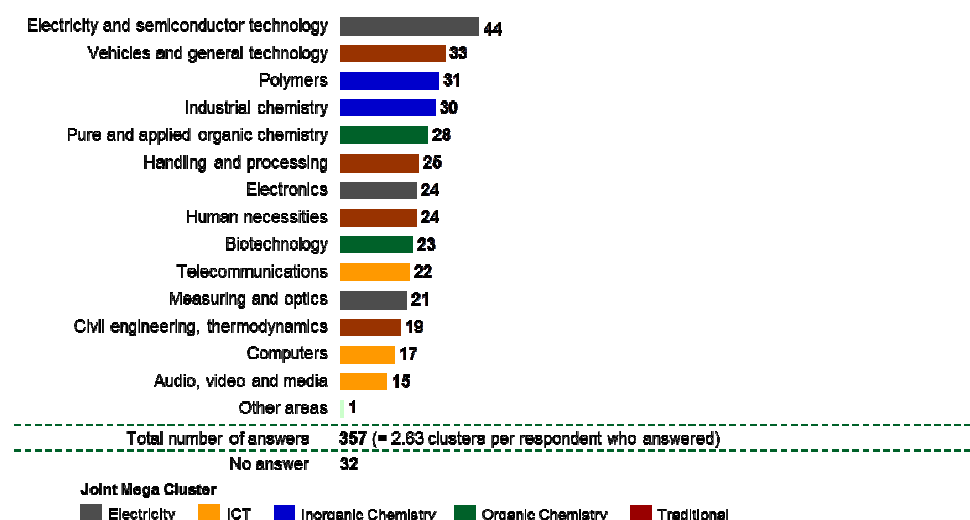
Table 60: Estimated distribution of EPO applicants by number of employees and residence bloc

Under a simplified definition of small and medium-sized enterprises (SME) as companies with up to 249 employees, the inferred proportion in the applicant population in 2010 is 61.7%, compared to an estimate of 66.7% in 2009 that was found in the previous survey. This difference seems to be mainly due to the results from the US bloc, where the inferred proportion changed from 75.3% for 2009 to 60% in 2010. See **Annex VII** below for further breakdowns of numbers of staff per company who are involved in inventive activities.

With respect to the type of organisation, as in previous years, the overwhelming majority of EPO applicants (91.1%) are private enterprises, while the second biggest group are educational institutions (3.6%).

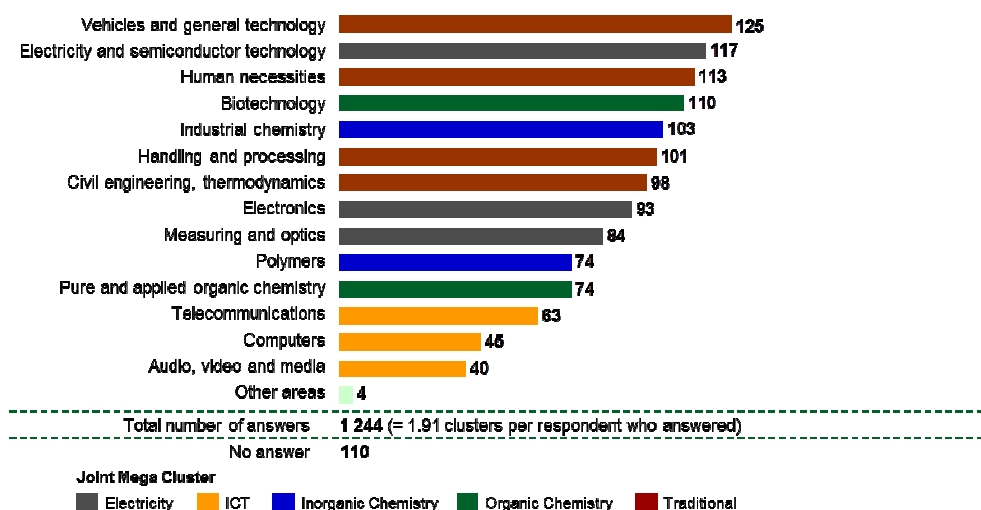
12.5 EPO joint clusters & mega clusters

All applicants in the survey were asked to describe themselves in terms of membership of one or more of the EPO joint clusters (questionnaire **Part C**, question d). The following figures provide an overview of the sample composition in terms of joint clusters for the Biggest and Random groups.



Base: n = 166, all respondents of the Biggest group incl. overlapping members of the Random group, multiple answers possible, absolute numbers of responses (unweighted, including ex-post cluster allocation, excluding deliberately selected addresses by EPO)

Figure 14: Number of responses per joint cluster (Biggest group including overlapping members of the Random group)



Base: n = 780, all respondents of the Random group incl. overlapping members of the Biggest group, multiple answers possible, absolute numbers of responses (unweighted, including ex-post cluster allocation, excluding deliberately selected addresses by EPO)

Figure 15: Number of responses per joint cluster (Random group including overlapping members of the Biggest group)

MC*	Joint cluster	Total	Bloc			
			EPC	US	JP	OT
Ele	1. Electricity/semiconductor tech	117	59	15	35	8
	2. Electronics	93	58	15	15	5
	3. Measuring and optics	84	50	11	14	9
ICT	4. Audio, video and media	40	22	4	10	4
	5. Computers	45	21	7	11	6
	6. Telecommunications	63	36	7	16	4
InoC	7. Industrial chemistry	103	58	17	23	5
	8. Polymers	74	38	11	22	3
OrC	9. Biotechnology	110	74	17	14	5
	10. Pure/applied organic chemistry	74	38	12	20	4
Trad	11. Civil engineering, thermodynamics	98	84	5	7	2
	12. Handling and processing	101	62	11	23	5
	13. Human necessities	113	71	16	17	9
	14. Vehicles and general technology	125	82	8	29	6
	Other areas	4	4	-	-	-
	No answer	110	61	25	14	10

* Mega Clusters: Ele = Electricity ICT = ICT InoC = Inorganic Chemistry
OrC = Organic Chemistry Trad = Traditional

Base: n = 760/496/99/115/50, all respondents of the Random group, including overlapping members of the Biggest group total/EP/US/JP/OT, absolute numbers of respondents (unweighted, including ex-post cluster allocation, excluding deliberately selected addresses by the EPO)

Table 61: Number of responses per joint cluster (Random group including overlapping members of the Biggest group) broken down by bloc

Figure 16 shows the distribution of responses in the Biggest group combined with the number of joint clusters chosen. On average, the interviewees reported data for 2.63 joint clusters. The Random group respondents reported 1.91 joint clusters which is again on the level of 2007 after an increase in the years 2008 to 2010 (see **Figure 17**). (The Random group in the previous 2010, 2009, 2008 and 2007 surveys reported data for 2.21, 2.23, 2.02 and 1.91 joint clusters on average, respectively). In terms of the five mega clusters (for amalgamation of joint clusters into joint mega clusters see **Annex III, Section 9.2**), the average number of mega clusters per respondent is 1.48 for the entire sample (1.58 in 2010), 1.82 for the Biggest group respondents (1.81 in 2010), and 1.47 for Random group respondents (1.60 in 2010).

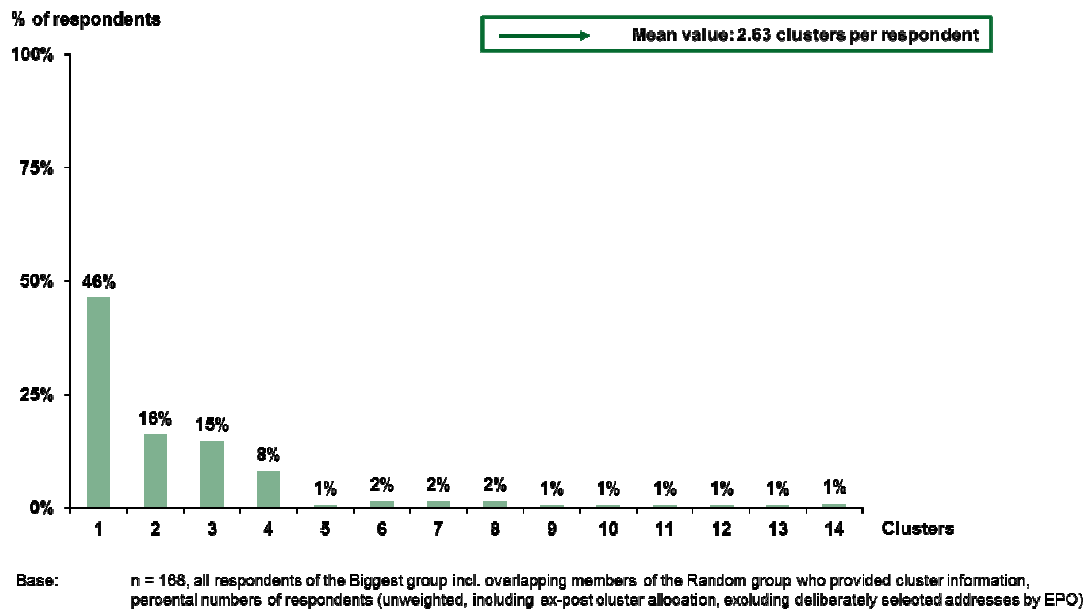


Figure 16: Number of joint clusters selected per respondent (Biggest including overlapping members of the Random group)

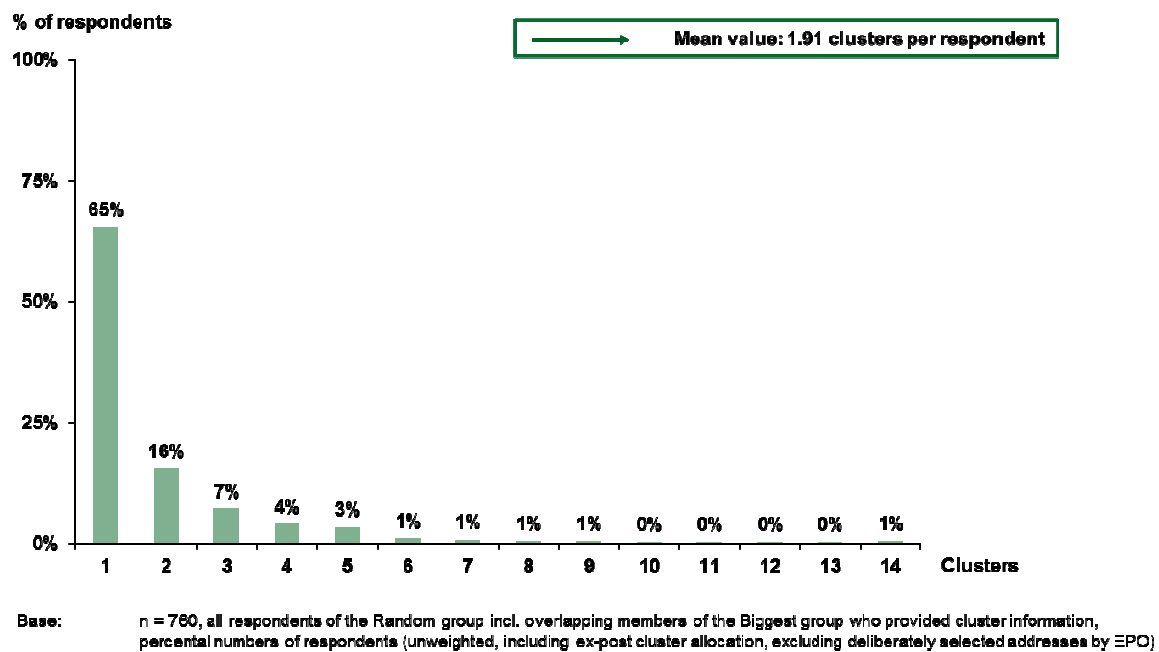


Figure 17: Number of joint clusters selected per respondent (Random group including overlapping members of the Biggest group)

Table 62 and **Table 63** below indicate which combinations of joint clusters and mega clusters are cited most frequently. Each table shows a two-way matrix describing the cluster combinations selected by the interviewees of the Biggest group (**Table 62**), and Random group (**Table 63**). The tables indicate pairwise combinations, but this picture is not absolutely complete, as **Figure 16** and **Figure 17** show that respondents sometimes indicate activities in more than two joint clusters.

MC*	Joint cluster	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Other areas
Ele	1. Electricity/semiconductor tech	44	17	15	11	11	15	11	10	10	8	9	10	8	13	
	2. Electronics	17	24	10	8	10	10	5	6	6	2	7	6	5	9	
	3. Measuring and optics	15	10	21	5	7	10	7	9	8	7	6	7	8	9	
ICT	4. Audio, video and media	11	8	5	15	8	8	4	4	5	3	4	7	5	4	
	5. Computers	11	10	7	8	17	9	5	6	4	5	4	6	4	4	
	6. Telecommunications	15	10	10	8	9	22	4	6	5	4	4	8	4	8	
InoC	7. Industrial chemistry	11	5	7	4	5	4	30	18	9	13	10	5	8	4	1
	8. Polymers	10	6	9	4	6	6	18	31	12	16	10	7	11	6	
OrC	9. Biotechnology	10	6	8	5	4	5	9	12	23	12	8	6	11	5	
	10. Pure/applied organic chemistry	8	2	7	3	5	4	13	16	12	28	5	5	9	4	1
Trad	11. Civil engineering, thermodynamics	9	7	6	4	4	4	10	10	8	5	19	6	7	7	
	12. Handling and processing	10	6	7	7	6	8	5	7	6	5	6	25	7	8	
	13. Human necessities	8	5	8	5	4	4	8	11	11	9	7	7	24	4	
	14. Vehicles and general technology	13	9	9	4	4	8	4	6	5	4	7	8	4	33	
	Other areas							1			1					1

* Mega Clusters: Ele = Electricity ICT = ICT InoC = Inorganic Chemistry OrC = Organic Chemistry Trad = Tradition

Base: n = 168, all respondents of the Biggest group, incl. overlapping members of the Random group who provided cluster information, absolute numbers of respondents (unweighted, including ex-post cluster allocation, excluding deliberately selected addresses by the EPO)

Table 62: Number of responses per joint cluster combination (two-way matrix, Biggest group including overlapping members of the Random group)

MC*	Joint cluster	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Other areas
Ele	1. Electricity/semiconductor tech	117	39	34	21	23	33	28	25	22	17	17	22	18	28	
	2. Electronics	39	93	35	21	31	32	20	19	25	16	23	15	19	22	1
	3. Measuring and optics	34	35	84	15	19	24	23	21	29	19	14	18	20	21	1
ICT	4. Audio, video and media	21	21	15	40	17	23	10	10	13	9	8	11	13	10	1
	5. Computers	23	31	19	17	45	22	12	14	16	15	11	11	11	12	1
	6. Telecommunications	33	32	24	23	22	63	12	13	15	12	12	12	12	20	1
InoC	7. Industrial chemistry	28	20	23	10	12	12	103	38	29	29	18	19	23	15	1
	8. Polymers	25	19	21	10	14	13	38	74	29	32	17	20	24	16	
OrC	9. Biotechnology	22	25	29	13	16	15	29	29	110	38	14	16	36	12	1
	10. Pure/applied organic chemistry	17	16	19	9	15	12	29	32	38	74	10	15	27	10	2
Trad	11. Civil engineering, thermodynamics	17	23	14	8	11	12	18	17	14	10	98	16	12	23	1
	12. Handling and processing	22	15	18	11	11	12	19	20	16	15	16	101	16	18	1
	13. Human necessities	18	19	20	13	11	12	23	24	36	27	12	16	113	12	1
	14. Vehicles and general technology	28	22	21	10	12	20	15	16	12	10	23	18	12	125	1
	Other areas		1	1	1	1	1	1		1	2	1	1	1	1	4

* Mega Clusters: Ele = Electricity ICT = ICT InoC = Inorganic Chemistry OrC = Organic Chemistry Trad = Tradition

Base: n = 760, all respondents of the Random group, incl. overlapping members of the Biggest group who provided cluster information, absolute numbers of respondents (unweighted, including ex-post cluster allocation, excluding deliberately selected addresses by the EPO)

Table 63: Number of responses per joint cluster combination (two-way matrix, Random group including overlapping members of the Biggest group)

13 Annex VII: Analysis of company economic attributes

In **Part C** of the questionnaire, applicants were asked to provide more detailed information about their sales; R&D budgets; inventions; numbers of staff involved in making inventions; and numbers of first patent filings throughout the world (with splits by joint clusters for R&D budgets and first filings).²⁸ All responses were given with respect to activities in 2010.

For the questions on R&D budget and sales, currencies had to be specified by the respondents. Therefore, before analysing Part C, the numbers given for R&D budget and sales were recalculated to EUR. Interbank exchange rates current as of 27 January 2012 were applied to the responses to those questions.

This year, the grouping of economic attributes has been modified in order to ease orientation and interpretation. The tables in this section contain three groups of attributes.

The first group contains attributes related to company size. The individual attributes on a column by column basis are as follows: total sales, number of employees, approximate R&D budget, and total number of inventions considered for a patent application.

The second group contains ratio-type attributes related to companies' patenting activities. The individual attributes in this group are: total sales by first patent filing, R&D budget by first patent filing, proportion of inventions that lead to patent filings, and first patent filings by number of inventions. The ratio "proportion of inventions that lead to patent filings" was explicitly asked for in the questionnaire, while the other ratios in this group were calculated from separate questions regarding their numerators and denominators.

The third group contains attributes which attempt a characterisation of companies' employee base in terms of innovative activities. The individual attributes are: proportion of staff directly involved in making inventions, proportion of inventive staff under the age of forty, and proportion of inventive staff that are female.

Summary results for the attributes are shown in **Table 64**. Bearing in mind the asymmetry of some distributions among the population, particularly for variables that measure quantities related to the size of applicant companies, and also on the grounds of considering the robustness of the estimates, for the Random group it is considered more appropriate to compare the weighted medians rather than the weighted means.

Detailed tables are shown in unweighted and weighted versions for the Random group in **Table 65** to **Table 68**. These tables contain breakdowns by residence bloc and mega cluster.

For the analyses broken down by residence bloc, **Table 65** contains the unweighted analyses for the Random group and **Table 66** contains the weighted results of the Random group.

²⁸ A more extensive analysis of the company economic factors in 2009, based on the previous 2010 survey, is Hingley, P., and Dannegger, F., "Distributions of structures and activities of applicants at the European Patent Office", World Patent Information (2012), available online 26 January 2012.

For the analyses itemised by mega cluster, **Table 67** contains the unweighted analyses for the Random group and **Table 68** contains the weighted results of the Random group. These technology breakdowns are made by the smaller set of five mega clusters rather than by 14 joint clusters as in reports up to 2007.

Due to the intricate weighting mechanism with large weight spans, comparisons should be made with caution. The analyses were made using all data available for the groups concerned, while in surveys before 2007 some outliers were excluded. The distribution of the measured quantities within the applicant population shifts slightly from year to year due to changes in economic circumstances.

By sample group

Sample group	Statistic	Approximate total sales throughout the world in 2010 [EUR]	Number of employees at the end of 2010	Approximate R&D budget in 2010 [EUR]	Total number of inventions considered for patent application in 2010	Number of first patent filings throughout the world in 2010	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Proportion of inventions that lead to patent filings throughout the world	First patent filings by number of inventions	Proportion of staff directly involved in making inventions	Proportion of inventive staff under the age of 40	Proportion of inventive staff that are female
Biggest Unweighted	N	120	135	69	116	172	119	69	112	116	95	35	41
	MIN	15 390	18	308 648	13	11	4 938	1 336	10%	3%	0%	8%	0%
	MAX	126 000 000 000	470 000	7 465 329 000	30 000	6 918	416 000 000	36 736 842	100%	470%	100%	83%	50%
	MEAN	14 233 995 513	42 922	1 015 075 616	1 342	671	39 484 978	3 946 239	68%	75%	16%	57%	15%
	MEDIAN	6 787 135 352	15 000	372 000 000	450	231	18 324 913	993 846	70%	70%	6%	60%	10%
	SE	1 958 884 515	6 257	213 716 752	308	87	6 216 300	939 013	2%	4%	2%	3%	2%
Random Unweighted	N	451	603	301	520	685	415	287	523	492	505	373	394
	MIN	9 866	1	2 500	1	1	383	1 336	0%	1%	0%	0%	0%
	MAX	126 000 000 000	405 000	7 465 329 000	30 000	6 918	3 378 378 378	92 672 726	100%	700%	100%	100%	100%
	MEAN	5 134 528 916	11 307	268 150 108	353	198	58 548 742	2 396 153	63%	79%	19%	50%	14%
	MEDIAN	449 866 800	1 000	9 322 898	21	18	15 522 277	567 368	66%	70%	8%	50%	7%
	SE	668 889 654	1 404	55 005 221	73	24	9 890 126	418 125	1%	3%	1%	1%	1%
Random Weighted	N	451	603	301	520	685	415	287	523	492	505	373	394
	MIN	9 866	1	2 500	1	1	383	1 336	0%	1%	0%	0%	0%
	MAX	126 000 000 000	405 000	7 465 329 000	30 000	6 918	3 378 378 378	92 672 726	100%	700%	100%	100%	100%
	MEAN	847 236 732	2 118	31 688 831	42	30	37 991 274	2 743 560	60%	95%	24%	49%	13%
	MEDIAN	22 694 700	130	756 490	4	4	7 751 464	261 028	60%	80%	10%	50%	3%
	SE	235 898 509	492	15 558 476	16	7	5 261 027	759 240	1%	4%	1%	2%	1%

Table 64: Main statistics for the various sample groups

Random group
Unweighted

Residence bloc	Statistic	Approximate total sales throughout the world in 2010 [EUR]	Number of employees at the end of 2010	Approximate R&D budget in 2010 [EUR]	Total number of inventions considered for patent application in 2010	Number of first patent filings throughout the world in 2010	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Proportion of inventions that lead to patent filings throughout the world	First patent filings by number of inventions	Proportion of staff directly involved in making inventions	Proportion of inventive staff under the age of 40	Proportion of inventive staff that are female
EP	N	284	391	201	336	441	255	191	343	315	351	263	278
	MIN	10 000	1	2 500	1	1	2 000	1 336	0%	1%	0%	0%	0%
	MAX	126 000 000 000	405 000	7 465 329 000	8 800	4 393	3 378 378 378	36 736 842	100%	700%	100%	100%	100%
	MEAN	4 094 369 261	9 176	230 921 667	138	78	69 887 206	2 314 895	63%	75%	19%	49%	15%
	MEDIAN	240 000 000	600	5 948 800	15	11	18 438 425	750 000	66%	69%	6%	50%	7%
	SE	867 042 925	1 604	65 546 441	35	15	15 348 308	334 094	2%	3%	1%	2%	1%
JP	N	99	107	54	90	113	98	54	87	90	67	37	41
	MIN	9 866	4	59 193	1	1	383	19 320	10%	3%	0%	0%	0%
	MAX	93 722 250 000	182 800	6 273 471 450	30 000	6 918	335 382 157	36 679 423	100%	200%	69%	88%	40%
	MEAN	8 561 049 696	13 767	392 400 993	1 311	736	27 384 316	1 761 145	74%	74%	14%	54%	8%
	MEDIAN	2 959 650 000	4 730	116 906 175	325	247	9 486 824	450 715	75%	72%	11%	56%	4%
	SE	1 489 232 015	2 776	120 448 417	382	119	5 523 763	771 761	2%	3%	2%	3%	1%
OT	N	25	39	16	33	43	23	14	30	30	37	33	35
	MIN	16 124	4	151 298	1	1	3 366	58 838	0%	4%	0%	20%	0%
	MAX	37 824 500 000	160 000	169 182 272	800	1 000	312 200 561	92 672 726	100%	470%	90%	100%	100%
	MEAN	2 793 362 854	6 818	21 048 407	69	91	27 350 032	7 724 593	47%	109%	24%	68%	16%
	MEDIAN	30 513 720	500	3 404 205	10	10	4 778 080	690 297	50%	92%	11%	75%	11%
	SE	1 591 821 760	4 316	11 372 857	27	31	14 043 851	6 550 980	6%	20%	4%	4%	3%
US	N	43	66	30	61	88	39	28	63	57	50	40	40
	MIN	75 649	1	37 825	1	1	36 312	3 026	0%	5%	0%	0%	0%
	MAX	47 268 521 160	310 000	7 186 655 000	3 709	2 600	791 792 867	18 912 250	100%	533%	100%	100%	50%
	MEAN	5 476 597 205	22 594	425 716 639	274	161	81 122 484	1 510 888	58%	90%	25%	40%	11%
	MEDIAN	562 828 560	800	1 702 103	18	23	19 465 240	504 327	53%	67%	11%	42%	3%
	SE	1 781 623 422	6 766	253 957 689	93	43	25 814 009	672 502	4%	13%	4%	5%	2%
Total	N	451	603	301	520	685	415	287	523	492	505	373	394
	MEAN	5 134 528 916	11 307	268 150 108	353	198	58 548 742	2 396 153	63%	79%	19%	50%	14%
	MEDIAN	449 866 800	1 000	9 322 898	21	18	15 522 277	567 368	66%	70%	8%	50%	7%

Table 65: Main statistics for activities by residence bloc – Random group (unweighted)

Random group

Cases weighted with structural weight

Residence bloc	Statistic	Approximate total sales throughout the world in 2010 [EUR]	Number of employees at the end of 2010	Approximate R&D budget in 2010 [EUR]	Total number of inventions considered for patent application in 2010	Number of first patent filings throughout the world in 2010	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Proportion of inventions that lead to patent filings throughout the world	First patent filings by number of inventions	Proportion of staff directly involved in making inventions	Proportion of inventive staff under the age of 40	Proportion of inventive staff that are female
EP	N	284	391	201	336	441	255	191	343	315	351	263	278
	MIN	10 000	1	2 500	1	1	2 000	1 336	0%	1%	0%	0%	0%
	MAX	126 000 000 000	405 000	7 465 329 000	8 800	4 393	3 378 378 378	36 736 842	100%	700%	100%	100%	100%
	MEAN	464 521 341	1 538	20 580 320	20	12	43 214 449	944 891	59%	85%	24%	44%	14%
	MEDIAN	14 000 000	95	713 856	4	2	7 142 857	250 000	60%	70%	8%	48%	0%
	SE	249 430 304	439	16 937 463	9	4	7 810 696	145 916	2%	4%	2%	2%	1%
JP	N	99	107	54	90	113	98	54	87	90	67	37	41
	MIN	9 866	4	59 193	1	1	383	19 320	10%	3%	0%	0%	0%
	MAX	93 722 250 000	182 800	6 273 471 450	30 000	6 918	335 382 157	36 679 423	100%	200%	69%	88%	40%
	MEAN	1 903 381 660	3 192	64 596 394	226	143	18 417 769	618 588	76%	88%	12%	40%	7%
	MEDIAN	173 632 800	571	4 932 750	22	15	9 862 121	197 310	80%	75%	8%	44%	3%
	SE	646 868 222	1 111	44 573 781	143	50	3 502 038	333 620	2%	5%	1%	4%	1%
OT	N	25	39	16	33	43	23	14	30	30	37	33	35
	MIN	16 124	4	151 298	1	1	3 366	58 838	0%	4%	0%	20%	0%
	MAX	37 824 500 000	160 000	169 182 272	800	1 000	312 200 561	92 672 726	100%	470%	90%	100%	100%
	MEAN	604 586 797	1 967	14 578 212	22	30	13 278 999	9 422 688	46%	105%	24%	70%	16%
	MEDIAN	9 077 880	200	2 288 529	5	5	1 891 225	1 002 349	50%	84%	12%	75%	10%
	SE	730 186 323	2 055	7 858 091	13	17	7 685 331	7 408 358	6%	18%	4%	4%	4%
US	N	43	66	30	61	88	39	28	63	57	50	40	40
	MIN	75 649	1	37 825	1	1	36 312	3 026	0%	5%	0%	0%	0%
	MAX	47 268 521 160	310 000	7 186 655 000	3 709	2 600	791 792 867	18 912 250	100%	533%	100%	100%	50%
	MEAN	1 932 994 663	3 559	69 299 570	64	44	63 003 656	1 256 075	67%	111%	29%	41%	8%
	MEDIAN	98 343 700	150	756 490	4	4	12 608 167	189 123	60%	100%	10%	47%	0%
	SE	1 139 602 831	2 238	78 002 023	34	18	20 125 969	665 499	4%	13%	5%	5%	2%
Total	N	451	603	301	520	685	415	287	523	492	505	373	394
	MEAN	847 236 732	2 118	31 688 831	42	30	37 991 274	2 743 560	60%	95%	24%	49%	13%
	MEDIAN	22 694 700	130	756 490	4	4	7 751 464	261 028	60%	80%	10%	50%	3%

Table 66: Main statistics for activities by residence bloc – Random group (weighted)

Random group
Unweighted

Mega Cluster	Statistic	Approximate total sales throughout the world in 2010 [EUR]	Number of employees at the end of 2010	Approximate R&D budget in 2010 [EUR]	Total number of inventions considered for patent application in 2010	Number of first patent filings throughout the world in 2010	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Proportion of inventions that lead to patent filings throughout the world	First patent filings by number of inventions	Proportion of staff directly involved in making inventions	Proportion of inventive staff under the age of 40	Proportion of inventive staff that are female
Electricity	N	126	166	84	144	188	126	78	151	147	142	99	110
	MIN	4 933	2	30 000	1	1	383	15 130	0%	3%	0%	0%	0%
	MAX	75 579 103 119	377 896	3 277 000 000	12 006	4 099	791 792 867	92 672 726	100%	470%	100%	100%	67%
	MEAN	3 335 896 339	9 687	154 359 025	338	179	38 398 111	2 717 942	63%	77%	20%	55%	11%
	MEDIAN	339 666 667	771	11 948 800	27	14	10 033 906	658 008	70%	67%	11%	60%	7%
	SE	755 378 517	2 755	48 108 303	106	35	8 557 485	1 198 997	2%	5%	2%	3%	1%
Organic Chemistry	N	69	114	61	93	132	69	52	108	97	99	64	72
	MIN	54 260	1	60 000	1	1	4 933	1 336	0%	1%	0%	0%	0%
	MAX	38 985 607 000	80 000	7 465 329 000	800	1 382	472 295 108	36 679 423	100%	533%	100%	100%	100%
	MEAN	2 784 023 384	4 567	310 135 519	71	60	57 485 949	4 875 898	63%	81%	28%	51%	31%
	MEDIAN	597 260 000	616	11 838 600	13	10	18 438 425	1 991 467	70%	70%	17%	50%	26%
	SE	731 727 430	1 053	139 695 178	15	13	11 425 884	1 059 502	3%	7%	3%	4%	3%
Inorganic Chemistry	N	84	107	49	89	118	84	49	103	97	91	63	66
	MIN	9 866	3	49 328	1	1	4 933	1 336	0%	1%	0%	0%	0%
	MAX	125 000 000 000	180 000	945 612 500	1 518	1 383	3 378 378 378	18 912 250	100%	450%	100%	97%	67%
	MEAN	4 520 356 309	8 109	101 638 332	126	99	93 947 491	2 020 422	66%	76%	21%	45%	18%
	MEDIAN	984 791 602	1 229	19 731 000	25	17	19 373 904	606 135	70%	73%	11%	50%	13%
	SE	1 545 921 762	2 057	28 158 190	27	18	41 139 282	532 812	3%	5%	3%	3%	2%
ICT	N	55	74	41	72	88	55	35	73	73	63	38	45
	MIN	4 933	1	7 565	1	1	383	8 571	10%	3%	0%	0%	0%
	MAX	42 723 471 048	161 333	6 808 410 000	6 018	4 250	840 000 000	36 736 842	100%	700%	100%	100%	52%
	MEAN	5 575 966 084	11 766	397 536 425	416	280	42 902 861	3 103 425	63%	85%	26%	54%	15%
	MEDIAN	545 454 545	1 220	16 700 000	22	16	9 834 370	1 176 471	64%	69%	11%	51%	13%
	SE	1 523 342 973	3 153	187 263 271	127	73	16 919 844	1 102 095	3%	11%	4%	4%	2%
Traditional	N	239	298	177	277	332	239	160	301	281	285	209	221
	MIN	26 646	1	2 500	0	1	3 366	1 336	0%	3%	0%	0%	0%
	MAX	126 000 000 000	120 000	6 866 000 000	13 234	6 918	1 250 000 000	19 963 852	100%	470%	100%	100%	100%
	MEAN	3 417 902 912	7 635	162 510 642	245	109	55 817 440	1 607 498	62%	73%	15%	50%	11%
	MEDIAN	480 000 000	1 205	7 110 000	22	13	16 810 889	535 880	65%	68%	5%	50%	6%
	SE	742 965 216	945	54 015 392	68	24	8 391 439	244 723	2%	3%	1%	2%	1%
Total	N	451	603	301	520	685	415	287	523	492	505	373	394
	MEAN	5 134 528 916	11 307	268 150 108	353	198	58 548 742	2 396 153	63%	79%	19%	50%	14%
	MEDIAN	449 866 800	1 000	9 322 898	21	18	15 522 277	567 368	66%	70%	8%	50%	7%

Table 67: Main statistics for activities in various sectors – Random group (unweighted)

Random group
Cases weighted with structural weight

Mega Cluster	Statistic	Approximate total sales throughout the world in 2010 [EUR]	Number of employees at the end of 2010	Approximate R&D budget in 2010 [EUR]	Total number of inventions considered for patent application in 2010	Number of first patent filings throughout the world in 2010	Total sales by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]	Proportion of inventions that lead to patent filings throughout the world	First patent filings by number of inventions	Proportion of staff directly involved in making inventions	Proportion of inventive staff under the age of 40	Proportion of inventive staff that are female
Electricity	N	126	166	84	144	188	126	78	151	147	142	99	110
	MIN	4 933	2	30 000	1	1	383	15 130	0%	3%	0%	0%	0%
	MAX	75 579 103 119	377 896	3 277 000 000	12 006	4 099	791 792 867	92 672 726	100%	470%	100%	100%	67%
	MEAN	672 190 134	1 651	21 622 101	40	26	22 310 915	7 992 605	60%	111%	23%	54%	9%
	MEDIAN	9 077 880	220	892 320	5	3	7 751 464	500 000	66%	80%	13%	56%	2%
	SE	255 568 169	791	13 024 142	26	10	6 320 127	2 785 052	3%	9%	2%	3%	1%
Organic Chemistry	N	69	114	61	93	132	69	52	108	97	99	64	72
	MIN	54 260	1	60 000	1	1	4 933	1 336	0%	1%	0%	0%	0%
	MAX	38 985 607 000	80 000	7 465 329 000	800	1 382	472 295 108	36 679 423	100%	533%	100%	100%	100%
	MEAN	1 246 492 082	1 693	57 752 486	47	26	32 778 757	1 392 559	61%	96%	34%	48%	32%
	MEDIAN	25 000 000	86	1 122 570	3	4	5 000 000	504 327	50%	100%	22%	50%	33%
	SE	424 049 992	488	55 676 279	11	5	9 189 913	417 166	3%	7%	3%	4%	4%
Inorganic Chemistry	N	84	107	49	89	118	84	49	103	97	91	63	66
	MIN	9 866	3	49 328	1	1	4 933	1 336	0%	1%	0%	0%	0%
	MAX	125 000 000 000	180 000	945 612 500	1 518	1 383	3 378 378 378	18 912 250	100%	450%	100%	97%	67%
	MEAN	1 936 145 814	3 112	77 766 715	45	32	65 079 430	1 856 593	62%	112%	21%	41%	15%
	MEDIAN	60 000 000	136	1 122 570	5	3	15 000 000	250 000	60%	94%	12%	45%	10%
	SE	756 412 965	1 249	34 139 695	14	9	20 743 233	626 591	3%	11%	3%	3%	2%
ICT	N	55	74	41	72	88	55	35	73	73	63	38	45
	MIN	4 933	1	7 565	1	1	383	8 571	10%	3%	0%	0%	0%
	MAX	42 723 471 048	161 333	6 808 410 000	6 018	4 250	840 000 000	36 736 842	100%	700%	100%	100%	52%
	MEAN	1 477 182 278	2 572	45 765 975	55	42	26 912 891	1 095 868	70%	129%	36%	64%	10%
	MEDIAN	98 343 700	152	750 000	3	3	9 834 370	500 000	80%	100%	25%	75%	0%
	SE	790 850 014	1 405	73 667 358	40	25	12 107 065	423 584	4%	18%	4%	6%	2%
Traditional	N	239	298	177	277	332	239	160	301	281	285	209	221
	MIN	26 646	1	2 500	0	1	3 366	1 336	0%	3%	0%	0%	0%
	MAX	126 000 000 000	120 000	6 866 000 000	13 234	6 918	1 250 000 000	19 963 852	100%	470%	100%	100%	100%
	MEAN	560 516 994	1 740	16 307 893	29	16	44 736 339	751 199	59%	78%	20%	49%	11%
	MEDIAN	29 596 500	194	529 543	5	3	9 456 125	151 298	50%	67%	6%	50%	1%
	SE	210 511 643	360	12 014 142	16	6	6 833 351	114 355	2%	3%	2%	2%	1%
Total	N	451	603	301	520	685	415	287	523	492	505	373	394
	MEAN	847 236 732	2 118	31 688 831	42	30	37 991 274	2 743 560	60%	95%	24%	49%	13%
	MEDIAN	22 694 700	130	756 490	4	4	7 751 464	261 028	60%	80%	10%	50%	3%

Table 68: Main statistics for activities in various sectors – Random group (weighted)

Along with the usual standard statistics from the above tables that can largely be compared with previous reports, this year there is, for the first time, a breakdown of inventive staff in terms of age and gender. The results suggest that the proportion of staff under the age of 40 is higher in ICT than in other mega clusters, and that the proportion of inventive staff that are female is rather low in general but a bit higher in the mega clusters for Inorganic Chemistry and particularly Organic Chemistry.

A histogram of R&D spending for the Biggest group in 2010 is shown in **Figure 18**, for the Random group (unweighted) in **Figure 19**, and for the Random group using extended structural weights in **Figure 20**. Note the lower categories (reduced evenly by one power of ten) for the histogram in **Figure 20**, demonstrating the effect of structurally weighting Random group applicants. Figure 19 is rather similar to its equivalent for 2009 in the previous 2010 survey report.

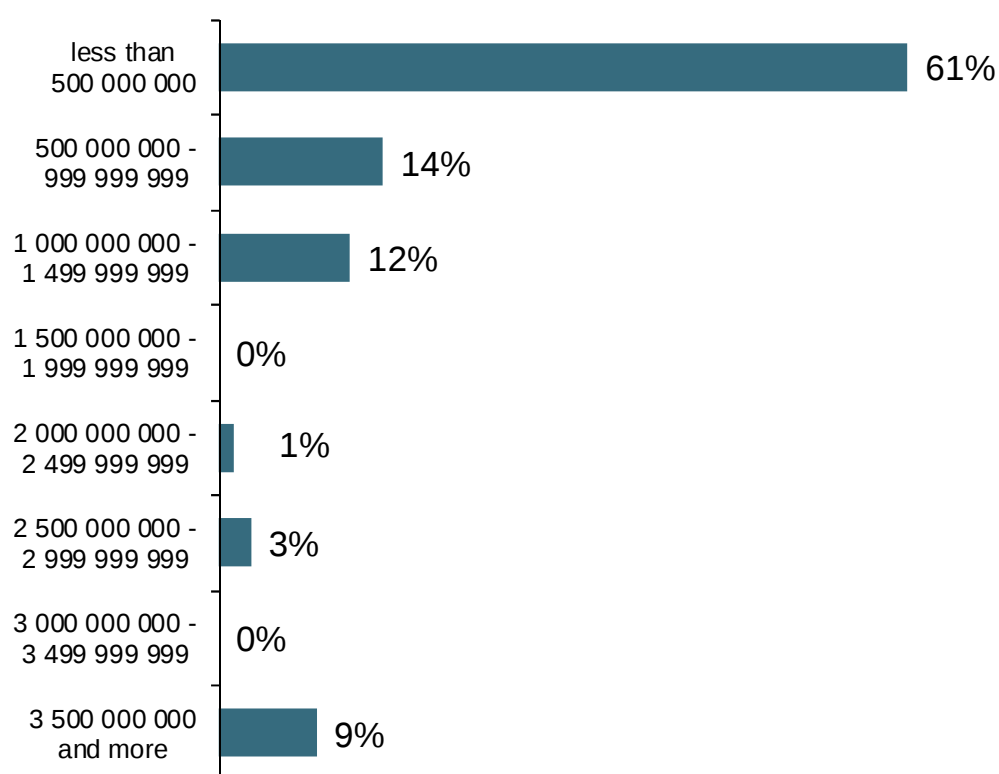


Figure 18: Histogram of annual R&D spending in EUR for Biggest group applicants

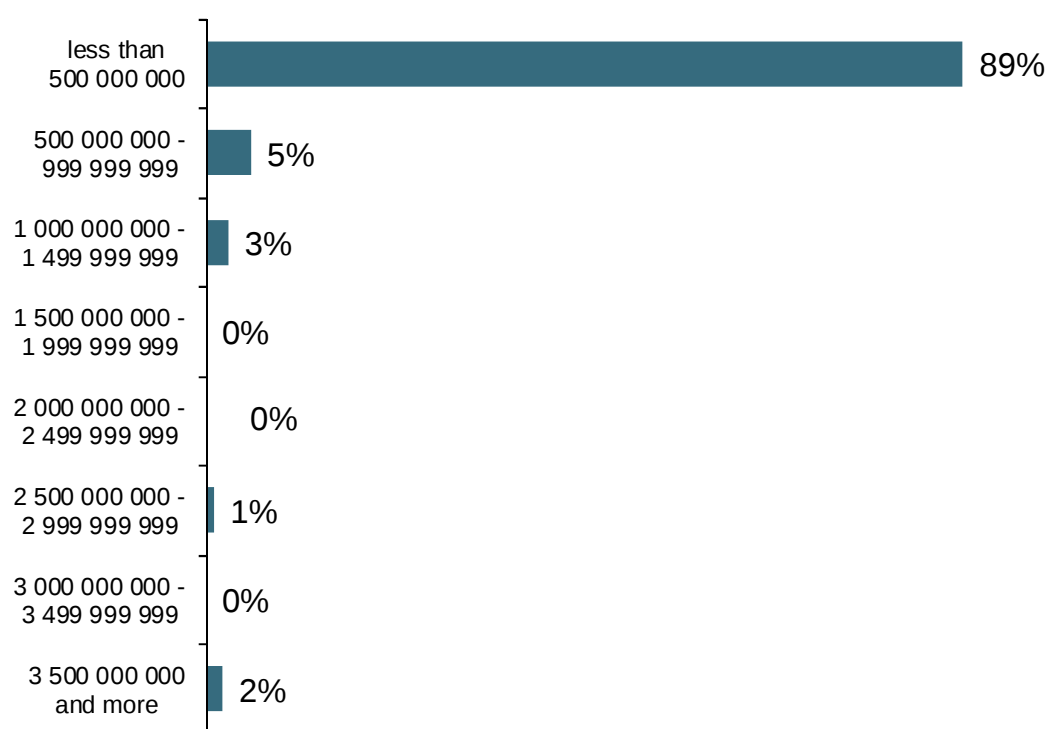


Figure 19: Histogram of annual R&D spending in EUR for Random group applicants (unweighted)

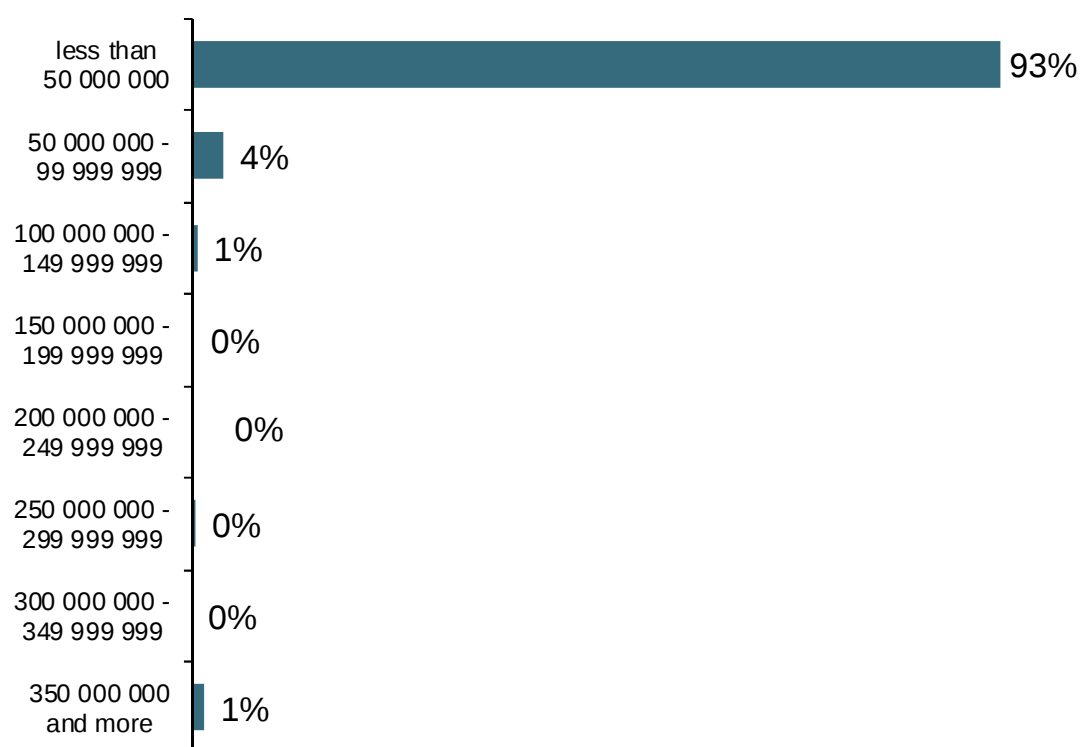


Figure 20: Histogram of annual R&D spending in EUR for Random group applicants (weighted using structural weights)

14 Annex VIII: Additional topics in this year's survey

This year's survey included additional questions on applicant assessments of the introduction of time limits for divisional filings, on the prospective Unitary Patent and on patent portfolios. This annex contains basic tabulations of the results.

14.1 Assessment of the introduction of time limits for divisional filings

The questions in **Part D** of the questionnaire started with the following:

a) *In 2010, a time limit was introduced regarding divisional applications at the EPO that are based on existing applications there. Has this time limit changed your attitude towards making divisional filings?*

b) *What is the proportion of divisional filings (out of your total EPO filings including divisional filings) that you made/will make ...?*

Table 69 to **Table 73** displays the results for questions a) and b).

By sample group

Sample group	Change of attitude towards divisional filings due to introduction of time limits				Proportion of divisional filings out of total EPO filings	
	Valid N	Yes	No	Not relevant	2009 and earlier	2011 and later
Biggest group unweighted	174	49%	38%	13%	7%	8%
Random group unweighted	760	28%	42%	30%	9%	10%
Random group weighted	760	16%	40%	45%	8%	10%

Table 69: Assessment of the introduction of time limits for divisional filings by sample group

Random group
Unweighted

Residence Bloc	Change of attitude towards divisional filings due to introduction of time limits				Proportion of divisional filings out of total EPO filings	
	Valid N	Yes	No	Not relevant	2009 and earlier	2011 and later
EP	496	24%	46%	30%	7%	9%
JP	115	50%	21%	29%	6%	7%
OT	50	15%	46%	38%	11%	15%
US	99	29%	46%	25%	17%	17%
Total	760	28%	42%	30%	9%	10%

Table 70: Assessment of the introduction of time limits for divisional filings broken down by residence bloc – Random group (unweighted)

Random group
Cases weighted with structural weight

Residence Bloc	Change of attitude towards divisional filings due to introduction of time limits				Proportion of divisional filings out of total EPO filings	
	Valid N	Yes	No	Not relevant	2009 and earlier	2011 and later
EP	496	11%	42%	47%	8%	10%
JP	115	36%	21%	43%	2%	2%
OT	50	16%	38%	46%	11%	16%
US	99	15%	47%	37%	15%	17%
Total	760	16%	40%	45%	8%	10%

Table 71: Assessment of the introduction of time limits for divisional filings broken down by residence bloc – Random group (weighted)

Random group
Unweighted

Mega Cluster	Change of attitude towards divisional filings due to introduction of time limits				Proportion of divisional filings out of total EPO filings	
	Valid N	Yes	No	Not relevant	2009 and earlier	2011 and later
Electricity	207	26%	46%	28%	6%	8%
Organic Chemistry	146	41%	42%	17%	10%	14%
Inorganic Chemistry	139	35%	41%	24%	9%	9%
ICT	98	26%	46%	28%	8%	7%
Traditional	369	26%	44%	30%	8%	10%

Table 72: Assessment of the introduction of time limits for divisional filings broken down by mega cluster – Random group (unweighted)

Random group
Cases weighted with structural weight

Mega Cluster	Change of attitude towards divisional filings due to introduction of time limits				Proportion of divisional filings out of total EPO filings	
	Valid N	Yes	No	Not relevant	2009 and earlier	2011 and later
Electricity	207	12%	40%	48%	5%	6%
Organic Chemistry	146	32%	41%	28%	12%	14%
Inorganic Chemistry	139	17%	38%	45%	11%	11%
ICT	98	13%	52%	35%	9%	4%
Traditional	369	13%	46%	41%	11%	15%

Table 73: Assessment of the introduction of time limits for divisional filings broken down by mega cluster – Random group (weighted)

Table 69 suggests that among the big applicants nearly half are changing their attitude towards divisional filings. In the whole population, as represented by the weighted results of the random group, only 16% are changing their attitude however. **Table 71** shows that a relatively large proportion will have a change of attitude in Japan, but this may correlate with the result from the Biggest group in Table 69 because of the high industrial concentration there. For mega clusters, **Table 73** suggests that Organic chemistry is most affected. In terms of the actual proportions of divisional filings to be made, these are only a little higher

for 2011 and later than for the earlier period. Exceptionally, **Table 73** suggests that ICT may go for a lower proportion of divisionals for 2011 and later.

14.2 Assessment of the Unitary Patent

The questions in **Part D** continued with:

c) How would you rate the effects that the following features of the Unitary Patent system will have on your business operations, bearing in mind also the benefits to your competitors?

Table 74 to **Table 78** show the results for question c). The high mean scores for all requested features indicate a perception of positive effects on business operations with the prospective Unitary Patent. **Table 76** suggests that these positive effects exist in all residential blocs, and **Table 77** suggests that they also exist in all mega clusters.

Sample group	Features of unitary patents	Valid N	Bad effect 1	2	No effect 3	4	Good effect 5	Mean score
Biggest group unweighted	Reduction of translation costs at registration	147	3%	1%	10%	29%	56%	4.35
	Possible reduction of total patent attorney costs	146	2%	1%	22%	27%	48%	4.17
	A single renewal fee only to be paid periodically to one agency	147	1%	1%	27%	24%	46%	4.13
	Simultaneous patent coverage for several countries	145	2%	3%	17%	31%	47%	4.18
Random group unweighted	Reduction of translation costs at registration	640	1%	2%	10%	25%	62%	4.44
	Possible reduction of total patent attorney costs	638	1%	2%	16%	28%	53%	4.31
	A single renewal fee only to be paid periodically to one agency	637	0%	1%	16%	26%	56%	4.37
	Simultaneous patent coverage for several countries	639	1%	3%	11%	23%	62%	4.43
Random group weighted	Reduction of translation costs at registration	640	0%	2%	12%	18%	68%	4.52
	Possible reduction of total patent attorney costs	638	0%	0%	14%	26%	59%	4.44
	A single renewal fee only to be paid periodically to one agency	637	0%	1%	14%	24%	62%	4.47
	Simultaneous patent coverage for several countries	639	1%	1%	9%	17%	73%	4.60

Table 74: Assessment of effects of the Unitary Patent by sample group

**Random group
Unweighted**

Residence bloc	Features of unitary patents	Valid N	Bad effect 1	2	No effect 3	4	Good effect 5	Mean score
EP	Reduction of translation costs at registration	416	1%	2%	12%	21%	64%	4.46
	Possible reduction of total patent attorney costs	415	1%	2%	17%	25%	56%	4.33
	A single renewal fee only to be paid periodically to one agency	413	0%	1%	16%	25%	57%	4.38
	Simultaneous patent coverage for several countries	416	1%	2%	11%	20%	66%	4.49
JP	Reduction of translation costs at registration	108	2%	3%	6%	41%	48%	4.31
	Possible reduction of total patent attorney costs	106	2%	2%	14%	47%	35%	4.11
	A single renewal fee only to be paid periodically to one agency	107	1%	1%	17%	36%	45%	4.23
	Simultaneous patent coverage for several countries	107	2%	7%	16%	37%	38%	4.04
OT	Reduction of translation costs at registration	41	0%	2%	5%	24%	68%	4.59
	Possible reduction of total patent attorney costs	41	0%	0%	17%	27%	56%	4.39
	A single renewal fee only to be paid periodically to one agency	41	0%	0%	15%	20%	66%	4.51
	Simultaneous patent coverage for several countries	41	0%	0%	7%	12%	80%	4.73
US	Reduction of translation costs at registration	75	1%	1%	11%	21%	65%	4.48
	Possible reduction of total patent attorney costs	76	0%	1%	16%	20%	63%	4.45
	A single renewal fee only to be paid periodically to one agency	76	0%	1%	13%	24%	62%	4.46
	Simultaneous patent coverage for several countries	75	0%	3%	11%	21%	65%	4.49
Total	Reduction of translation costs at registration	640	1%	2%	10%	25%	62%	4.44
	Possible reduction of total patent attorney costs	638	1%	2%	16%	28%	53%	4.31
	A single renewal fee only to be paid periodically to one agency	637	0%	1%	16%	26%	56%	4.37
	Simultaneous patent coverage for several countries	639	1%	3%	11%	23%	62%	4.43

Table 75: Assessment of effects of the Unitary Patent broken down by residence bloc – Random group (unweighted)

Random group
Cases weighted with structural weight

Residence bloc	Features of unitary patents	Valid N	Bad effect 1	2	No effect 3	4	Good effect 5	Mean score
EP	Reduction of translation costs at registration	416	0%	1%	13%	15%	71%	4.56
	Possible reduction of total patent attorney costs	415	0%	0%	13%	23%	63%	4.49
	A single renewal fee only to be paid periodically to one agency	413	0%	0%	11%	23%	65%	4.53
	Simultaneous patent coverage for several countries	416	1%	1%	6%	16%	76%	4.65
JP	Reduction of translation costs at registration	108	0%	4%	4%	39%	52%	4.39
	Possible reduction of total patent attorney costs	106	0%	3%	7%	54%	35%	4.21
	A single renewal fee only to be paid periodically to one agency	107	0%	3%	12%	43%	41%	4.22
	Simultaneous patent coverage for several countries	107	1%	5%	13%	39%	43%	4.18
OT	Reduction of translation costs at registration	41	0%	4%	9%	20%	67%	4.49
	Possible reduction of total patent attorney costs	41	0%	0%	18%	27%	55%	4.36
	A single renewal fee only to be paid periodically to one agency	41	0%	0%	20%	18%	62%	4.43
	Simultaneous patent coverage for several countries	41	0%	0%	5%	8%	86%	4.81
US	Reduction of translation costs at registration	75	0%	0%	14%	20%	65%	4.48
	Possible reduction of total patent attorney costs	76	0%	0%	15%	24%	60%	4.44
	A single renewal fee only to be paid periodically to one agency	76	0%	0%	16%	27%	57%	4.40
	Simultaneous patent coverage for several countries	75	0%	1%	18%	22%	59%	4.40
Total	Reduction of translation costs at registration	640	0%	2%	12%	18%	68%	4.52
	Possible reduction of total patent attorney costs	638	0%	0%	14%	26%	59%	4.44
	A single renewal fee only to be paid periodically to one agency	637	0%	1%	14%	24%	62%	4.47
	Simultaneous patent coverage for several countries	639	1%	1%	9%	17%	73%	4.60

Table 76: Assessment of effects of the Unitary Patent broken down by residence bloc – Random group (weighted)

**Random group
Unweighted**

Mega Cluster	Features of unitary patents	Valid N	Bad effect 1	2	No effect 3	4	Good effect 5	Mean score
Electricity	Reduction of translation costs at registration	189	1%	3%	11%	28%	59%	4.41
	Possible reduction of total patent attorney costs	187	1%	2%	15%	25%	57%	4.36
	A single renewal fee only to be paid periodically to one agency	188	0%	1%	18%	25%	56%	4.37
	Simultaneous patent coverage for several countries	189	1%	1%	10%	23%	66%	4.51
Organic Chemistry	Reduction of translation costs at registration	136	2%	1%	5%	24%	68%	4.53
	Possible reduction of total patent attorney costs	136	0%	1%	13%	26%	60%	4.43
	A single renewal fee only to be paid periodically to one agency	135	0%	1%	13%	27%	59%	4.45
	Simultaneous patent coverage for several countries	136	1%	5%	13%	19%	62%	4.35
Inorganic Chemistry	Reduction of translation costs at registration	123	2%	1%	7%	31%	59%	4.46
	Possible reduction of total patent attorney costs	123	0%	2%	15%	31%	52%	4.33
	A single renewal fee only to be paid periodically to one agency	122	0%	3%	15%	26%	56%	4.34
	Simultaneous patent coverage for several countries	123	2%	3%	10%	24%	61%	4.40
ICT	Reduction of translation costs at registration	90	1%	2%	11%	34%	51%	4.32
	Possible reduction of total patent attorney costs	88	1%	3%	15%	31%	50%	4.25
	A single renewal fee only to be paid periodically to one agency	88	0%	1%	18%	28%	52%	4.32
	Simultaneous patent coverage for several countries	89	2%	1%	9%	29%	58%	4.40
Traditional	Reduction of translation costs at registration	338	1%	2%	12%	24%	61%	4.43
	Possible reduction of total patent attorney costs	337	1%	2%	17%	29%	51%	4.27
	A single renewal fee only to be paid periodically to one agency	336	1%	1%	16%	27%	56%	4.36
	Simultaneous patent coverage for several countries	338	1%	2%	12%	20%	64%	4.43

Table 77: Assessment of effects of the Unitary Patent broken down by mega cluster – Random group (unweighted)

Random group
Cases weighted with structural weight

Mega Cluster	Features of unitary patents	Valid N	Bad effect 1	2	No effect 3	4	Good effect 5	Mean score
Electricity	Reduction of translation costs at registration	189	0%	1%	14%	25%	60%	4.43
	Possible reduction of total patent attorney costs	187	0%	1%	18%	29%	52%	4.32
	A single renewal fee only to be paid periodically to one agency	188	0%	1%	16%	25%	58%	4.40
	Simultaneous patent coverage for several countries	189	0%	1%	5%	18%	76%	4.69
Organic Chemistry	Reduction of translation costs at registration	136	1%	3%	1%	18%	77%	4.68
	Possible reduction of total patent attorney costs	136	0%	1%	5%	21%	73%	4.67
	A single renewal fee only to be paid periodically to one agency	135	0%	0%	7%	27%	66%	4.58
	Simultaneous patent coverage for several countries	136	1%	1%	11%	14%	73%	4.57
Inorganic Chemistry	Reduction of translation costs at registration	123	1%	1%	18%	20%	60%	4.37
	Possible reduction of total patent attorney costs	123	0%	2%	16%	22%	61%	4.41
	A single renewal fee only to be paid periodically to one agency	122	0%	3%	14%	19%	64%	4.45
	Simultaneous patent coverage for several countries	123	1%	2%	6%	18%	72%	4.58
ICT	Reduction of translation costs at registration	90	0%	0%	14%	26%	60%	4.45
	Possible reduction of total patent attorney costs	88	0%	0%	15%	25%	60%	4.44
	A single renewal fee only to be paid periodically to one agency	88	0%	0%	21%	22%	56%	4.35
	Simultaneous patent coverage for several countries	89	1%	0%	15%	25%	59%	4.41
Traditional	Reduction of translation costs at registration	338	0%	2%	11%	16%	70%	4.54
	Possible reduction of total patent attorney costs	337	0%	1%	13%	27%	59%	4.44
	A single renewal fee only to be paid periodically to one agency	336	0%	0%	12%	24%	64%	4.50
	Simultaneous patent coverage for several countries	338	1%	1%	8%	15%	74%	4.61

Table 78: Assessment of effects of the Unitary Patent broken down by mega cluster – Random group (weighted)

e) *What proportion of your granted EPO patents in 2012 will you register as Unitary Patents under the following three alternative pricing scenarios?*

Table 79 to **Table 83** display the results for question e) of **Section D** of the questionnaire. For this question, it was assumed that, as the cost of the Unitary Patent increases, the proportion of filings should not increase. Thus, respondents who indicated an increasing proportion as the price increases were excluded from the analysis. In total, 46 respondents were excluded for this reason.

Sample group	Proportion of EPO grants in 2012 to register as Unitary patents if cost set at			
	Valid N	6 most commonly validated countries	9 most commonly validated countries	12 most commonly validated countries
Biggest group unweighted	119	62%	26%	16%
Random group unweighted	435	72%	36%	27%
Random group weighted	435	80%	41%	36%

Table 79: Assessment of cost impact on Unitary Patent usage by sample group

**Random group
Unweighted**

Residence Bloc	Proportion of EPO grants in 2012 to register as Unitary patents if cost set at			
	Valid N	6 most commonly validated countries	9 most commonly validated countries	12 most commonly validated countries
EP	272	75%	38%	29%
JP	84	61%	25%	18%
OT	30	75%	41%	35%
US	49	74%	39%	27%
Total	435	72%	36%	27%

Table 80: Assessment of cost impact on Unitary Patent usage broken down by residence bloc – Random group (unweighted)

**Random group
Cases weighted with structural weight**

Residence Bloc	Proportion of EPO grants in 2012 to register as Unitary patents if cost set at			
	Valid N	6 most commonly validated countries	9 most commonly validated countries	12 most commonly validated countries
EP	272	82%	46%	42%
JP	84	71%	26%	20%
OT	30	71%	43%	36%
US	49	84%	40%	31%
Total	435	80%	41%	36%

Table 81: Assessment of cost impact on Unitary Patent usage broken down by residence bloc – Random group (weighted)

**Random group
Unweighted**

Mega Cluster	Proportion of EPO grants in 2012 to register as Unitary patents if cost set at			
	Valid N	6 most commonly validated countries	9 most commonly validated countries	12 most commonly validated countries
Electricity	148	70%	33%	21%
Organic Chemistry	88	74%	43%	34%
Inorganic Chemistry	83	72%	35%	27%
ICT	70	62%	27%	19%
Traditional	231	73%	35%	25%

Table 82: Assessment of cost impact on Unitary Patent usage broken down by mega cluster – Random group (unweighted)

**Random group
Cases weighted with structural weight**

Mega Cluster	Proportion of EPO grants in 2012 to register as Unitary patents if cost set at			
	Valid N	6 most commonly validated countries	9 most commonly validated countries	12 most commonly validated countries
Electricity	148	76%	37%	28%
Organic Chemistry	88	85%	50%	40%
Inorganic Chemistry	83	78%	33%	36%
ICT	70	80%	35%	29%
Traditional	231	80%	42%	34%

Table 83: Assessment of cost impact on Unitary Patent usage broken down by mega cluster – Random group (weighted)

Table 81 suggests that EP applicants may have a higher take up of the Unitary Patent than applicants from other blocs at the two higher cost alternatives (nine and 12 validated countries). Japan and US report the highest drops in percentage for a cost shift from that of six validated countries to that of 12 validated countries. In terms of mega clusters, **Table 83** suggests that Organic Chemistry would have the highest take up rate at all three cost levels.

14.3 Information about patent portfolios

The questions in **Part E** of this year's survey that related to patent portfolios were:

- c) *How many patents do you currently have in your patent portfolio?*
- e) *What proportion of patents in your current portfolio have you bought from external sources?*
- f) *How many patents that you have applied for within the past 20 years are no longer in your portfolio because you sold them?*
- g) *How long do you keep an average/typical patent in your portfolio?*

- h) How long do you keep an average/typical European patent in your portfolio?*
i) What do you think: will the Unitary Patent increase or decrease the number of patents in your portfolio if all other factors remain the same?

Table 84 to **Table 88** displays the results for questions c) and e) to i) of **Section E** of this year's questionnaire (**Annex I**).

Residence Bloc	Number of patents currently in patent portfolio		Proportion of patents in current portfolio bought from external sources		Patents applied for in last 20 years, but sold since		Proportion of patents applied for in last 20 years, but sold since		Duration of a patent in patent portfolio (years)		Duration of an EPO patent in patent portfolio (years)		Effect of unitary patent on patent portfolio			
	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Increase	Decrease	No effect
Biggest group unweighted	108	8 582	79	4%	76	1 745	72	7%	102	12.1	102	12.4	391	24%	9%	67%
Random group unweighted	576	2 144	517	5%	477	325	459	13%	480	13.8	461	13.7	580	26%	9%	66%
Random group weighted	576	350	517	6%	477	29	459	27%	480	14.8	461	13.9	580	31%	5%	63%

Table 84: Information about patent portfolios by sample group

**Random group
Unweighted**

Residence Bloc	Number of patents currently in patent portfolio		Proportion of patents in current portfolio bought from external sources		Patents applied for in last 20 years, but sold since		Proportion of patents applied for in last 20 years, but sold since		Duration of a patent in patent portfolio (years)		Duration of an EPO patent in patent portfolio (years)		Effect of unitary patent on patent portfolio			
	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Increase	Decrease	No effect
EP	394	1 403	360	5%	329	389	319	17%	324	13.3	314	13.5	391	24%	9%	67%
JP	74	5 500	57	2%	53	89	51	7%	63	12.5	64	12.7	83	22%	5%	73%
OT	37	228	35	4%	33	22	31	3%	35	14.6	29	14.4	37	43%	5%	51%
US	71	3 754	65	4%	62	352	58	6%	58	17.8	54	15.9	69	28%	17%	55%
Total	576	2 144	517	5%	477	325	459	13%	480	13.8	461	13.7	580	26%	9%	66%

Table 85: Information about patent portfolios broken down by residence bloc – Random group (unweighted)

**Random group
Cases weighted with structural weight**

Residence Bloc	Number of patents currently in patent portfolio		Proportion of patents in current portfolio bought from external sources		Patents applied for in last 20 years, but sold since		Proportion of patents applied for in last 20 years, but sold since		Duration of a patent in patent portfolio (years)		Duration of an EPO patent in patent portfolio (years)		Effect of unitary patent on patent portfolio			
	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Increase	Decrease	No effect
EP	394	163	360	7%	329	24	319	37%	324	14.2	314	14.1	391	27%	4%	69%
JP	74	1 080	57	2%	53	57	51	8%	63	12.7	64	11.9	83	9%	1%	90%
OT	37	89	35	3%	33	5	31	1%	35	15.8	29	14.0	37	55%	6%	39%
US	71	762	65	3%	62	46	58	5%	58	19.2	54	14.9	69	28%	9%	63%
Total	576	350	517	6%	477	29	459	27%	480	14.8	461	13.9	580	31%	5%	63%

Table 86: Information about patent portfolios broken down by residence bloc – Random group (weighted)

Random group
Unweighted

Mega Cluster	Number of patents currently in patent portfolio		Proportion of patents in current portfolio bought from external sources		Patents applied for in last 20 years, but sold since		Proportion of patents applied for in last 20 years, but sold since		Duration of a patent in patent portfolio (years)		Duration of an EPO patent in patent portfolio (years)		Effect of unitary patent on patent portfolio			
	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Increase	Decrease	No effect
Electricity	167	3 213	151	4%	137	707	129	5%	146	13.3	141	13.3	172	25%	9%	66%
Organic Chemistry	119	3 399	104	6%	91	1 420	88	6%	90	13.5	84	13.3	125	27%	9%	64%
Inorganic Chemistry	110	2 676	97	5%	84	493	81	8%	95	13.4	92	13.5	113	24%	12%	64%
ICT	79	3 873	71	5%	62	69	61	3%	65	14.1	64	12.3	80	24%	10%	66%
Traditional	311	2 203	281	4%	259	503	250	22%	274	13.7	263	13.8	315	25%	9%	66%

Table 87: Information about patent portfolios broken down by mega cluster – Random group (unweighted)

Random group
Cases weighted with structural weight

Mega Cluster	Number of patents currently in patent portfolio		Proportion of patents in current portfolio bought from external sources		Patents applied for in last 20 years, but sold since		Proportion of patents applied for in last 20 years, but sold since		Duration of a patent in patent portfolio (years)		Duration of an EPO patent in patent portfolio (years)		Effect of unitary patent on patent portfolio			
	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Mean	Valid N	Increase	Decrease	No effect
Electricity	167	604	151	3%	137	48	129	2%	146	15.5	141	14.7	172	27%	6%	67%
Organic Chemistry	119	641	104	4%	91	81	88	1%	90	13.3	84	13.5	125	42%	8%	50%
Inorganic Chemistry	110	884	97	8%	84	45	81	3%	95	15.0	92	14.3	113	21%	8%	71%
ICT	79	472	71	11%	62	18	61	3%	65	20.8	64	12.6	80	26%	14%	61%
Traditional	311	335	281	5%	259	28	250	38%	274	15.1	263	14.4	315	33%	6%	62%

Table 88: Information about patent portfolios broken down by mega cluster – Random group (weighted)

Table 86 suggests that EPC-based applicants buy in and sell more patents for their portfolio than in other blocs, that US-based applicants keep EPO patents in their portfolios longer than residents of other blocs do, and that Others and US applicants in particular may increase their patent portfolio sizes in case of the advent of a Unitary Patent. **Table 88** suggests that, in terms of mega clusters, ICT buys in the highest proportion of patents and does not sell such a high proportion as the other mega clusters do. Organic chemistry reports the highest net increase of patent portfolio size with the Unitary Patent. The duration of patents in the portfolio is apparently longest for ICT in terms of patents in general, but paradoxically shortest for ICT in terms of European patents. The overall mean duration of EPO patents in the portfolio is 13.9 years, with not much difference between blocs. This estimate compares to a median duration from filing to grant of only about eight years in the Four Office Statistics Report 2010 (see reference in footnote 23). A possible reason for a longer duration here is that a granted European patent is kept in

the portfolio until it is dropped in the last national office for which it was originally designated. On the other hand, the median statistic in the Four Office Statistics Report reflects averages of the proportions of countries in which the patent is still maintained based on the countries in which it was designated at the time of grant.

d) *“What proportion of patents in your current portfolio are used for ... ?”*

Table 89 to Table 93 displays the answers for question d).

Residence bloc	Usage	Valid N	Mean proportion of total portfolio
Biggest group unweighted	Protecting products	85	68%
	Licensing out	72	17%
	Enhancing reputation	76	35%
	Setting standards	59	8%
Random group unweighted	Protecting products	507	77%
	Licensing out	357	25%
	Enhancing reputation	332	34%
	Setting standards	244	9%
Random group weighted	Protecting products	507	82%
	Licensing out	357	30%
	Enhancing reputation	332	42%
	Setting standards	244	8%

Table 89: Patent portfolio usage by sample group

Residence bloc	Usage	Valid N	Mean proportion of total portfolio
EP	Protecting products	347	77%
	Licensing out	240	26%
	Enhancing reputation	222	37%
	Setting standards	158	9%
JP	Protecting products	60	77%
	Licensing out	45	11%
	Enhancing reputation	43	15%
	Setting standards	36	2%
OT	Protecting products	35	75%
	Licensing out	26	28%
	Enhancing reputation	29	34%
	Setting standards	18	8%
US	Protecting products	65	81%
	Licensing out	46	26%
	Enhancing reputation	38	41%
	Setting standards	32	16%
Total	Protecting products	507	77%
	Licensing out	357	25%
	Enhancing reputation	332	34%
	Setting standards	244	9%

Table 90: Patent portfolio usage broken down by residence bloc – Random group (unweighted)

Residence bloc	Usage	Valid N	Mean proportion of total portfolio
EP	Protecting products	347	82%
	Licensing out	240	35%
	Enhancing reputation	222	47%
	Setting standards	158	8%
JP	Protecting products	60	80%
	Licensing out	45	9%
	Enhancing reputation	43	22%
	Setting standards	36	2%
OT	Protecting products	35	75%
	Licensing out	26	19%
	Enhancing reputation	29	45%
	Setting standards	18	10%
US	Protecting products	65	86%
	Licensing out	46	27%
	Enhancing reputation	38	38%
	Setting standards	32	16%
Total	Protecting products	507	82%
	Licensing out	357	30%
	Enhancing reputation	332	42%
	Setting standards	244	8%

Table 91: Patent portfolio usage broken down by residence bloc – Random group (weighted)

Mega Cluster	Usage	Valid N	Mean proportion of total portfolio
Electricity	Protecting products	150	73%
	Licensing out	109	26%
	Enhancing reputation	113	33%
	Setting standards	82	8%
Organic Chemistry	Protecting products	96	71%
	Licensing out	86	42%
	Enhancing reputation	66	33%
	Setting standards	49	11%
Inorganic Chemistry	Protecting products	93	71%
	Licensing out	79	35%
	Enhancing reputation	70	35%
	Setting standards	53	7%
ICT	Protecting products	65	68%
	Licensing out	53	36%
	Enhancing reputation	50	37%
	Setting standards	40	8%
Traditional	Protecting products	290	78%
	Licensing out	195	20%
	Enhancing reputation	181	34%
	Setting standards	131	9%

Table 92: Patent portfolio usage broken down by mega cluster – Random group (unweighted)

Mega Cluster	Usage	Valid N	Mean proportion of total portfolio
Electricity	Protecting products	150	77%
	Licensing out	109	23%
	Enhancing reputation	113	34%
	Setting standards	82	10%
Organic Chemistry	Protecting products	96	78%
	Licensing out	86	48%
	Enhancing reputation	66	48%
	Setting standards	49	16%
Inorganic Chemistry	Protecting products	93	80%
	Licensing out	79	38%
	Enhancing reputation	70	37%
	Setting standards	53	6%
ICT	Protecting products	65	73%
	Licensing out	53	34%
	Enhancing reputation	50	38%
	Setting standards	40	7%
Traditional	Protecting products	290	83%
	Licensing out	195	25%
	Enhancing reputation	181	49%
	Setting standards	131	9%

Table 93: Patent portfolio usage broken down by mega cluster – Random group (weighted)

Table 89 shows that, overall, protecting products is by far the most important factor for usage of patents within the patent portfolio, followed by enhancing reputation and then licensing out, while setting standards is relatively unimportant. **Table 91** suggests that these findings are common across blocs, with the proportion used for licensing out being lowest at 9% in Japan. For mega clusters on the other hand, **Table 93** suggests that the proportion used for licensing out is conspicuously high at 48% for Organic Chemistry.

15 Annex IX: Estimating birth & death effects in the applicant population

A method that is used to calculate correction factors to take account of birth and death effects in the applicant population was explained in Annex VIII of the 2007 survey report (with a revision in Annex X of the 2008 survey report). As last year, Euro-direct applications that can be identified as divisionals were excluded from the counts.

The calculation is shown for Total filings (ED + Euro-PCT-RP). The following table describes the carryover of all applicants (filers) for Total filings from each year to all others considered in the period.²⁹

Recurrent applicants (excluding divisionals) for		Total filings (Euro-direct + Euro-PCT-RP)								
		Also filed in								
		2002	2003	2004	2005	2006	2007	2008	2009	2010
Filers in	2002	<u>30 770</u>	10 118	9 298	8 374	7 653	7 052	6 436	5 421	4 820
	2003	10 118	<u>31 801</u>	10 911	9 771	9 022	8 237	7 462	6 360	5 549
	2004	9 298	8 374	<u>32 529</u>	11 200	10 402	9 454	8 527	7 083	6 276
	2005	8 374	9 771	11 200	<u>32 849</u>	11 617	10 720	9 635	8 033	6 894
	2006	7 653	9 022	10 402	11 617	<u>33 908</u>	12 316	11 107	9 177	7 763
	2007	7 052	8 237	9 454	10 720	12 316	<u>35 366</u>	12 800	10 524	9 119
	2008	6 436	7 462	8 527	9 635	11 107	12 800	<u>36 357</u>	12 303	10 532
	2009	5 421	6 360	7 083	8 033	9 177	10 524	12 303	<u>34 357</u>	11 907
	2010	4 820	5 549	6 276	6 894	7 763	9 119	10 532	11 907	<u>34 642</u>

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

Recurrent applications (excluding divisionals)		Total filings (Euro-direct + Euro-PCT-RP)								
		Also filed in								
		2002	2003	2004	2005	2006	2007	2008	2009	2010
Filings in	2002	<u>102 507</u>	76 341	73 336	69 947	66 525	63 269	60 443	53 538	49 031
	2003	83 190	<u>111 675</u>	85 006	81 264	77 959	74 602	71 007	63 525	58 136
	2004	84 874	89 681	<u>117 927</u>	90 605	87 509	83 802	80 033	72 055	65 788
	2005	84 154	89 242	93 776	<u>122 135</u>	94 882	91 458	87 587	79 463	72 000
	2006	81 629	87 730	92 694	97 778	<u>127 861</u>	99 884	95 911	87 045	77 851
	2007	78 228	83 594	88 826	94 558	101 840	<u>132 774</u>	103 351	94 634	85 876
	2008	74 477	79 742	85 173	90 488	97 678	104 964	<u>137 683</u>	104 049	96 850
	2009	59 923	64 548	69 709	74 740	81 394	88 319	96 324	<u>126 966</u>	96 417
	2010	53 212	58 678	62 941	68 813	73 631	80 759	88 928	96 375	<u>128 660</u>

The following table shows the numbers of applications (filings) that did not carry over between years.

²⁹ The data in this section were extracted from the database as at the time of sampling for the survey in March 2011. It should be noted that the number of applicants in 2010, 34 642, is slightly lower than the corresponding number including divisionals, 35 722, that is given in Annex XI.

Non recurrent applications (excluding divisionals) Total filings (Euro-direct + Euro-PCT-RP)

		Did not file in								
		2002	2003	2004	2005	2006	2007	2008	2009	2010
Filings in	2002	0	26 166	29 171	32 560	35 982	39 238	42 064	48 969	53 476
	2003	28 485	0	26 669	30 411	33 716	37 073	40 668	48 150	53 539
	2004	33 053	28 246	0	27 322	30 418	34 125	37 894	45 872	52 139
	2005	37 981	32 893	28 359	0	27 253	30 677	34 548	42 672	50 135
	2006	46 232	40 131	35 167	30 083	0	27 977	31 950	40 816	50 010
	2007	54 546	49 180	43 948	38 216	30 934	0	29 423	38 140	46 898
	2008	63 206	57 941	52 510	47 195	40 005	32 719	0	33 634	40 833
	2009	67 043	62 418	57 257	52 226	45 572	38 647	30 642	0	30 549
	2010	75 448	69 982	65 719	59 847	55 029	47 901	39 732	32 285	0

The modified correction factor (CF') for a future year is given as

CF' = (# applications year i+j from applicants that did not file in year i) -

((# applications year i from applicants that did not file in year i+j) x

((# applications in year i+j in population)/(# applications in year i in population))

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 CF's should be used retrospectively. The most recently available one-year ahead CF' is taken as the one-year CF' for future projection, the most recently available two-year ahead CF' is taken as the two-year CF' for future projection, etc. The resulting set of correction factors is collected in the following table (which tracks data back to Survey Year 2001, where available).

Correction factors

Survey Year	Base Year	Correction factors for Total filings (Euro-direct+Euro-PCT-RP)		
		Survey Year	Survey Year + 1	Survey Year + 2
2001	2000	257		
2002	2001	414	557	
2003	2002	375	275	334
2004	2003	-21	-390	-83
2005	2004	84	-506	-1 146
2006	2005	768	-366	-814
2007	2006	1 552	3 459	1 528
2008	2007	1 882	4 867	6 847
2009	2008	2 208	5 601	8 249
2010	2009	-374	2 175	5 042
2011	2010	1 328	2 456	4 706

It should be noted that this table differs to some extent from the analogous table that was presented in Annex VIII of the 2010 survey report. This is because a new numerical variable called CLIENT_ID was used to represent the applicant entities that included some

combinations of names that had slight differences but were apparently from the same clients (i.e. partial name cleaning was done). This had an effect to increase the numbers of recurrent applicants and recurrent applications between years, as shown above.

It must be recognised that the method described for creating correction factors depends on taking historical developments as a way to project into the future. In 2009, there was a disturbance in the system in that numbers of filings were reduced when compared to 2008, unlike the earlier series of years in which continuous growth was experienced. The only previous year in recent history where filings declined was 2002 compared to 2001.

The following table calculates forward correction factors as experienced beyond base years due to the subsequent out-turns. Data is missing on this for the most recent surveys. Since the out-turns already take account of the growth of the overall numbers of applications in the population, the forward correction factors CF_{forward} are calculated without the population growth term that appeared at the end of the previous formula.

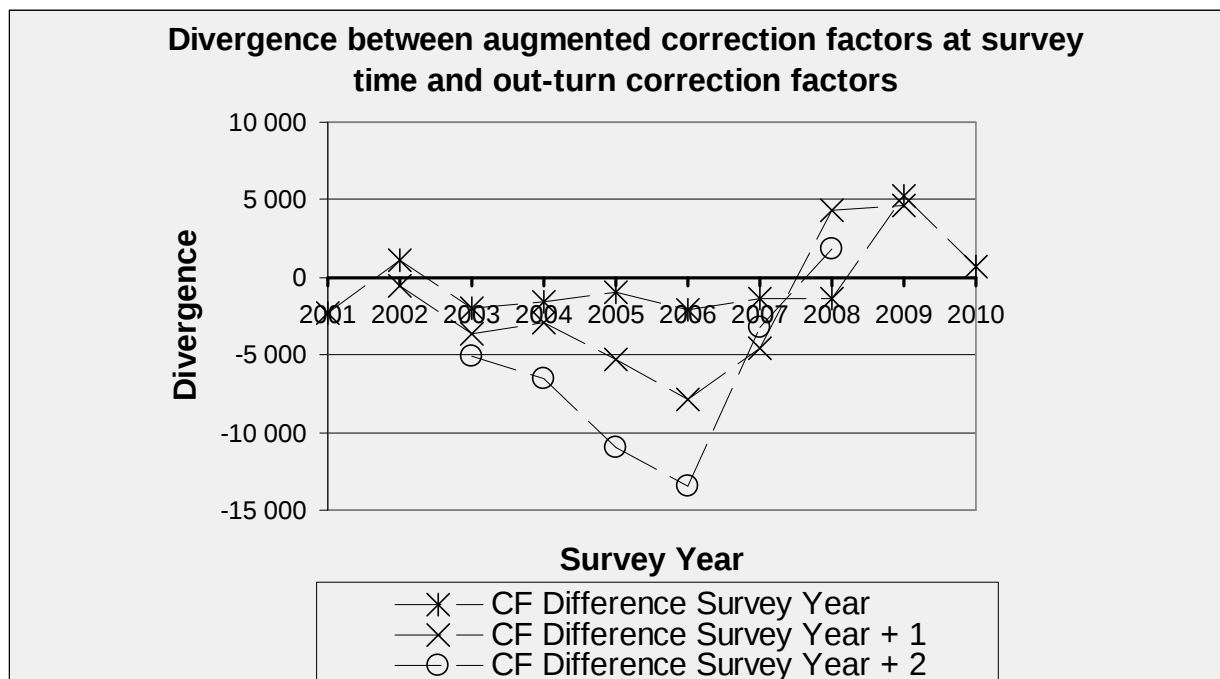
$$CF_{\text{forward}} = \frac{(\# \text{ applications year } i+j \text{ from applicants that did not file in year } i)}{(\# \text{ applications year } i \text{ from applicants that did not file in year } i+j)}$$

(# applications year i from applicants that did not file in year i+j)

Out-turn correction factors

Survey Year	Base Year	Forward correction factors for Total filings (Euro-direct+Euro-PCT-RP)		
		Survey Year	Survey Year + 1	Survey Year + 2
2001	2000	2 594	1 611	4 280
2002	2001	-654	1 096	2 453
2003	2002	2 319	3 882	5 421
2004	2003	1 577	2 482	6 415
2005	2004	1 037	4 749	9 823
2006	2005	2 830	7 539	12 647
2007	2006	2 957	8 055	4 756
2008	2007	3 296	507	5 019
2009	2008	-2 992	1 003	NA
2010	2009	-1 101	NA	NA
2011	2010	NA	NA	NA

The following graph shows the deviations between the correction factors CF' given earlier and the forward correction factors CF_{forward} as seen later in the out-turns.



Generally speaking, the divergences are negative. This means that the correction factors underestimated the balance of applications coming from new applicants compared to the drop-out of old applicants. The correction factors for the survey year seem to be fairly accurate and the only real mark of the downturns in 2002 and 2009 is the positive values for the survey year divergences.

The survey year + 1 divergence was a little out at about -8 000 in 2006 but then swung back to almost zero in 2008. The survey year + 2 divergence gives larger underestimates, down to -13 000 in 2006 (a period of renewed rapid growth), swinging back from 2008 onwards due to the recent downturn. However, it can be noted that the magnitude of the divergences has been reduced in the current analysis compared to those that were reported last year, presumably due to the amalgamation of some equivalent applicants with slight name variations by the partial cleaning involved in constructing the CLIENT_ID variable.

However, this year's graph supports the same general conclusion that was reached in Annexes VIII of the 2009 and 2010 survey reports. The Survey year correction factor can be used with confidence even though the recent severe downturn led to a positive divergence of about 5 000 in 2009. The survey year + 2 correction factor can show a large divergence that may indicate a lack of precision in forecasting ability from the survey two years ahead in general. The survey year + 1 correction factor can be used with more confidence but is also liable to swings. However, all correction factors may be usable at this time because the system seems to be recovering from a downturn, in a roughly comparable fashion to what previously happened in the 2004 survey year. This suggests:

adding 1 328 to the recommended forecast for 2011 to give $(226\,027 + 1\,328 =) 227\,355$;
 adding 2 456 to the recommended forecast for 2012 to give $(239\,711 + 2\,456 =) 242\,167$;
 adding 4 706 to the recommended forecast for 2013 to give $(249\,925 + 4\,706 =) 254\,631$.

16 Annex X: Experimental analysis of the Random group using respondent-based weights

This Annex is an update of Annex XI of the 2009 report and Annex IX of the 2010 survey report, and concerns analogous forecasting results for Total filings that are obtained when basing the weighting scheme on respondent-supplied filing totals, rather than filing totals obtained from the EPO database.

Here the reported base year filings total by the respondent is substituted for the previously used database count in the term A_i (see Section 9.1). A full set of analogous response tables for the Random group analyses was generated and **Table 94** (compare with **Table 1**) and **Table 95** (compare with **Table 2**) show the summary results for these forecast methods using respondent-based Poisson weights.

Comparison of forecasts: Growth from 2010
Euro-direct and PCT-IP

Qualifying comments	Group	Breakdown	Year					
			2011		2012		2013	
			Growth rate	Deviation*	Growth rate	Deviation*	Growth rate	Deviation*
Included	Biggest	None	3.1%		8.7%		13.7%	
Included	Biggest	Residence bloc	3.8%		8.9%		13.4%	
Included	Random	None	0.7%	3.7%	6.5%	3.9%	9.9%	4.4%
Included	Random	None (winsorized)	1.0%	3.2%	6.9%	3.3%	10.6%	3.8%
Included	Random	None (Euro-direct and PCT-IP filings combined)	-1.7%	4.3%	4.2%	4.3%	7.6%	4.8%
Included	Random	Residence bloc	3.5%	6.4%	10.0%	8.5%	14.8%	9.7%
Included	Random	Residence bloc (winsorized)	2.5%	5.0%	7.8%	5.7%	12.2%	6.2%
Included	Random	Residence bloc (ED and PCT-IP filings combined)	-0.2%	7.6%	7.3%	9.4%	12.6%	10.9%
Excluded	Biggest	None	3.1%		8.7%		13.8%	
Excluded	Biggest	Residence bloc	3.7%		8.9%		13.4%	
Excluded	Random	None	-0.6%	3.8%	5.2%	4.0%	8.5%	4.5%
Excluded	Random	None (Euro-direct and PCT-IP filings combined)	-2.3%	4.4%	3.3%	4.4%	6.6%	5.0%
Excluded	Random	Residence bloc	-0.4%	4.5%	4.4%	4.9%	8.3%	5.1%
Excluded	Random	Residence bloc (ED and PCT-IP filings combined)	-2.7%	7.2%	2.5%	7.2%	7.1%	8.6%

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

Table 94: Predicted growth rates for Euro-direct and PCT-IP filings by forecasting method using respondent-based Poisson weights

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

Qualifying comments			Year									
			2011				2012			2013		
			Predicted filings	LCL	UCL	RMSEF*	Predicted filings	LCL	UCL	Predicted filings	LCL	UCL
Included	Biggest	None	221 120				233 136			243 874		
Included	Biggest	Residence bloc	222 561				233 619			243 239		
Included	Random	None	215 863	207 842	223 884	16 239	228 366	219 409	237 323	235 598	225 319	245 877
Included	Random	None (winsorized)	216 602	209 594	223 609	15 397	229 288	221 632	236 944	237 166	228 074	246 258
Included	Random	None (Euro-direct and PCT-IP filings combined)	210 828	201 854	219 803	21 249	223 534	214 029	233 039	230 825	219 644	242 006
Included	Random	Residence bloc	221 953	207 796	236 110	12 034	235 770	215 673	255 867	246 117	222 334	269 899
Included	Random	Residence bloc (winsorized)	219 826	208 786	230 865	13 032	231 092	217 975	244 210	240 687	225 792	255 583
Included	Random	Residence bloc (ED and PCT-IP filings combined)	214 073	197 871	230 274	19 359	230 177	208 502	251 852	241 407	215 155	267 659
Excluded	Biggest	None	221 014				233 169			244 102		
Excluded	Biggest	Residence bloc	222 319				233 522			243 270		
Excluded	Random	None	213 185	205 120	221 251	18 847	225 611	216 625	234 597	232 554	222 199	242 908
Excluded	Random	None (Euro-direct and PCT-IP filings combined)	209 396	200 097	218 696	22 683	221 510	211 742	231 279	228 561	217 051	240 071
Excluded	Random	Residence bloc	213 574	203 972	223 176	18 658	223 959	213 056	234 863	232 256	220 413	244 099
Excluded	Random	Residence bloc (ED and PCT-IP filings combined)	208 665	193 742	223 589	24 144	219 880	203 948	235 812	229 707	209 921	249 494
Actual Filings			231 578									

*) RMSEF: Root mean squared error of forecast

Table 95: Predicted total numbers of Euro-direct and PCT-IP filings by forecasting method using respondent-based Poisson weights

In terms of the preferred estimation method this year, **Table 96** depicts the forecast using respondent-based Poisson weights (see **Table 14** for comparison).

Random group (including critical comments)
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

			2010				2011				Year				2012				2013			
Filing type	Filing route	Res. bloc	Actual filings	Cases 11	Q-index 11	S.E. 11	Predicted filings	Actual filings	Cases 12	Q-index 12	S.E. 12	Predicted filings	Cases 13	Q-index 13	S.E. 13	Predicted filings						
First	Euro-direct	EP	16 933	163	1.0302	0.0241	17 444	18 146	160	1.0649	0.0383	18 032	156	1.0638	0.0586	18 014						
		JP	188	8	1.6953	0.1423	319	238	8	1.8413	0.1365	346	8	2.0001	0.1585	376						
		OT	997	6	1.3038	0.1308	1 300	931	6	1.6286	0.1253	1 624	6	1.9490	0.1674	1 943						
		US	952	14	1.1930	0.0817	1 136	950	12	1.1489	0.0539	1 094	12	1.1694	0.0571	1 113						
		Total	19 070	191			20 199	20 265	186			21 095	182			21 446						
		LCL					19 283					19 674				19 266						
First	Euro-PCT-IP	EP	1 549	77	1.0502	0.0679	1 627	1 574	75	1.1190	0.0756	1 733	69	1.2363	0.0837	1 915						
		JP	1 734	19	1.2318	0.1002	2 136	2 173	19	1.2683	0.1065	2 200	19	1.2776	0.1080	2 216						
		OT	970	8	1.1566	0.0516	1 122	1 102	9	1.2743	0.0699	1 236	8	1.4434	0.0935	1 400						
		US	563	20	1.2965	0.1917	730	593	20	1.2380	0.1460	697	19	1.3324	0.1227	750						
		Total	4 816	124			5 615	5 442	123			5 866	115			6 281						
		LCL					5 051					5 274				5 630						
Subsequent	Euro-direct	EP	15 474	177	0.8927	0.0540	13 814	15 214	169	1.0387	0.0443	16 073	164	1.0425	0.0406	16 131						
		JP	6 082	51	1.0125	0.0355	6 158	6 522	50	1.0475	0.0375	6 371	50	1.0533	0.0404	6 406						
		OT	4 262	13	0.9987	0.0771	4 256	4 640	14	1.1484	0.0940	4 894	15	1.2786	0.1058	5 449						
		US	5 254	31	0.9715	0.0947	5 104	5 221	31	1.0273	0.0813	5 397	32	1.0598	0.0829	5 568						
		Total	31 072	272			29 333	31 597	264			32 736	261			33 555						
		LCL					27 421					30 800				31 546						
Subsequent	Euro-PCT-IP	EP	52 388	215	0.9990	0.0251	52 334	53 246	212	1.0567	0.0267	55 359	207	1.1004	0.0319	57 650						
		JP	30 415	71	1.0761	0.0311	32 731	38 113	70	1.1201	0.0321	34 068	70	1.1536	0.0342	35 087						
		OT	32 245	11	1.1231	0.1118	36 213	36 161	11	1.1480	0.1422	37 019	11	1.2200	0.1526	39 339						
		US	44 424	39	0.9770	0.0761	43 402	46 754	41	1.0118	0.0743	44 950	41	1.0654	0.0765	47 330						
		Total	159 472	336			164 679	174 274	334			171 396	329			179 406						
		LCL					153 860					158 514				164 822						
All	Euro-direct	EP	32 407				31 258	33 360				34 105				34 145						
		JP	6 270				6 476	6 760				6 717				6 782						
		OT	5 259				5 556	5 571				6 518				7 292						
		US	6 206				6 240	6 171				6 491				6 681						
		Total	50 142				49 531	51 862				53 831				55 001						
		LCL					47 412					51 430				52 036						
All	Euro-PCT-IP	EP	53 937				53 961					57 092				59 565						
		JP	32 149				34 867					36 268				37 303						
		OT	33 215				37 335					38 255				40 739						
		US	44 987				44 132					45 647				48 080						
		Total	164 288				170 294	179 716				177 261				185 687						
		LCL					159 460					164 366				171 089						
Grand total	Total	EP	86 344				85 219					91 197				93 710						
		JP	38 419				41 344					42 985				44 085						
		OT	38 474				42 891					44 773				48 132						
		US	51 193				50 372					52 138				54 761						
		Total	214 430				219 826	231 578				231 092				240 687						
		LCL					208 786					217 975				225 792						
Growth from 2010							2.5%	8.0%					7.8%			12.2%						
Implied Euro-PCT-IP							77.5%	77.6%					76.7%			77.1%						
Deviation in % of forecast							5.0%						5.7%			6.2%						

Table 96: Forecasts for EPO filings – Random group broken down by residence bloc and employing winsorisation using respondent-based Poisson weights

The results obtained when employing respondent-based weights essentially support the main forecasting results obtained using database weights. However, the forecasts based on respondent-based weights and employing a residence bloc breakdown are slightly less optimistic than those obtained using the standard weighting procedure. Also, as in the previous two years, forecasts using respondent-based Poisson weights give deviations that are somewhat lower than with the traditional method. However, in terms of RMSEF, comparison of Table 2 with Table 94 shows that forecasts employing database weights this year mainly outperform those using respondent-based weights.

Since the analysis using respondent-based weights gives a slightly different perspective to the standard approach, it is useful to do this calculation each year as a control check on the results with database weights that were discussed in the main part of this report.

17 Annex XI: Sizes of Populations and Samples for the 2011 EPO Patent Filings Survey

	Euro-applications in 2010 ^{\$}					Euro-applicants in 2010 ^{\$}				
	Euro-Direct	PCT IP [#]	Total (Euro-Direct + PCT IP [#])	Euro-PCT-RP	Total (Euro-Direct + Euro-PCT-RP)	Euro-Direct	PCT IP [#]	Total (Euro-Direct + PCT IP [#])	Euro-PCT-RP	Total (Euro-Direct + Euro-PCT-RP) ["]
1. Population in 2010*	71 408	164 307	235 715	79 689	151 097					35 722
Sample group A: Biggest										
2. Number asked* as percentage of 1.	30 330 42.5%	26 267 16.0%	56 597 24.0%	32 913 41.3%	63 243 41.9%	418	386	426	407	428 1.2%
Number of quantitative responses (questionnaires) as percentage of 1. as percentage of 2.	14 840 48.9%	27 977 106.5%	42 817 75.7%	16 964 51.5%	31 804 50.3%	143 34.2%	156 40.4%	161 37.8%	142 34.9%	163 0.5% 38.1%
Sample group B: Random										
3. Number asked* as percentage of 1.	37 127 52.0%	32 008 19.5%	69 135 29.3%	40 426 50.7%	77 523 51.3%	1 711	1 256	2 028	2 051	2 671 7.5%
Number of quantitative responses (questionnaires) as percentage of 1. as percentage of 3.	19 040 26.7% 51.3%	33 946 20.7% 106.1%	52 986 22.5% 76.6%	20 083 25.2% 49.7%	39 123 25.9% 50.5%	535 31.3%	536 42.7%	672 33.1%	513 25.0%	671 1.9% 25.1%

^{\$} Including for divisionals

* From the EPO database (EPASYS) and WIPO web site

[#] Information on PCT-IP filings for the samples enters the data more than one year late and is undercounted here. Numbers for the population are from the WIPO web-site status January 2012.

["] Based on a list of semi-harmonised applicant names



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