

## **International Survey**

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The use of IT in European banking groups with  
international ramifications

Year 2011

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# Introduction

Each year the Interbank Convention on Automation (CIPA) – established in 1968 at the initiative of the Bank of Italy and the Italian Banking Association (ABI) – carries out, jointly with ABI, a “Survey on the State of Automation in the Banking System”, with the aim of providing an overview of the use of information and communication technology in the Italian banking system.

The presence abroad of the main Italian banking groups and the widespread presence in Italy of leading foreign banks create a need for a comparison between the operations of Italian groups and those of other groups abroad.

This has led to the “Survey on the use of IT in European banking groups with international ramifications”, which for some years now has been conducted jointly with ABI with the aim of providing information for the analysis of the role of IT in the European banking system, the trend and distribution of IT costs, the strategies for the organization and governance of IT structures and the choices with regard to technological innovation.

The objective continues to be valid, notwithstanding the limits encountered in reaching distant realities with respect to Italy's.

The results of the analysis are set out in a document that is published on the CIPA and ABI websites (respectively [www.cipa.it](http://www.cipa.it) and [www.abi.it](http://www.abi.it)).

As previously, the involvement of foreign groups in the 2011 survey was achieved, via banks belonging to CIPA with a foreign parent company and via branches located in Italy, with the organizational support of the Milan branch of the Bank of Italy.

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Rome, December 2012



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# Summary of the results

The 2011 survey on the use of IT in European banking groups with international ramifications, notwithstanding the limits encountered in reaching distant realities with respect to Italy's, again seeks to provide information for the analysis of the role of IT in the European banking system, the trend of IT costs, the organizational strategies adopted and the choices with regard to technological innovation.

Ten groups – three Italian and seven foreign – participated in the 2011 survey. Of these, nine (seven foreign and two Italian) were among the top 21 European banking groups by total assets with reference to the 2011 financial year.

The sample groups engaged mainly in retail banking and corporate and investment banking, which together accounted for 74.3% of their total business. On average retail banking was the most important activity for both the foreign and the Italian groups, but especially the latter, for which it represented 61.5% of their total business, compared with 40.2% for the foreign groups. By contrast, the foreign groups reported larger shares of corporate and investment banking (29.1%), private banking (15.7%) and other services (14.9%).<sup>1</sup>

Considering the constant sample of 7 groups (4 foreign and 3 Italian), IT costs<sup>2</sup> rose by 0.3% in 2011 and were expected to rise by 2.9%, in 2012. As in earlier years, the overall trend in 2011 reflected divergent disaggregated results: a modest increase of 0.8% for the foreign groups and a decrease of 0.9% for the Italian groups. The divergence was more pronounced in the forecasts for 2012: whereas the foreign groups expected an increase of 4.5%, the Italian groups expected a further small decrease of 0.7%.

Rationalization in the use of products and services, outsourcing, consolidation of systems and applications and renegotiation of contracts continued to be the main steps taken to reduce costs.

Although the sample composition and number of groups were different from the previous year's, the breakdown of IT costs by productive factor was not significantly different in percentage terms. The largest share was again spending on services received from third parties,<sup>3</sup> (30.5% of TCO), followed by spending on personnel (28.9%) and that on software<sup>4</sup> (18.9%).

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<sup>1</sup> Other activities include asset management, insurance, securities services, consumer finance, factoring, real estate and pension fund management, etc.

<sup>2</sup> Defined as total cost of ownership (TCO), i.e. current spending plus depreciation/amortization.

<sup>3</sup> Services acquired under outsourcing and facility management contracts, external collaborators and outside consultants.

<sup>4</sup> Systems and applications software purchased.

Similarly, the distribution of cash outlays<sup>5</sup> by functional area now shows a basically constant pattern, the operations area accounting for 51.8%, followed by support processes (20.9%) and marketing, commercial and customer service processes (17.6%).

In the 2011 survey the division between “run-the-business” and “change-the-business” expenditure, which was again based on cash outlays in order to include the investment components that truly characterize banks’ orientation with regard to IT expenditure, showed that 63.8% of cash outlays went to run the business and the remaining 36.2% to change the business. As to the distribution of IT expenditure between business and functions, 70.1% of cash outlays went to the former and 29.9% to the latter.

Expenditure on making procedures comply with the law in force in each country varies from group to group and from year to year, depending on the time taken to implement the legislation and individual banks’ organizational and economic choices. As regards the cash outlays on compliance, as in the past a widely diversified situation was found, with the share of total outlays ranging from 11.9% to 1.8%. The distribution of compliance expenditure by type of intervention not only confirmed the previous year’s findings concerning the importance of compliance with supervisory regulations (28.0%) but also revealed a large increase in the percentage of compliance costs associated with tax/accounting rules (27.5%).

For the sample as a whole, it was found that the cost of IT amounted to an average of 0.2% of total assets, 14.4% of operating costs and 9.2% of gross income, with a smaller min/max range than in the previous survey owing to the reduction in the size of the sample.

Cross-border integration of IT systems involved all the foreign groups, reflecting their wider geographical coverage, and one Italian group. Two groups have already completed this activity, while half the sample plans to complete it by the end of 2013.

As for spending on technological innovation, half the groups expected to spend more in 2012 and 30% to spend the same. Expenditure on technological innovation amounted to between 2% and 15% of TCO.

All the various technological environments are now present to a significant extent or are being adopted in all the banking groups in the sample. The investments for mobile and business intelligence applications always ranked first, for both internal functions and those of an external nature for customers. Considering the internal functions alone, the field of greatest innovation is that of big data, for which 50% of the sample groups expected to make investments in the two years 2013-14. Again by the end of 2014, nearly all the sample groups expected to invest in social networking and cloud computing. As regards external functions, investment in contactless technologies takes on considerable importance, aimed at providing customers with new services: 60% of the sample had already made investments in 2012 and by the end of 2014 this figure was expected to rise to 90%.

All the sample groups, both Italian and foreign, had recourse to application and infrastructure solutions based on the private cloud model. A small number of groups had

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<sup>5</sup> Defined as current spending plus investment.

recourse to public cloud services. None of the three Italian groups used hybrid or community cloud solutions, which were found among the foreign groups, albeit to a limited extent.

Eight out of ten groups had adopted open source solutions. Of these, 75% had not modified the solutions adopted or at any rate had not shared the changes made with the community.

As regards IT security issues, 77% of the sample groups reported that protection of the perimeter was a major factor, followed on a par by identity management and data security (55.6%).

The spread of mobile devices born in the consumer world has become of major importance in the business world and has had a significant influence on *modi operandi*. Among laptops, tablets and smartphones, the laptop was the most widespread device; the role of the tablet was negligible or of little significance for the moment; the use of the smartphone varied widely among the sample groups. Four out of nine groups (44.4%) expected personal mobile devices to be used for work purposes in specific circumstances; no group expected their generalized use. The aspects of greatest concern to most of the groups was the security and integrity of corporate systems, followed by the possible loss of data.

Overall, the geographical distribution of banks was biased in favour of Europe (64.2% of the total) against non-European areas (35.8% of the total). The banks of the Italian groups were almost all (99.1%) concentrated in Europe; the banks of the foreign groups, although mainly present in Europe, were found in all the geographical areas considered.<sup>6</sup> The distribution of IT structures reflected that of the banks. Some 68.1% were located in Europe, with a substantial proportion located in Eastern Europe (27.0%).

As regards the organizational aspects of IT, there was a tendency for central systems to be managed internally, while the management of the other areas (applications, transmission systems and peripheral systems) was equally divided between insourcing and outsourcing.

The prevalent organizational model for the IT factory was found to be the centralized one (with or without competence centres), 70% of the sample groups. The Italian groups had adopted only the “pure” centralized model of the IT factory; it is the foreign groups in the sample that gave importance to competence centres, in both the centralized model (57.1%) and the distributed model (42.9%).

Formalized systems for measuring IT performance were found to be widespread: in addition to 70% of the sample that gave positive responses, another 10% expected to adopt such a system in 2013. The factors deemed most important in the assessment were service levels and costs.

Analysis of the distribution of IT personnel by professional role and age, showed that persons aged less than 35 accounted for a larger share of total employment in the foreign

<sup>6</sup> For Europe: Mediterranean Europe, the United Kingdom, Central and Western Europe, and Northern and Eastern Europe; for the non-European areas: North America, Central and South America, Middle East, Asia, Africa and Australia.

groups (36.1%) than in the Italian groups (33.2%), especially for clerical staff and middle managers. For senior managers it was the Italian groups that had a higher percentage of under-35s (about 4 percentage points more). In the distribution by role and gender, women were a higher proportion of the IT staffs of the foreign groups than of the Italian groups (on average 29.8% against 23.7%). The rate of female participation in the Italian groups decreased as workers' grades increased (from 26.5% among clerical staff to 9.5% among senior managers). The percentage of women was always higher in the foreign groups than in the Italian groups, and the rate of female participation decreased less sharply in the former than in the latter as workers' grades increased.

Lastly, limited use was made of reference standards for IT competences and professional profiles, mainly adopted for training purposes, in particular for the certification of methodologies (e.g. ITIL) and products (e.g. operational systems, application software, ERP); less use was made of reference standards for professional profiles (e.g. EUCIP, e-CF, AITTS, SFIA and CIGREF).

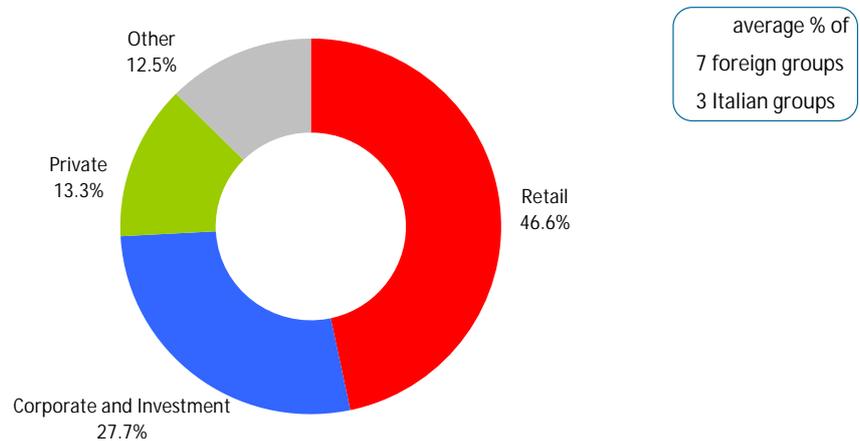
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# Characteristics of the sample

Ten groups – three with an Italian parent company and seven with a foreign parent company – participated in the 2011 survey. Of these, nine (seven foreign and two Italian) were among the top twenty-one European banks in terms of total assets, with reference to the 2011 financial year.

The sample groups engaged mainly in retail banking and corporate and investment banking; together these accounted for 74.3% of the sample groups' total business. The remaining activities were divided between private banking (13.3%) and other services (12.4%).

**Figure 1 Banking activity**

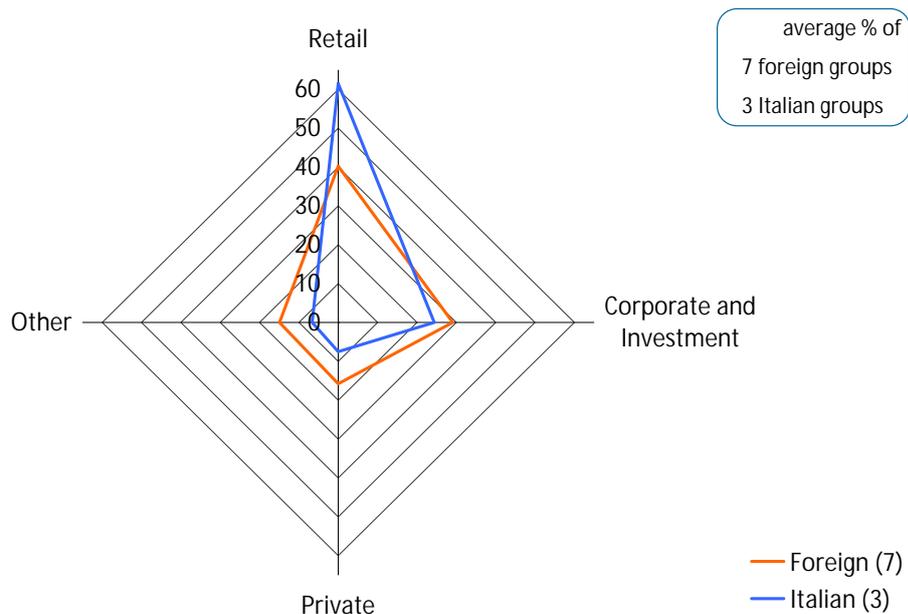


As is clearly shown by the graphical evidence (Figura 2), the Italian groups were primarily involved in retail banking, 61.5% against 40.2% for the foreign groups, while the latter reported larger shares of corporate and investment banking (29.1% against 24.4% for the Italian groups) and especially private banking (15.7% against 7.5%). The foreign groups reported that they also engaged in other activities,<sup>7</sup> which accounted for 14.9% of their total business, against 6.7% for the Italian groups.

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<sup>7</sup> The groups participating in the survey reported a large number of activities in addition to their traditional banking business, including asset management, insurance, securities services, consumer finance, factoring, real estate and pension fund management.

**Figure 2 Banking activity by nationality of parent company**



In short, all the groups in the sample examined – independently of their nationality – operate in the main banking segments; more than two thirds also operate in other market segments (Table 1).

**Table 1 Banking activity**

	Number	Retail	Corporate and Investment	Private	Other
Italian	3	3	3	3	1
Foreign	7	7	7	6	6
All	10	10	10	9	7

For the purposes of the survey, the groups were classified according to the nationality of the parent company and by size (see the Methodological notes).

# Chapter 1. IT Costs

This chapter analyzes the economic profile of the sample groups in terms of the overall trend of IT costs, their impact on the main items of the accounts and the steps taken to obtain cost savings. It also considers IT spending by productive factor and functional area, with a detailed examination of compliance.

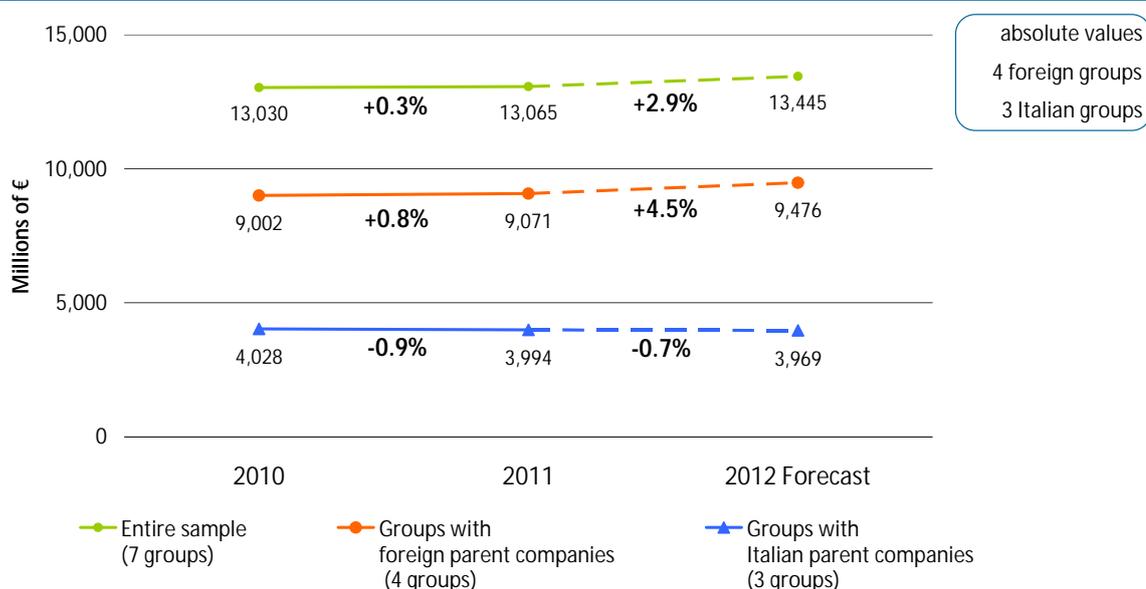
## 1.1 Trend of IT costs

As usual, IT costs were measured in terms of the total cost of ownership (TCO), which comprises current spending plus depreciation/amortization. and cash outlays, defined as current spending plus investment.

In order to determine the trend of IT costs, in the sense of TCO, reference was made in 2011 to a constant sample of seven groups,<sup>8</sup> which provided responses for the 2010 and 2011 financial years and the forecast for 2012.

In 2011 IT costs – which amounted to €13,065 million for the constant sample referred to above – grew overall by 0.3%; the forecast for 2012 is for a substantial increase of 2.9% (Figure 3).

Figure 3 Trend of TCO

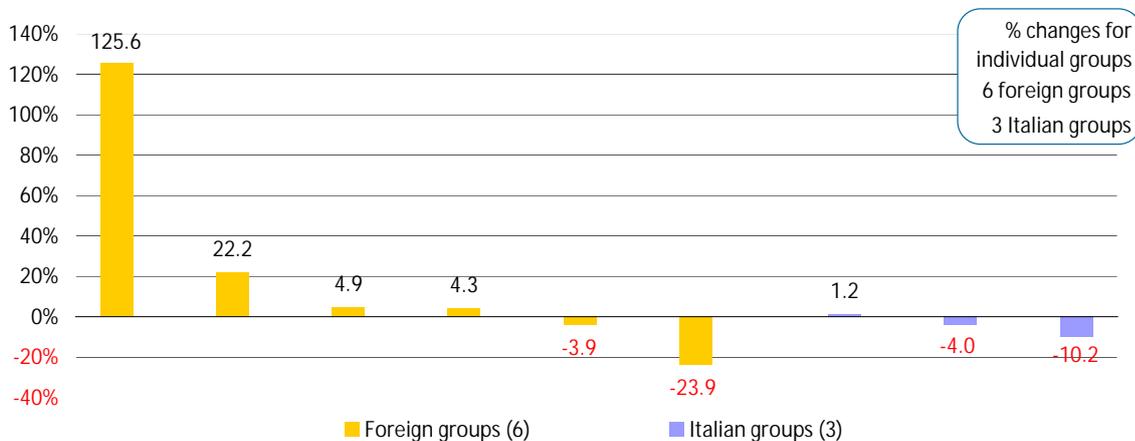


<sup>8</sup> Four groups with a foreign parent company and three with an Italian parent company; one foreign group in the sample was not considered because its IT costs showed a major discontinuity due to mergers and acquisitions during the 2011 financial year.

As already found in earlier years, the average value derived from divergent trends observed for the foreign groups and the Italian groups: the former reported a small rise of 0.8%, the latter a fall of 0.9%. The divergence was even more pronounced among the forecasts for 2012: the foreign groups expected an increase of 4.5%, the Italian groups a small decrease of 0.7%.

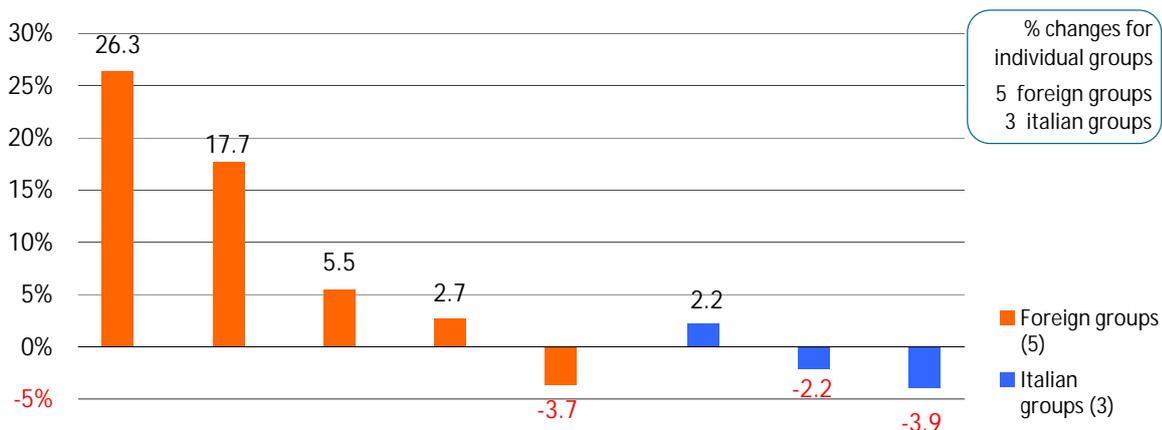
Overall, the ten groups that provided responses to the 2011 questionnaire reported a TCO of €21,018 million, of which €17,025 million was accounted for by the seven foreign groups and €3,993 million by the three Italian groups. The percentage changes recorded by the individual groups differed widely and often depended less on the nationality or size of the group than on organizational choices linked to corporate events (Figure 4 Percentage changes in group TCO in the two years 2010-11).

**Figure 4 Percentage changes in group TCO in the two years 2010-11**



The forecasts also reflected assessments that differed widely between the individual groups, as can be seen from Figure 5 Forecast of TCO in 2012 by group.<sup>9</sup>

**Figure 5 Forecast of TCO in 2012 by group**

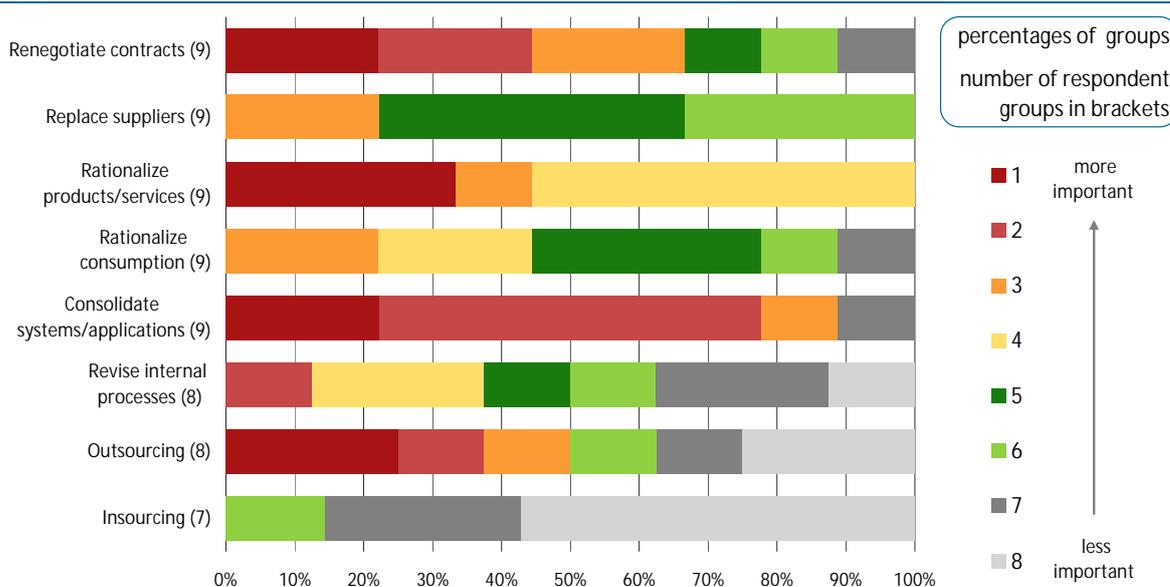


<sup>9</sup> One foreign group did not submit a forecast for 2012.

The data on the trend of costs give topical significance to the analysis introduced for 2010 of the main methods adopted by groups to curb their IT spending.<sup>10</sup>

Rationalizing the use of products and services, having recourse to outsourcing, consolidating systems and applications and renegotiating contracts continued to rank highest in order of importance; in particular rationalizing products and services was put first by more than 30% of the groups, and renegotiating contracts and consolidating systems and applications by more than 20%.

**Figure 6 Actions undertaken to achieve TCO cost savings**



## 1.2 IT costs by productive factor and functional area

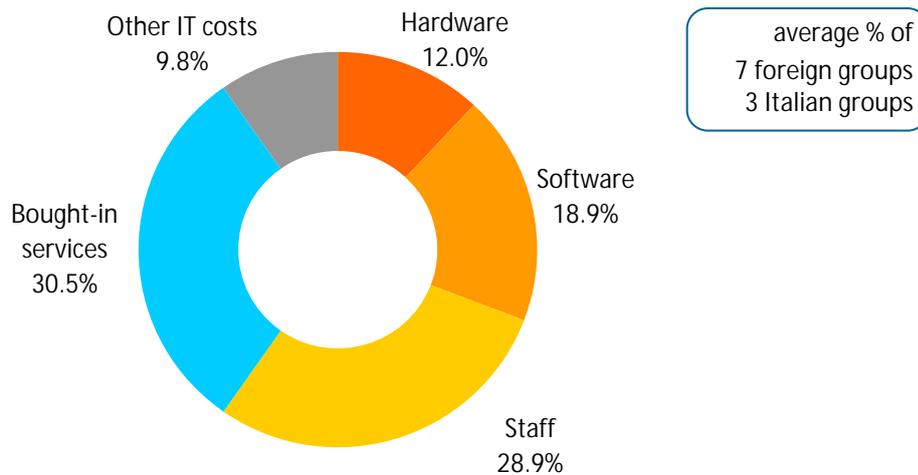
Although the composition and size of the sample were different from those of the 2010 survey, the percentage distribution of IT costs by productive factor was much the same. The first place was again occupied by spending on services purchased from outside the group<sup>11</sup> (equal on average to 30.5% of the total), followed by staff costs (28.9%) and spending on software<sup>12</sup> (18.9%) (Figure 7).

<sup>10</sup> In relation to a panel containing the main actions undertaken to achieve cost-saving objectives, each group was asked to rank them according to their importance, assigning 1 to the most important element and with the possibility of omitting any actions not undertaken.

<sup>11</sup> Services acquired under outsourcing and facility management contracts, external collaborators and outside consultants.

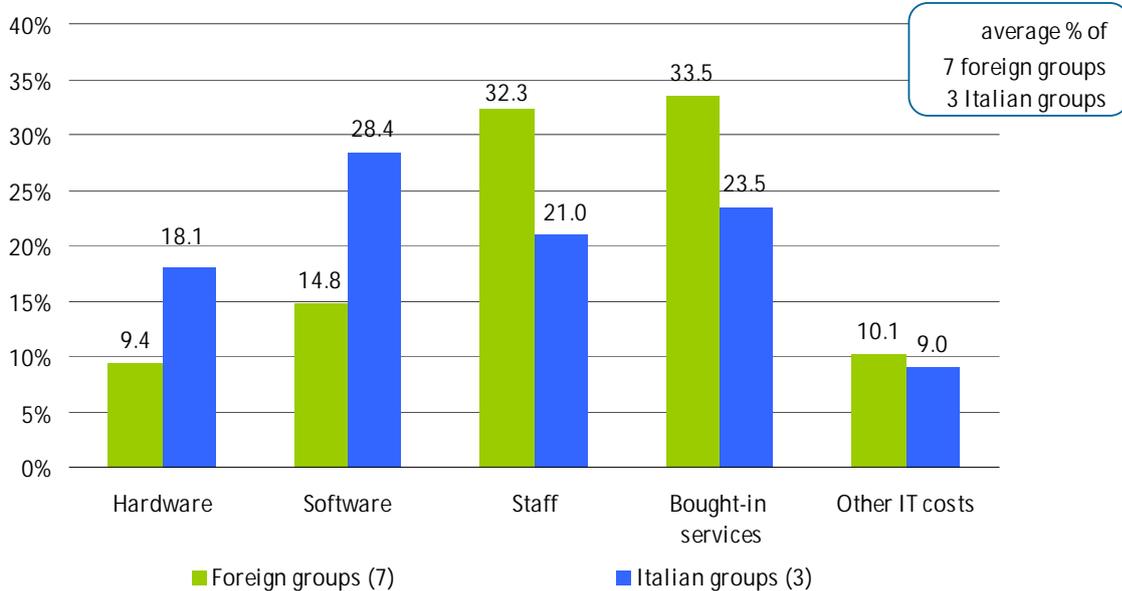
<sup>12</sup> Systems and applications software purchased.

Figure 7 TCO by productive factor



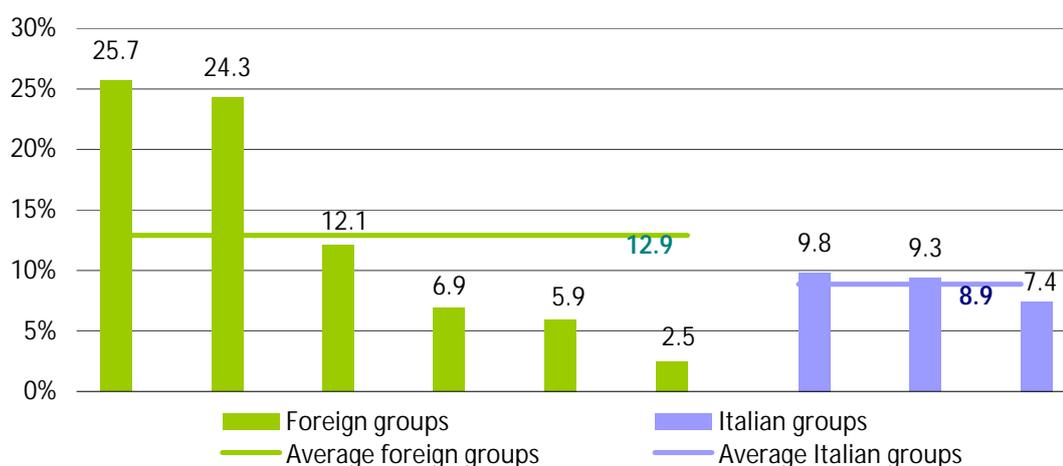
Analysis of the survey sample by nationality shows that the foreign groups allocated a higher percentage of resources to their IT staffs (32.3% of TCO) and bought-in services (33.5%), against 21.0% and 23.5% for the Italian groups. On the other hand the latter spent more on hardware and software (18.1% and 28.4%, against 9.4% and 14.8% for the foreign groups) (Figure 8). This difference was due to the different numbers of foreign and Italian groups but also to the different organizational choices for the sourcing of groups' IT activities.<sup>13</sup>

Figure 8 TCO by productive factor and nationality of the parent company



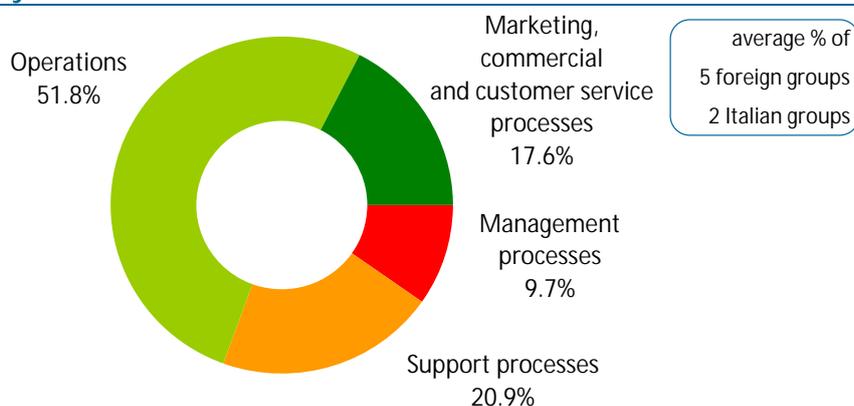
Nine of the ten groups in the survey reported cash outlays in 2011 in excess of their TCO. Analyzing the percentage ratios of the individual groups' cash outlays to TCO, they covered a very wide range for the foreign groups and a much smaller range for the Italian groups (although it should be remembered that these numbered only 3) (Figure 9).

<sup>13</sup> See Section 3.2, the organizational model of the IT factory.

**Figure 9 Difference between cash outlays and TCO as a percentage of TCO**


Overall, the value of the cash outlays reported by the 10 groups for 2011 amounted to €22,016 million, of which €17,698 million was accounted for by the 7 foreign groups and €4,318 million by the 3 Italian groups.

The distribution of the cash outlays by functional area<sup>14</sup> was obtained on the basis of the information provided by seven groups, five foreign and two Italian. Despite the changes in the composition and size of the sample, the distribution of the cash outlays has shown a steady pattern in the last few years, with the largest share (51.8%) accounted for by operations, followed by support processes (20.9%) and marketing, commercial and customer service processes (17.6%) (Figure 10).

**Figure 10 Cash outlays by functional area**


<sup>14</sup> For the classification of the operational and business areas, for the sake of homogeneity, reference was made to the taxonomy of banking processes adopted by ABI Lab. The "Operations" area comprises credit, foreign sector, finance and treasury, payments and collections, plastic money and other applications. "Marketing, sales and customer service" covers e-banking (ATMs, phone banking, call centres, internet banking/trading on line, corporate banking, mobile banking) and customer service. "Management processes" comprises management, auditing, compliance and risk management. "Support services" comprises administration and accounting, help desk, reporting to supervisory bodies, human resources, internal organization, management of IT processes and other services.

The percentages reported by the foreign groups in the area of support services were again higher than those reported by the Italian groups, while for operations the Italian groups reported higher percentages than the foreign groups.

In 2011 the distribution between run-the-business<sup>15</sup> and change-the-business<sup>16</sup> refers to cash outlays so as to have the analysis include the investment components, which better characterize the trends of banks' IT expenditure. At a more detailed level the distribution also includes the shares of cash outlays going to the business and functions areas.<sup>17</sup>

Overall, the eight groups that provided responses used about 63.8% of their cash outlays to run the business and the remaining 36.2% to change the business. On average 70.1% of the cash outlays of this sub-sample were allocated to business areas and the remaining 29.9% to function areas (Figure 11).

**Figure 11 Cash outlays: run-the-business vs change-the-business**

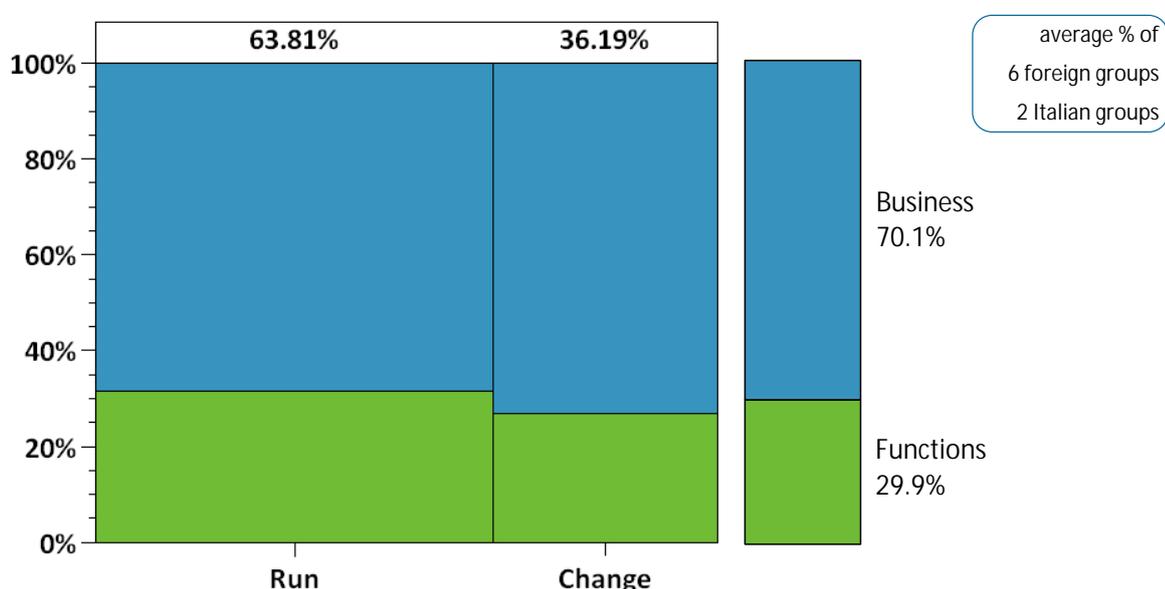


Figure 12 gives the positions of the individual banking groups in a diagram showing the percentage shares of business and change in group cash outlays in a grill organized in quadrants: the upper right-hand quadrant (1) corresponds to a share of cash outlays for change and business of more than 50%; while the lower left-hand quadrant (3) corresponds to a share of cash outlays for change and business of less than 50%. Quadrants (2) and (4) correspond to hybrid situations.

<sup>15</sup> Maintaining current operations.

<sup>16</sup> Upgrading and innovating IT systems to foster the evolution of and changes in group operations.

<sup>17</sup> "Business" means core business (operations and marketing, commercial and customer service processes), while "Functions" means support activities (management and support processes).

All the groups in the sample fell in quadrant (2), corresponding to a percentage of change of less than 50% and of business of more than 50%, in line with the results of the previous International Survey and those of the 2011 National Economic Survey.

Observing the average values of the two peer groups by nationality, it was found that Italian and foreign groups had basically similar distributions.

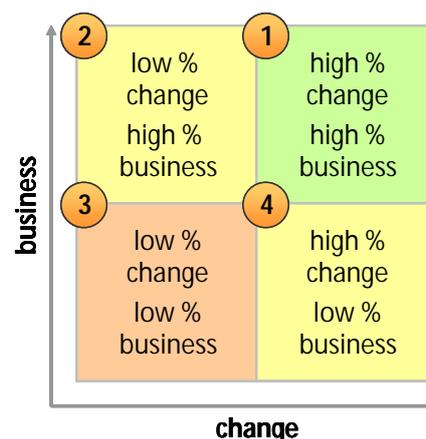
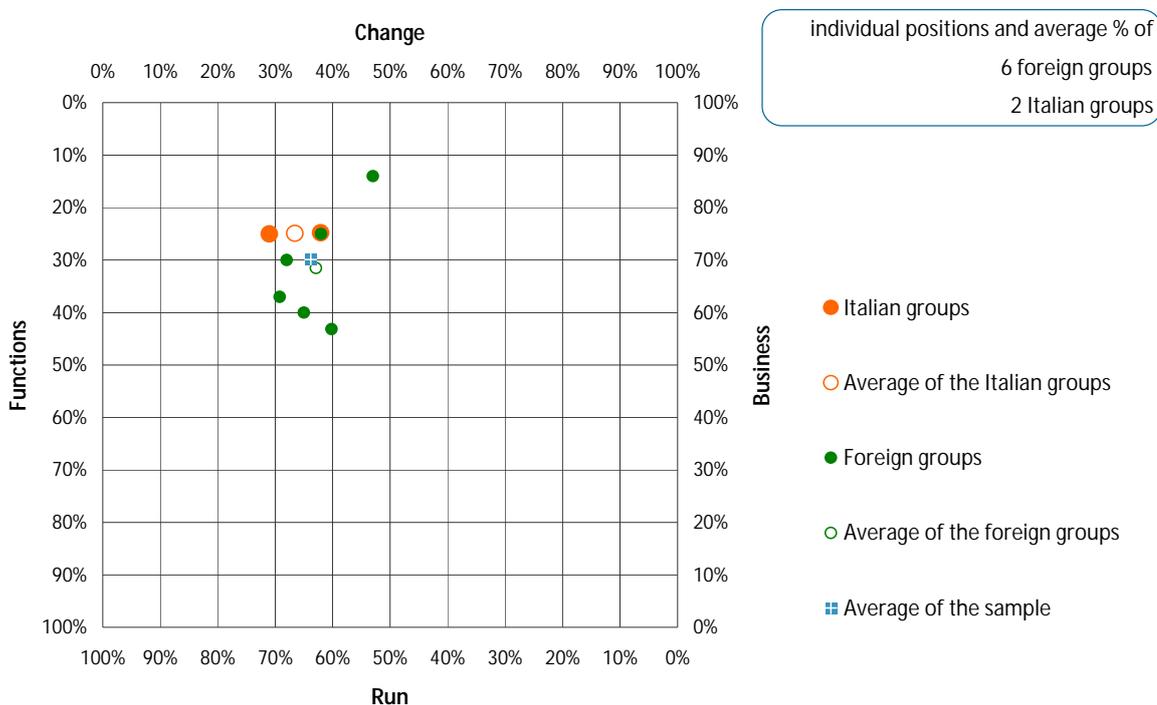


Figure 12 Change and business

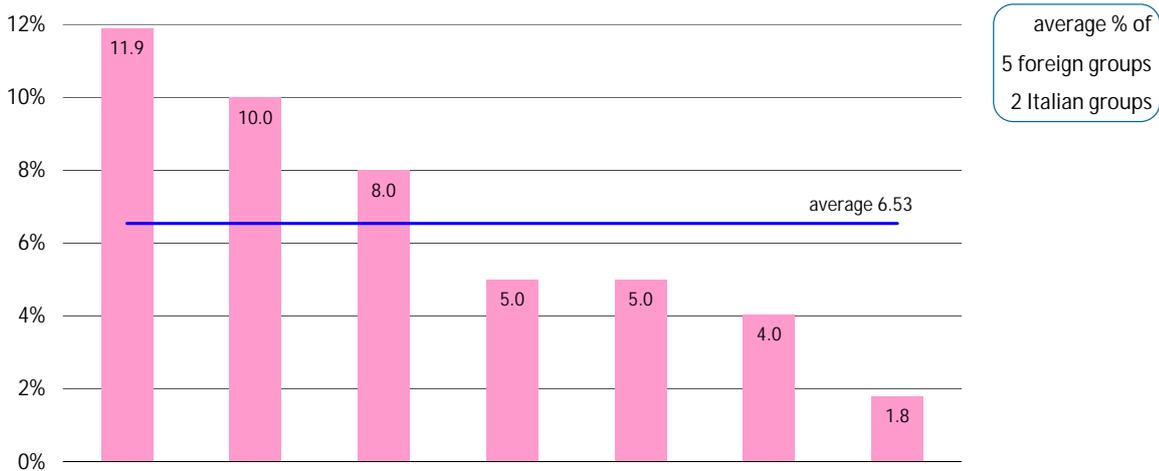


### 1.3 Compliance costs

The economic resources that each group allocated to adjusting its procedures to comply with the applicable legislation in the different countries varied from group to group and from year to year, depending on how long the rules had been in force and the organizational and economic choices of the individual banks.

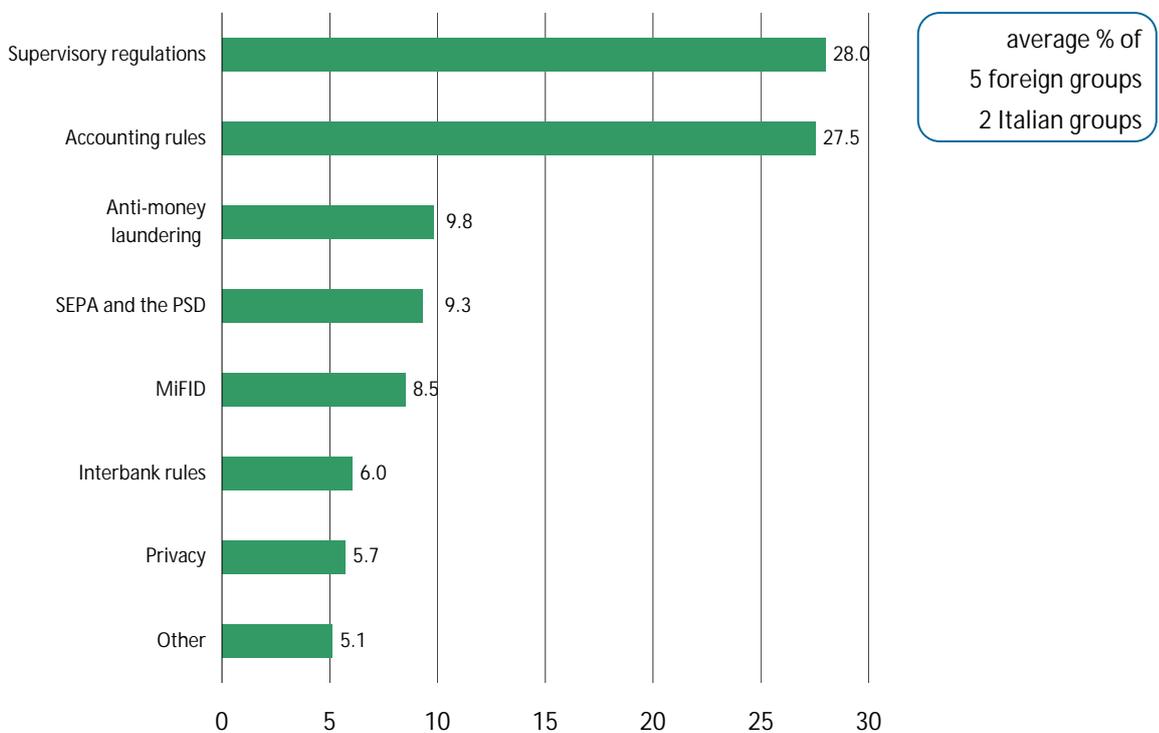
In the 2011 survey the results were again widely diversified. The data on the cash outlays allocated to compliance provided by seven groups showed that the share of total cash outlays ranged from 11.9% to 1.8%. It should be remembered that since the percentages are based on the cash outlays of each group they refer to absolute values likely to differ considerably (Figure 13).

Figure 13 Cash outlays on compliance by group



The total amount of cash outlays allocated to compliance in 2011 by the groups in the sample amounted to about €741 million. The distribution of the spending among the various types of intervention, not only confirmed what had already been found in the previous year regarding the importance of measures to comply with supervisory regulations (28.0%) but also showed a large increase in the percentage of compliance costs related to accounting rules (27.5%); the other types of compliance interventions accounted for less than 10% each. The item “other” (which comprises interventions in respect of transparency, monetics, business continuity, disaster recovery and Basel) was reported by only one group (Figure 14).

Figure 14 Cash outlays by type of compliance intervention

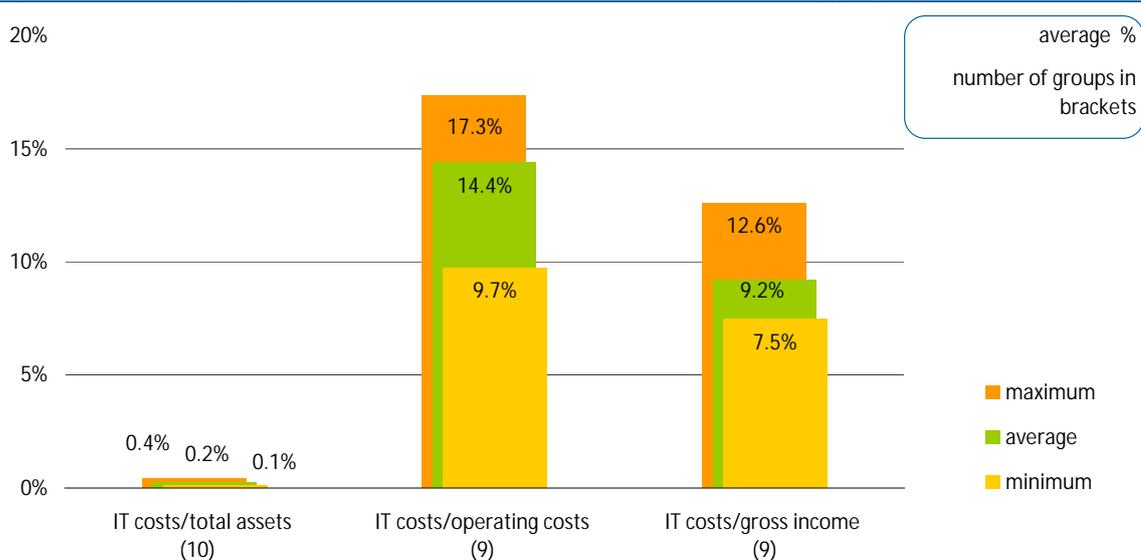


## 1.4 IT cost ratios

When analyzing the economic aspects of IT, it is always interesting to examine the relationship between IT costs (in the sense of TCO) and other important economic aggregates, in particular total assets, operating costs and gross income.<sup>18</sup>

It can be seen that the IT costs of the sample group amounted on average to 0.2% of total assets, 14.4% of operating costs and 9.2% of gross income, with smaller variations from minimum to maximum than in the previous survey owing to the reduction in the size of the sample (Figure 16).

**Figure 15 Percentage ratios of IT costs to the main economic aggregates**



<sup>18</sup> All the economic data were supplied directly by the groups taking part in the survey.



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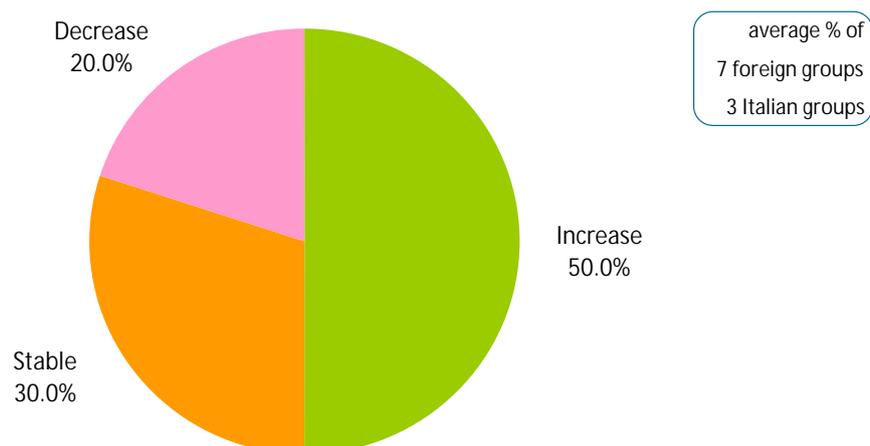
## Chapter 2. Technological innovation and IT security

### 2.1 Expenditure for technological innovation

Expenditure for technological innovation, i.e. that intended to change the company's organization and not just renew existing procedures and equipment, points to the proactive nature of the IT function and its ability to foster the use of new technologies.

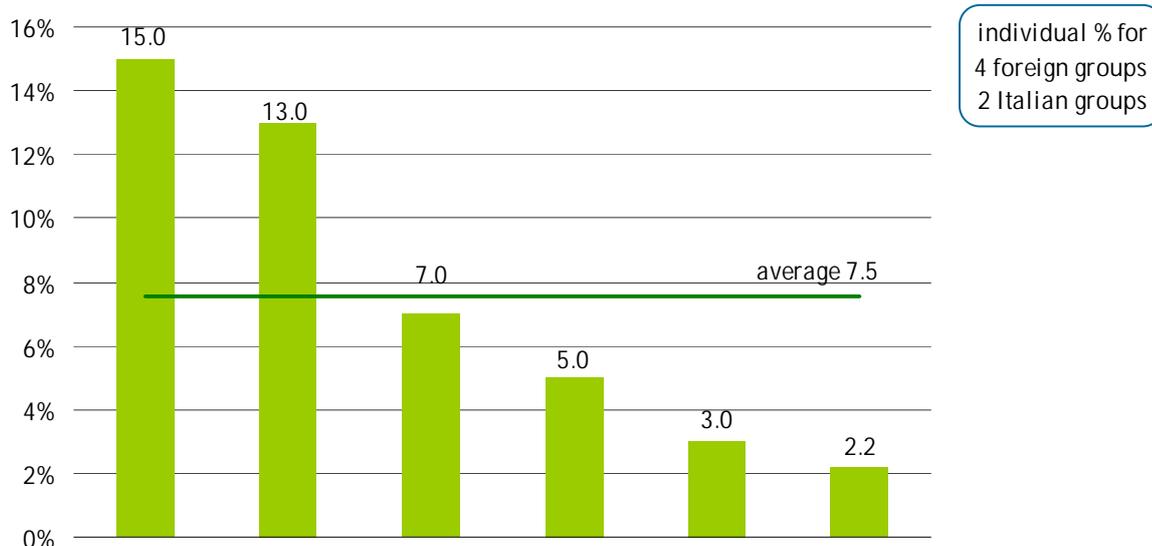
All the groups submitted information on the expected trend of expenditure for technological innovation: half reported that they expected an increase and 30% basically no change (Figure 16).

**Figure 16 Expected trend of spending for technological innovation**



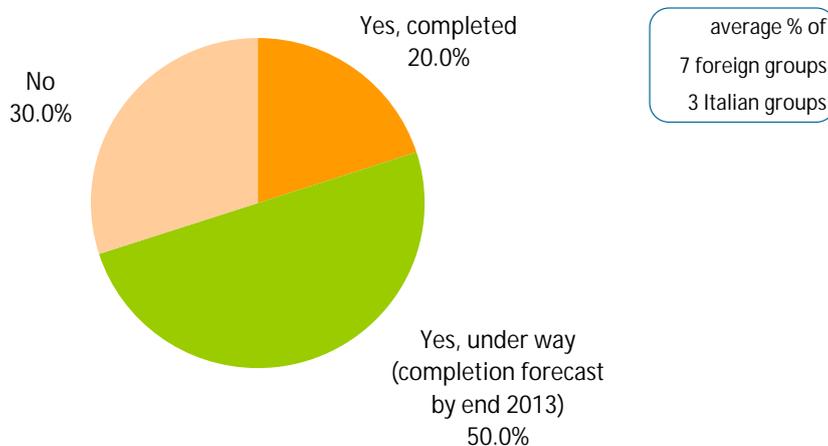
On the other hand only six groups provided information on the percentage ratio of expenditure for technological innovation to total cash outlays. The value of this ratio was found to range from 15% to 2%; it needs to be remembered, however, that percentages calculated on the basis of widely different absolute values are in no way indicative of the amount of expenditure for technological innovation of each group, even in relative terms (Figure 17).

**Figure 17 Percentage ratios of expenditure for technological innovation to cash outlays**



Cross-border integration of IT systems involved all the foreign groups, in line with their wider geographical distribution,<sup>19</sup> and one Italian group. Two groups had already completed this activity, while half the sample planned to complete it by the end of 2013 (Figure 18).

**Figure 18 Cross-border integration of the IT system**

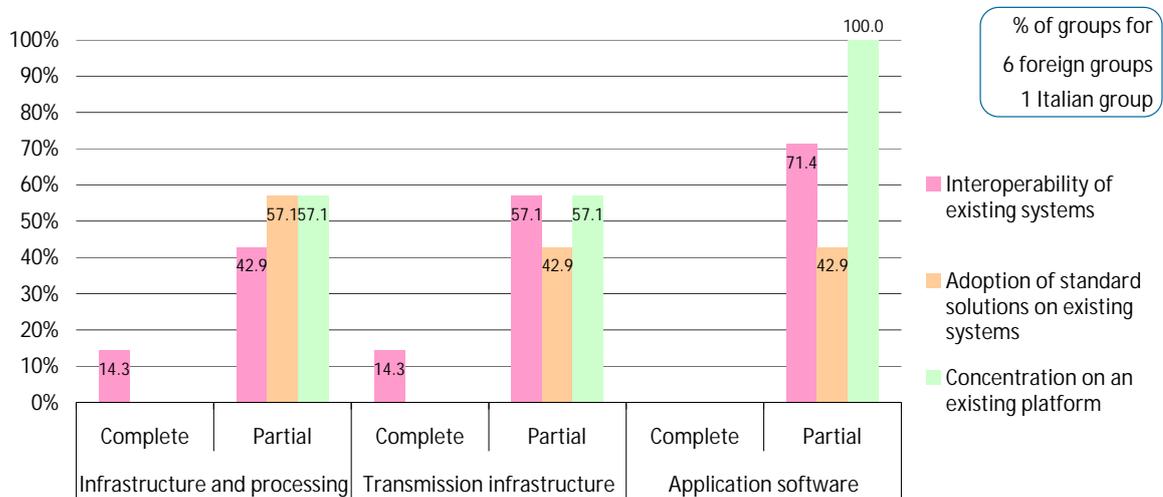


Only one of the seven groups that provided detailed information declared that it was in the process of implementing a complete cross-border integration involving both processing and transmission infrastructures; the other groups had implemented or were in the process of implementing only some infrastructures or applications. In particular, all seven groups had integrated applications by concentrating them on a single platform; five groups had achieved interoperability between existing systems, while only three reported that they had applied standard solutions to existing systems. As regards the integration of

<sup>19</sup> The geographical distribution of the groups' banks and IT structures is examined in Chapter 3 – Organizational aspects.

processing and transmission infrastructures, the solutions adopted were divided almost equally between the different integration methods indicated (Figure 19).

**Figure 19 Elements involved in cross-border integration**



## 2.2 The technologies invested in

This year groups were again asked to specify in what technological environments they had invested in. The list of technologies involved was slightly different from that of the 2010 survey and included: contactless technologies, biometric recognition systems, mobile applications, social networking, business intelligence, big data, cloud computing, together with VoIP, web conferencing, SOA and green IT.<sup>20</sup>

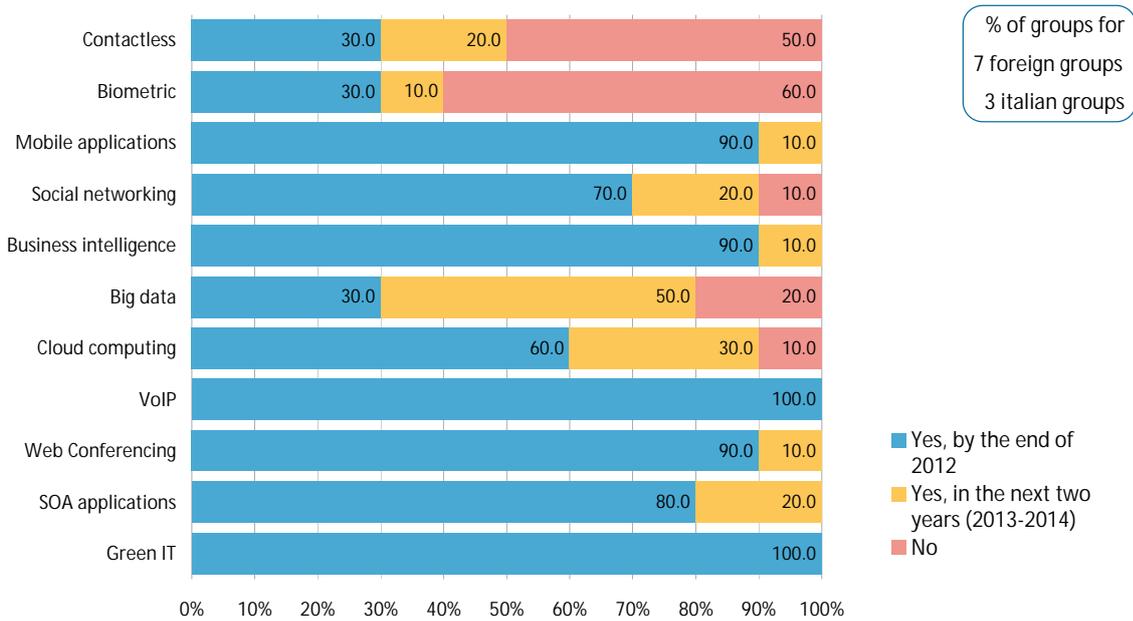
The following figures show the percentages of the sample that had invested (or expected to invest) in the technologies considered, regardless of the size of the investments.

The survey confirmed that, regardless of the purpose (for internal functions or for customer service), all the different technological environments were now present to a significant extent or in the process of being adopted by all the sample banking groups. Investment for mobile applications and business intelligence always ranked first, for both internal and external functions.

Considering only internal functions, the most innovative area was that of big data, in which more than 50% of the survey groups expected to invest in the two years 2013-14. Again by the end of 2014 nearly all the groups expected to invest in social networking and cloud computing. Investment in infrastructure technologies was basically complete, the survey confirmed that all the groups had invested in VoIP and green IT and that by the end of 2014 the same would be true for market and SOA applications. Investment in biometric and contactless recognition systems was found to be on a limited scale.

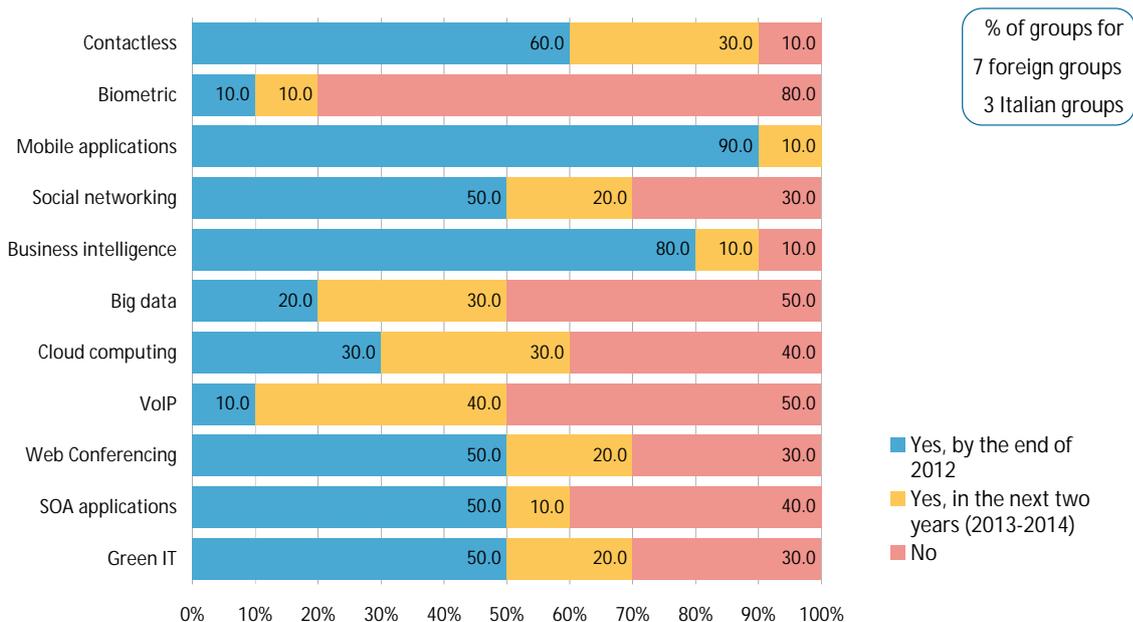
<sup>20</sup> The main features of each technology and solution are described in Chapter 4, Methodological notes.

**Figure 20 Technological investment in internal functions**



As regards external functions, the survey found substantial investment in contactless technologies aimed at providing customers with new services: 60% of the groups had already made investments in 2012 and this figure was expected to rise to 90% by the end of 2014. Together with contactless technologies, the fields that likely to see the largest increase in the number of groups involved were VoIP, cloud computing and big data. Although VoIP was used globally for internal functions, its use for external functions saw only one sample group involved by the end of 2012.

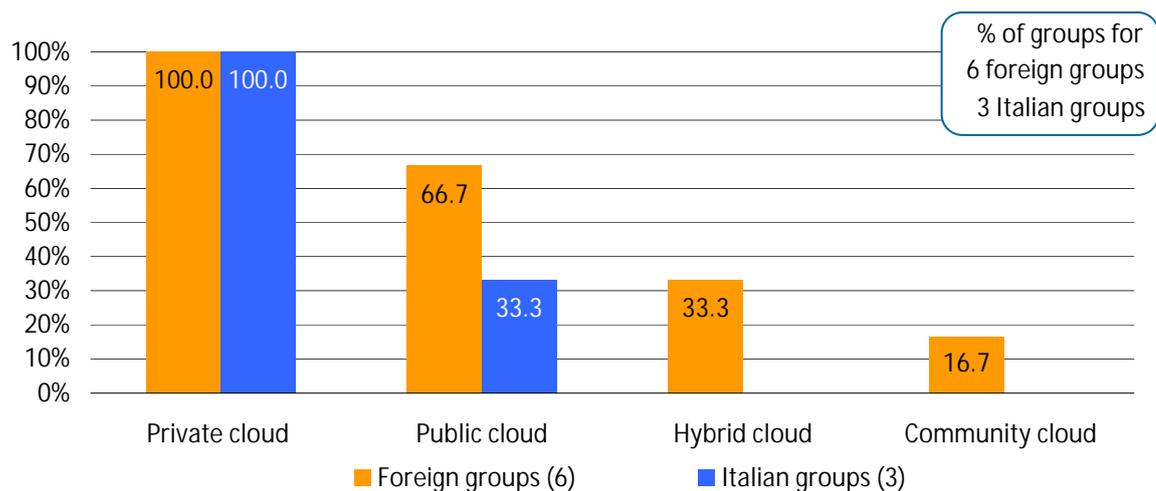
**Figure 21 Technological investment in external functions**



As regards the technological choices, further analysis was proposed for cloud computing and open source to discover the choices of the groups with respect to technological paradigms that question or at any rate strongly influence the organizational and other choices with regard to IT. All the groups, both Italian and foreign, had adopted application and infrastructure solutions based on the private cloud model. A small number of groups were using public cloud services. None of the three Italian groups used hybrid or community cloud solutions, which instead were found, albeit to only a limited extent, among the foreign groups. (Figure 22).

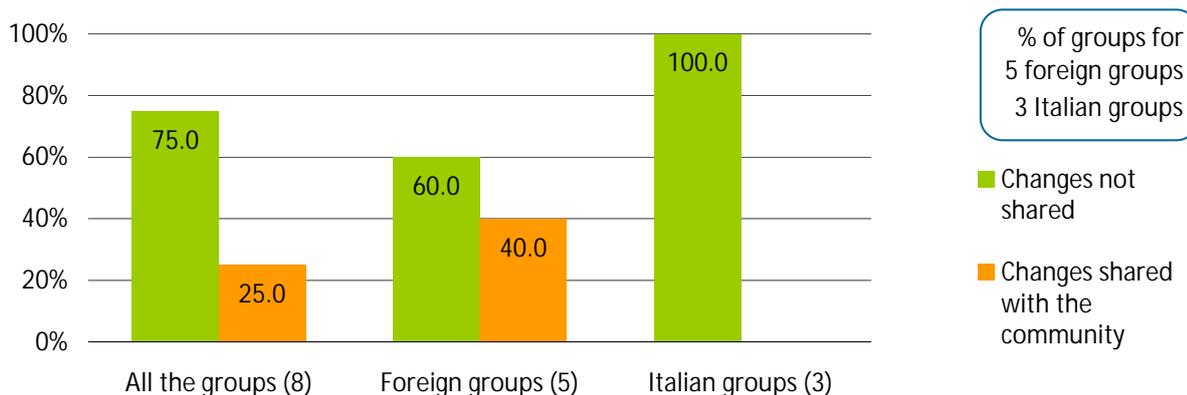
Public cloud	Private cloud	Community cloud	Hybrid cloud
Such cloud services are available to all the users who apply, generally on the basis of a pay-per-use model.	The cloud infrastructure can be accessed by only one company. It can be internal or outsourced (a so-called hosted cloud).	Several companies share the cloud infrastructure to lower the system's cost while satisfying shared needs. (e.g.. security and compliance).	The cloud infrastructure consists of combined private, public and community services to benefit from the greater freedom of choice.

Figure 22 Models for the use of cloud computing technologies



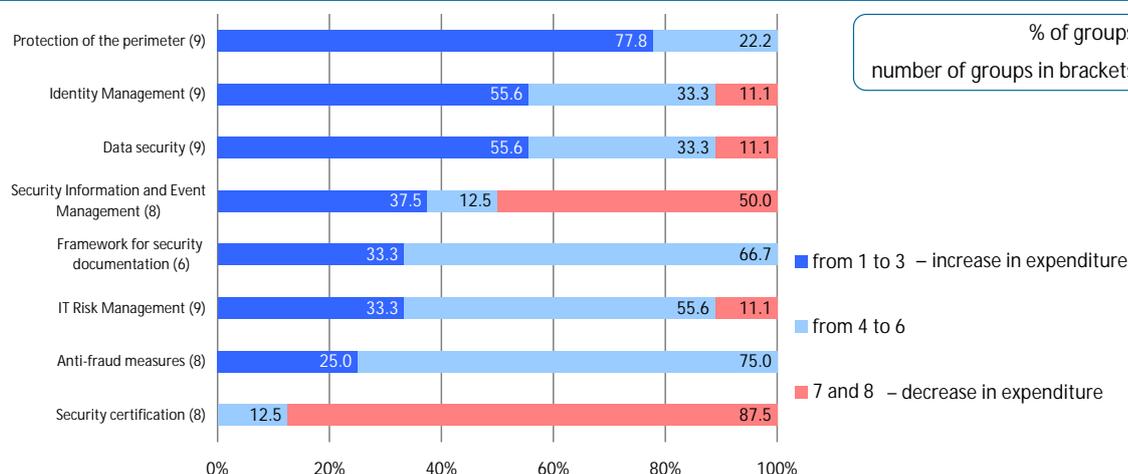
Eight of the ten groups in the survey gave affirmative answers to the question whether they had adopted open-source solutions; most (3 out of 4) reported that they did not change the solutions adopted or, if they did, that they did not share the changes they made with the community. None of the Italian groups shared changes while two of the five foreign groups did (Figure 23).

**Figure 23 Adoption and sharing of open source solutions**



The subject of security and the safeguards for its protection is always of great topical interest for the sample banking groups, both Italian and European. In this field the qualitative investigation carried out in the National Survey was proposed here: the groups were asked to rank the main items of IT security on the basis of the amount spent on each. It was found that 77.8% of the groups ranked protection of the perimeter high, followed by Identity Management and Data Security, both of which scored high for 55.6% of the groups, while varied evaluations were found above all for Security Information and Event Management. All the groups attached less importance to security certification (Figure 24).

**Figure 24 Types of expenditure for IT security**



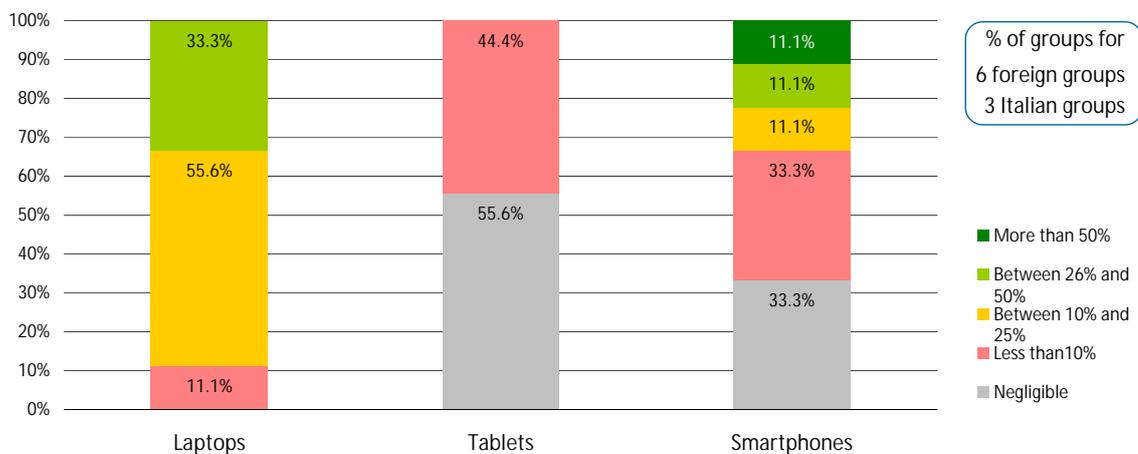
### 2.3 Use of mobile devices

The change under way in the world of IT and, consequently, in the very organization of banks is undoubtedly being influenced by the arrival on the scene of new mobile devices, which allow permanent and ubiquitous connection. Their dissemination, which began in the consumer world, surged into the world of work, where such devices are exercising a significant influence on the *modi operandi*. The International Survey examined this

development and measured the percentage presence of mobile devices among the staffs of the sample groups.

Among the nine groups that responded it was found that laptops were the most widely used of the three devices: one third of the groups reported them as being used by between 26% and 50% of their employees, while about half reported them as being used by between 10% and 25% of their employees. For now the use of tablets was negligible or of little significance, while the adoption of smartphones was highly diversified: for most of the groups significant percentages of employees used them, although it should be remembered that in three of the nine groups their use was negligible (Figure 25).

**Figure 25 Corporate mobile devices per employee**

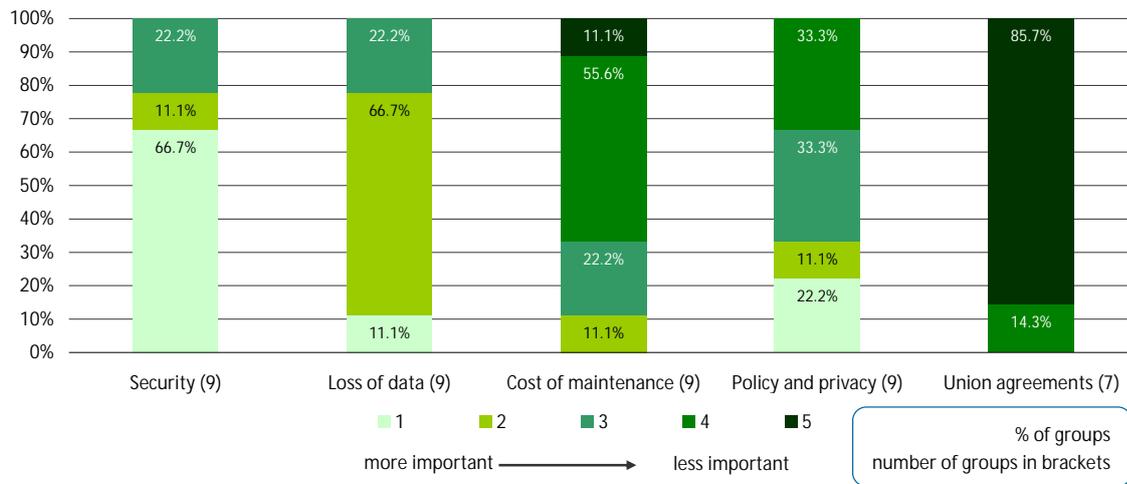


The entry of consumer products at the workplace provides opportunities for increasing companies' efficiency and employees like it. At the same time, however, it makes it necessary for IT structures to focus attention on how the devices are used, especially when it is a question of Bring Your Own Device (BYOD).

Four of the nine groups (44.4%) expected to use personal mobile devices for the performance of specific work processes (e.g. in relation to professional families or certain jobs); on the other hand no group forecast their use on a generalized basis.

The aspect that most of the groups (66.7%) underscored was the protection of the security and integrity of their corporate systems, followed by the possible loss of data (66.7% of the groups ranked this second). All the groups, with more or less emphasis, drew attention to the problem of the cost of maintaining and managing the configuration of the system and how to treat personal data and apply privacy policy (Figure 26).

**Figure 26 Main items of concern associated with the use of personal mobile devices**



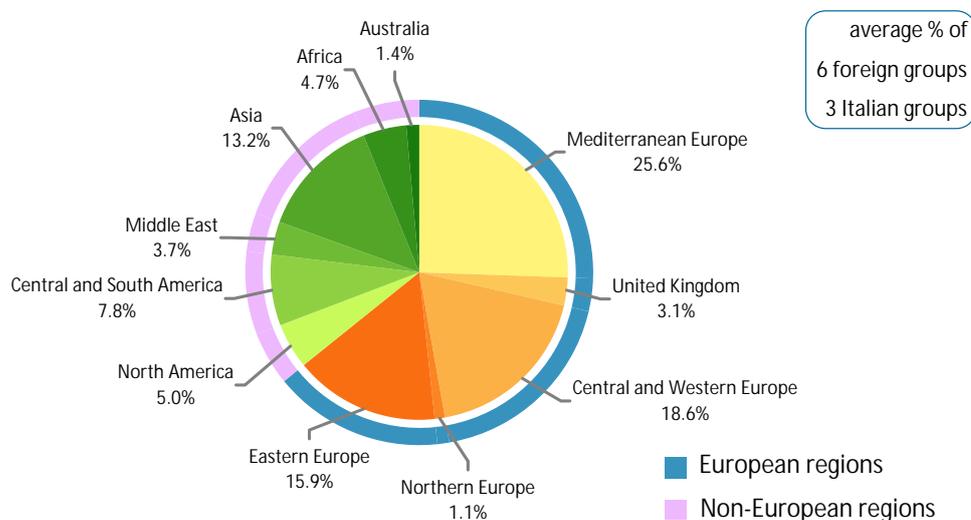
## Chapter 3. Organizational aspects

### 3.1 The geographical distribution of the groups and their IT structures

In order to better analyze the geographical distribution of the groups, the international survey analyzes the banks and their IT structures separately. As in the 2010 survey, the world map was subdivided into regions, dividing Europe into five areas and counting the other continents as distinct regions. The European regions considered were: Mediterranean Europe,<sup>21</sup> the United Kingdom, Central and Western Europe,<sup>22</sup> Northern Europe<sup>23</sup> and Eastern Europe;<sup>24</sup> the non-European regions were North America, Central and South America, the Middle East,<sup>25</sup> Asia, Africa and Australia.

The geographical distribution of the banks of the nine groups that responded to this question was biased towards Europe (64.2%), compared with a non-European location (35.8%) (Figure 27).

Figure 27 Percentage distribution of the groups' banks by geographical area



<sup>21</sup> Andorra, Cyprus, Greece, Italy, Malta, Portugal, San Marino, Spain and Turkey.

<sup>22</sup> Austria, Belgium, France, Germany, Ireland, Liechtenstein, Luxembourg, Monaco, the Netherlands, and Switzerland.

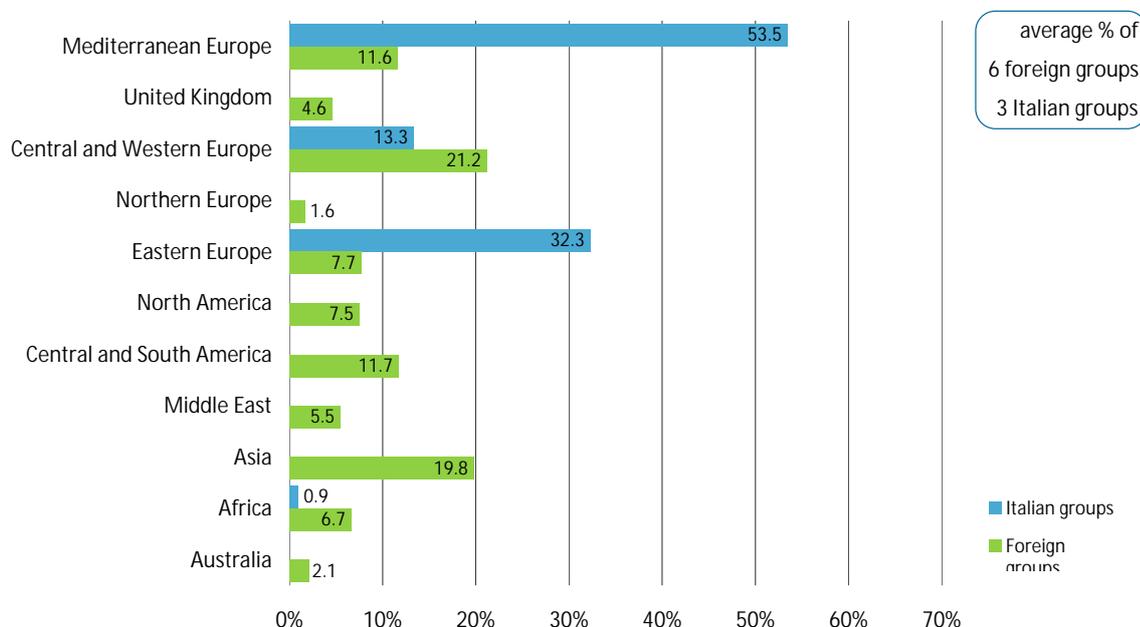
<sup>23</sup> Denmark, Finland, Iceland, Norway and Sweden.

<sup>24</sup> Albania, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, Estonia, Russian Federation, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Czech Republic, Romania, Serbia, Slovakia, Slovenia, Ukraine and Hungary.

<sup>25</sup> Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, Arab Emirates and Yemen.

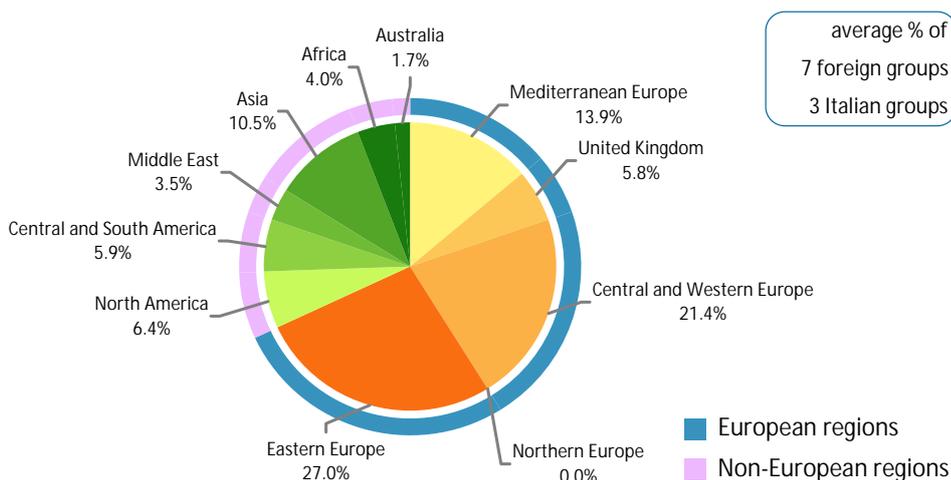
The Italian groups operate predominantly in Europe, where 99.1% of their banks are located. Although the banks of the foreign groups are also located predominantly in Europe, they are found in all the geographical areas considered. It is worth noting their significant presence in Asia (19.8%) (Figure 28).

**Figure 28 Number of banks and distribution by geographical area**



The distribution of IT structures reflected that of the banks. Some 68.1% were located in Europe, with a substantial proportion located in Eastern Europe (27.0%) (Figure 29).

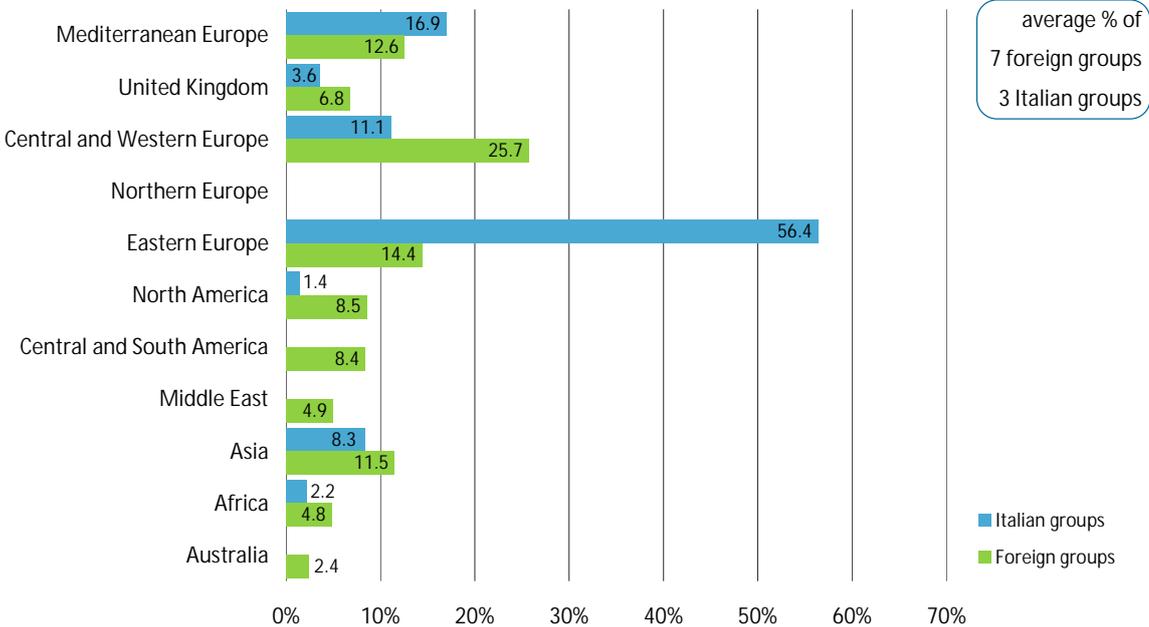
**Figure 29 Percentage distribution of the groups IT structures by geographical area**



The IT centres belonging to the groups with a foreign parent company were basically in balance between those located in European regions (59.5%) and non-European regions (40.5%). By contrast only just over 10% of the IT centres of the Italian groups were located outside Europe. In particular it was again found that Italian groups tend to shift their IT centres towards Eastern Europe and away from Mediterranean Europe. Only a

very few IT structures were found in the United Kingdom and none at all in Northern Europe (Figure 30).

**Figure 30** Number of IT structures and distribution by geographical area

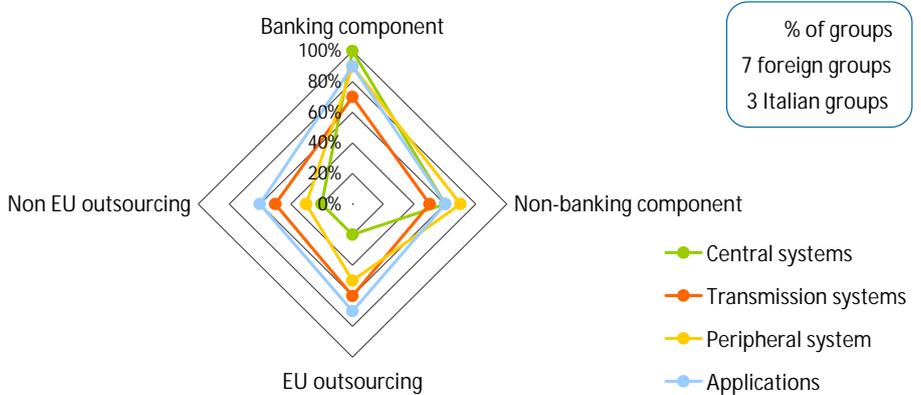


**3.2 The organizational model of the “IT factory”**

The location of IT activities varied widely across the different models: at a banking component of the group, at a non-banking component (e.g. an instrumental company for IT) or EU or non-EU outsourcing.

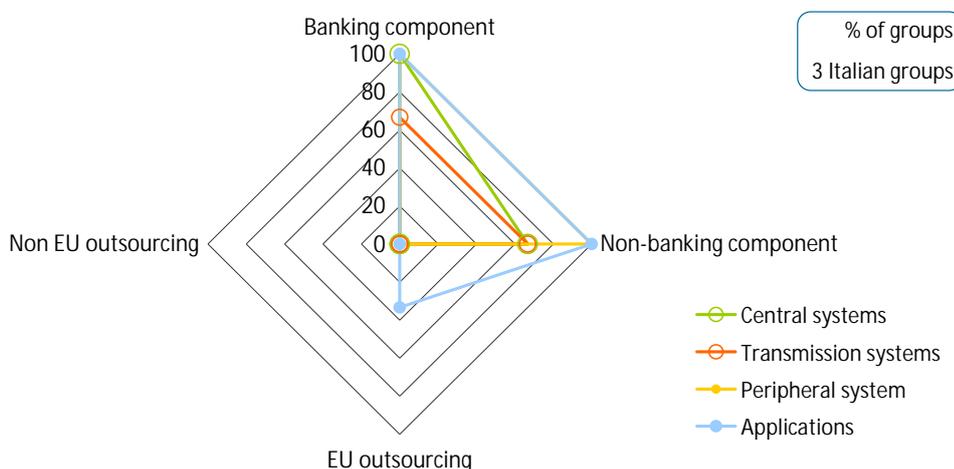
For the sample as a whole, it was found that groups tended to operate their central systems internally. By contrast, the operation of the other areas (applications, transmission systems and peripheral systems) was divided equally between insourcing and outsourcing (Figure 31)

**Figure 31** Location of groups’ IT activities



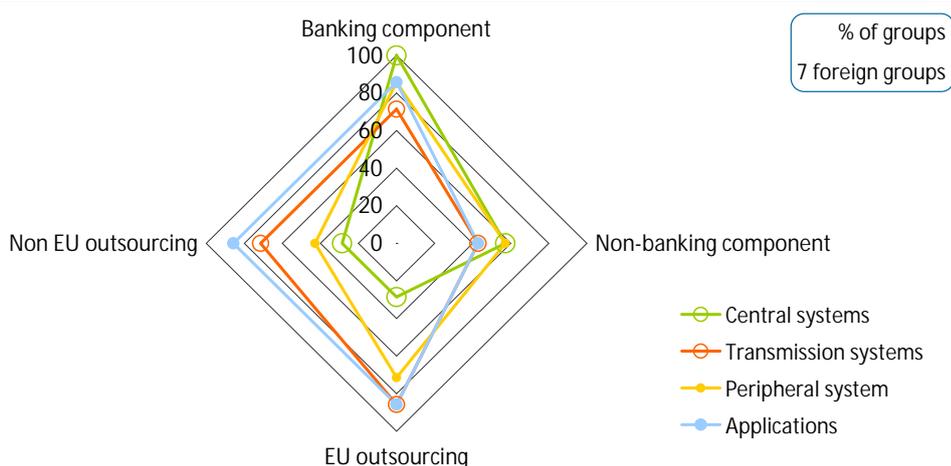
Dividing the sample according to the nationality of the parent company, it was found that the three groups with an Italian parent company preferred to entrust their IT activities within the group (a banking component or an instrumental company). Recourse to EU outsourcing was very limited and no Italian group had recourse to non-EU outsourcing (Figure 32).

**Figure 32 Location of Italian groups' IT activities**



Compared with the Italian groups, the foreign groups made less use of non-banking components and accordingly insourced many of their ICT activities at a group bank. This was especially true for central systems, which were insourced by 100% of the groups, while applications and peripheral systems were insourced by 85.7% of the groups. Foreign groups also made significant use of EU and non-EU outsourcing for all the different areas except central systems (Figure 33).

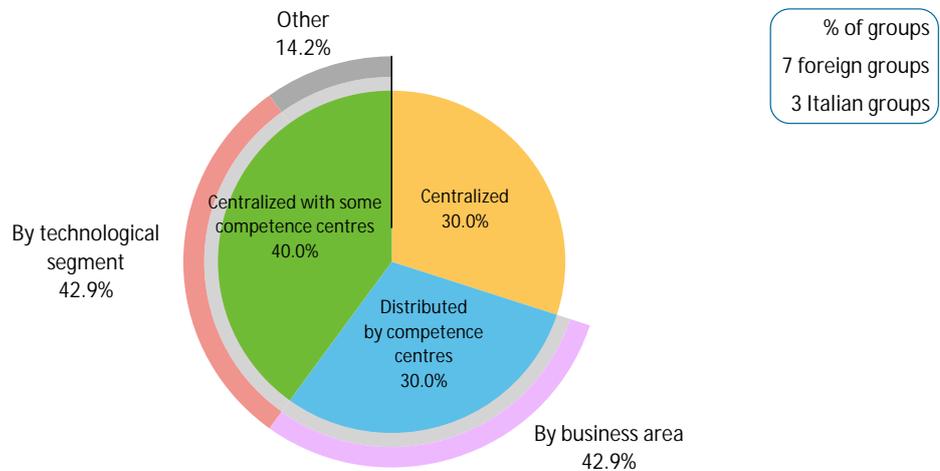
**Figure 33 location of foreign groups' IT activities**



For 70.0% of the groups, the main organizational model of the "IT factory" was the centralized one (with or without competence centres); 30.0% of the groups opted for a model distributed according to competence centres. Although, from an organizational standpoint, 70% of the sample applied different, centralized or distributed, models, these

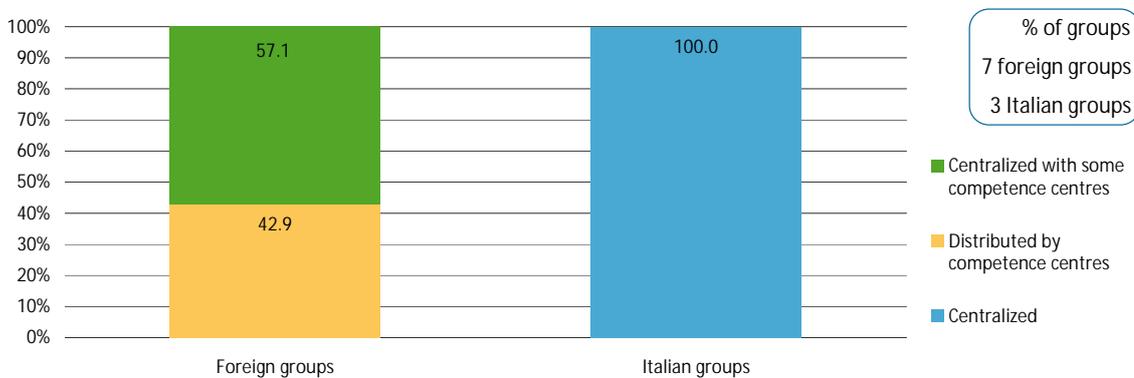
groups referred to competence centres, identified mainly on the basis of technological segments or business areas (Figure 34).

**Figure 34 Organizational model of the “IT factory”**



The distribution by nationality showed that the Italian groups all used the centralized “IT factory” organizational model and that it was the foreign groups that gave importance to competence centres, both in the centralized model, which predominated (57.1%) and in the distributed model (42.9%) (Figure 35).

**Figure 35 Organizational model of the “IT factory” by nationality of the parent company**

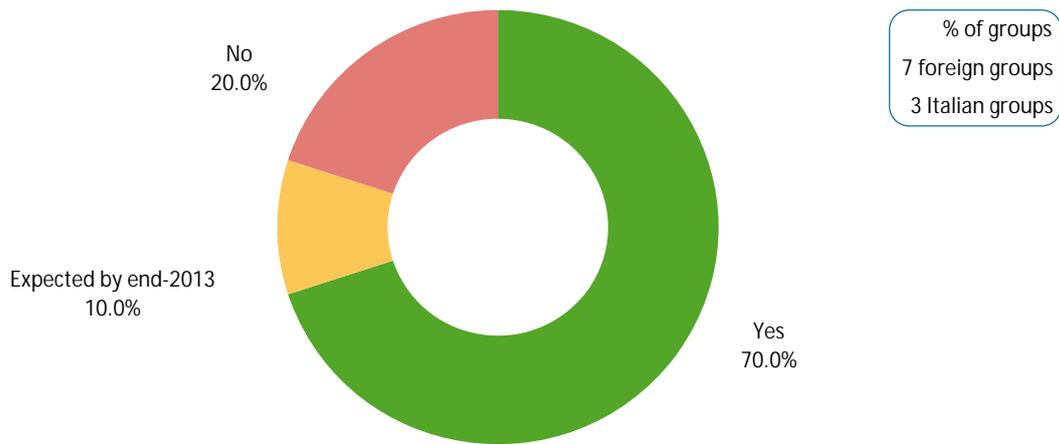


### 3.3 Performance measurement systems

The International Survey repeated the analysis of IT performance introduced in the National Economic Survey and looked at the use of formal measurement systems, the different types of system adopted and the assessment methods employed.

Performance measurement systems were found to be widely adopted, as shown by the 70% of positive responses, plus another 10% of groups expecting to adopt a system in 2013 (Figure 36).

**Figure 36 Presence of performance measurement systems**



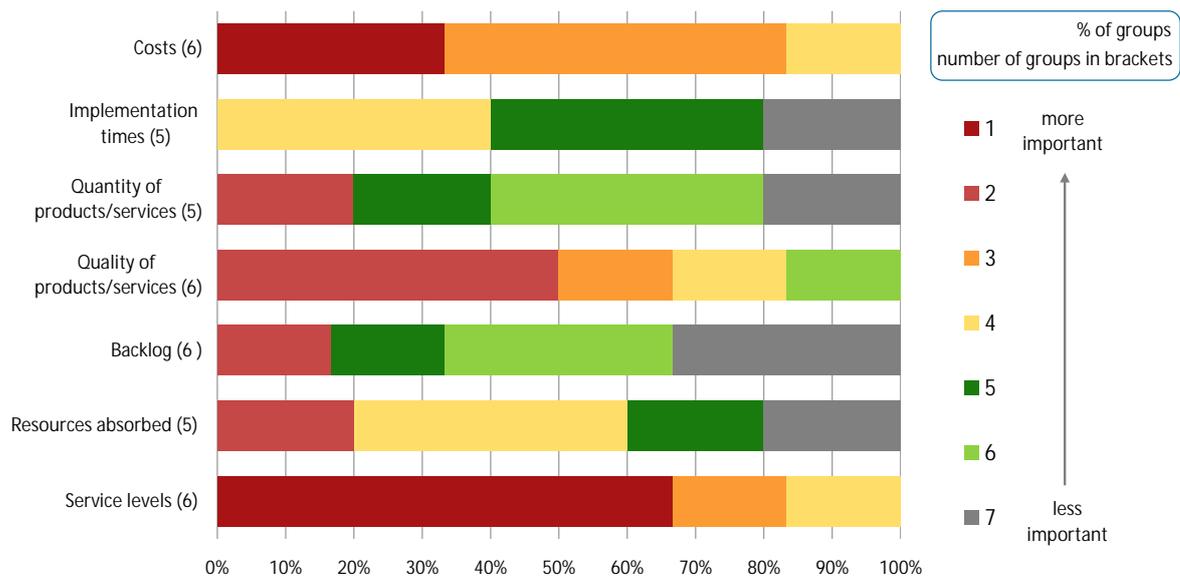
The need for such systems is felt most strongly by the Italian groups, which were all found to have one already. A less uniform situation was found for the foreign groups, where 57.1% had already adopted a system, 14.3% expected to do so shortly and the remaining 28.6% neither had a system nor expected to adopt one in the short term (Figure 37).

**Figure 37 Performance measurement systems by nationality of the parent company**



The groups were asked to rank the importance of the factors that define performance in a diagram showing seven items (costs, implementation time, quantity and quality of products/services, backlog, resources absorbed, backlog, resources absorbed and service levels). The most important factor – i.e. the one to which the largest number of respondents assigned the most importance – was found, as in the National Survey, to be service levels, followed by costs. Considerable importance was also assigned to the quality of products/services, while much less was assigned to implementation times (Figure 38).

**Figure 38 Assessment of the factors considered in measuring IT performance**

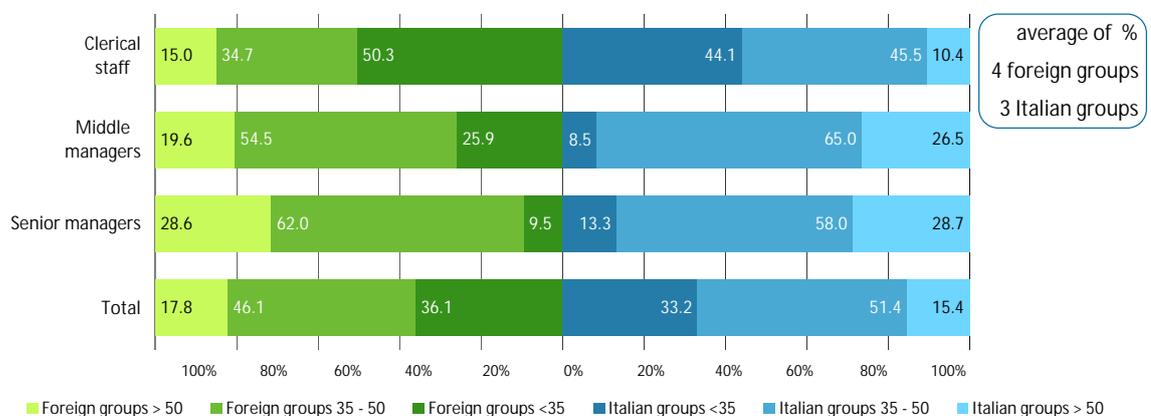


### 3.4 IT personnel

The 2011 survey repeated the analysis of IT personnel, divided into three categories (clerical staff, middle managers and senior managers) and broken down by age and gender. The age brackets considered were: under 35, 35-50 and over 50.

Analyzing the overall distribution of IT personnel by role and age, it was found that the percentage of personnel aged under 35 was higher in the foreign groups (36.1%) than in the Italian groups (33.2%). This pattern was especially pronounced for clerical workers, where there was a 6 percentage point gap in favour of the foreign groups and even more so for middle managers where the gap was nearly 18 percentage points. The percentage of personnel aged 35-50 was considerably higher in the Italian groups, regardless of their roles. The only exception was found for senior managers, where the percentage of under 35s was about 4% higher for the Italian groups than for the foreign groups (Figure 39).

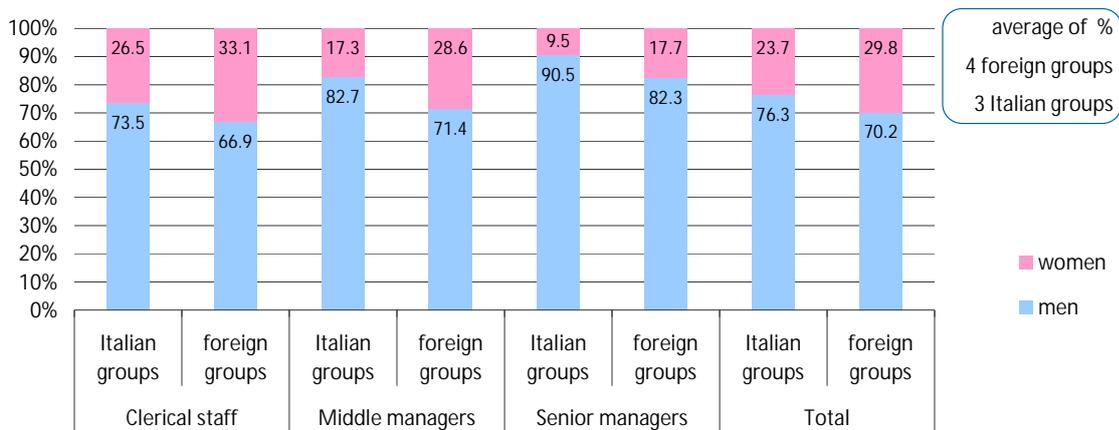
**Figure 39 Distribution of IT personnel by role and age**



Analyzing the division of IT personnel by role and gender, in the first place it was found that, overall, the percentage of women in IT personnel was higher for the foreign groups than for the Italian groups (29.8% against 23.7%).

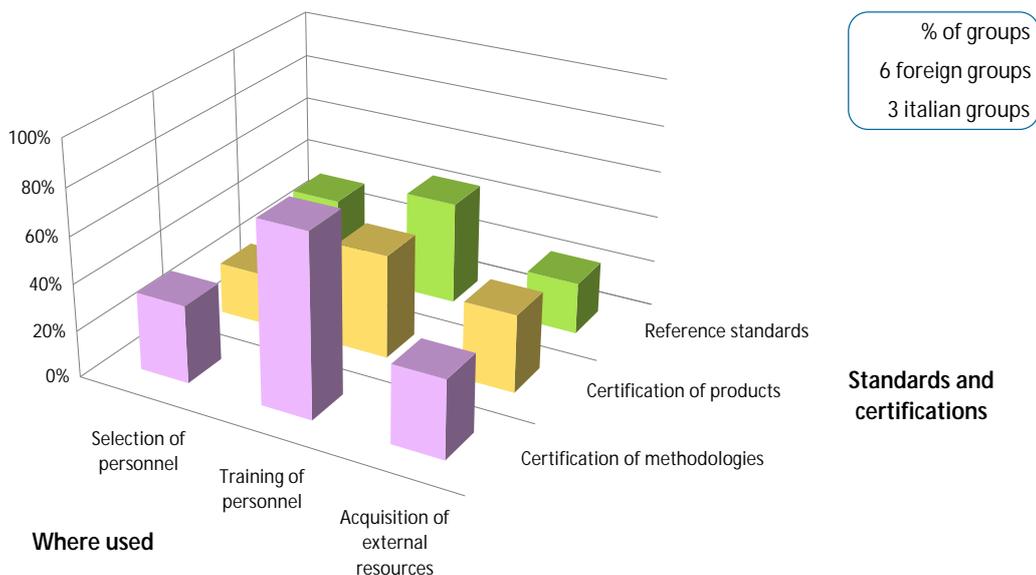
As for the distribution by role, it was found that in the Italian groups the percentage of women decreased significantly with rank (declining from 26.5% for clerical staff to 9.5% for senior managers). The average percentage of women for each role was higher for the foreign groups than for the Italian groups, and the decrease in the percentage with rank less pronounced: it fell from 33.1% for clerical staff to 28.6% for middle managers and to 17.7% for senior managers (Figure 40).

**Figure 40 Distribution of IT personnel by role and gender**



Lastly, little use was found to be made of reference standards for IT competences and professional profiles. When they were used, it was mainly for the training of personnel and, in particular, for the certification of methodologies (e.g. ITIL) and products (e.g. operational systems, application software, ERP); reference standards for professional profiles (e.g. EUCIP, e-CF, AITTS, SFIA and CIGREF) were found to be used less (Figure 41).

**Figure 41 Use of reference standards for IT competences and professional profiles**



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## Chapter 4. Methodological notes

### 4.1 General matters

The survey is based on a questionnaire that is available on the CIPA website ([www.cipa.it](http://www.cipa.it)). The data provided by the respondent groups were acquired via the Bank of Italy Internet data collection structure, accessible via a link from the CIPA site.

The International Survey, like the other surveys, is voluntary. Accordingly, the survey sample varies with the responses received.

The economic and organizational data refer to each banking group as a whole.<sup>26</sup> For the classification used for the analysis of the banking groups, reference can be made to Section 4.2.

During data acquisition and checking, special procedures identify outliers. Where these are found and they cannot be corrected, the group involved is excluded from the processing and analysis of those particular data.

In the charts, the numbers are rounded to the first decimal place. Accordingly, totals may not always be 100%.

The average percentages (given in the charts as “average %”) are computed by first calculating the percentages for each group and then averaging them. This procedure attenuates the effect of the presence within the sample of groups whose size and economic variables differ significantly.

The percentage of groups (given in the charts as “% of groups”) is computed by calculating the ratio of the number of groups providing a response to the total number of respondents. In some figures a single group may have provided more than one response and thus appear more than once in the percentages given.

### 4.2 Classification of the groups

For the purposes of the International Survey the groups have been classified in two ways: by the nationality of the parent bank (Table 2) and by size in terms of total assets (Table 3). Within each category the groups are ranked by total assets.

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<sup>26</sup> In the National Survey the data are collected for the banking components and Italian instrumental companies of groups; accordingly, the data for Italian groups published in the International Survey differ from those contained in the National Survey.

**Table 2 Classification of the groups by the nationality of the parent bank**

Unless stated otherwise, the foreign banking groups have been involved via their Italian branches, with the organizational assistance of the Milan branch of the Bank of Italy.

**3 groups with an Italian parent company**

UniCredit Group

Intesa Sanpaolo

Gruppo Banca Sella

**7 groups with a foreign parent company**BNP Paribas<sup>27</sup>, France

Barclays Bank plc, UK

Crédit Agricole Group<sup>28</sup>, France

UBS, Switzerland

Credit Suisse, Switzerland

Commerzbank AG, Germany

Banco Bilbao Vizcaya Argentaria SA, Spain

**Table 3 Classification of the groups by size**

The classification of the groups by size was based on the declared value of total assets at 31.12.2011.

**4 groups classified as “Major” (total assets of more than €1,000 billion)**

BNP Paribas, France

Barclays Bank plc, UK

Crédit Agricole Group, France

UBS, Switzerland

**5 groups classified as “Large” (total assets of between €1,000 and €500 billion)**

UniCredit Group

Credit Suisse, Switzerland

Commerzbank AG, Germany

Intesa Sanpaolo

Banco Bilbao Vizcaya Argentaria SA, Spain

**1 group classified as “Other” (total assets of less than €500 billion)**

Gruppo Banca Sella

<sup>27</sup> Involved through Banca Nazionale del Lavoro, which is a member of CIPA.

<sup>28</sup> Involved through Cariparma, which is a member of CIPA.

### 4.3 Glossary of technologies

#### Contactless

Technologies that allow two or more entities to interact without physical contact, e.g. for recognition applications. Contactless instruments include Radio Frequency Identification (RFID) and the more recent Near Field Communication (NFC).

#### Mobile applications

Applications that can be executed on small-sized mobile terminals from which users can carry out transactions that could originally be carried out only from PCs (e.g. mobile phones, smartphones, hand-held computers and PDAs).

#### Business intelligence

Set of technologies and company procedures for gathering and analyzing strategic information, in order to turn data and information into “knowledge”. As a rule the information is gathered and analyzed as inputs to decision support systems for lines of business and management control

#### Social networking

An online service, a platform or a site to facilitate the construction of networks, or social relations among persons who share the same interests, activities and backgrounds in their working and/or real lives.

#### VoIP

The technology that makes it possible for telephone calls to be made by using an Internet connection or a dedicated network that is based on the Internet Protocol.

#### Green IT

Environmental criteria for the assessment and selection of IT equipment and services that consider the latter's impact on the environment over the whole of their life cycles, with consideration given to direct and indirect energy consumption (for primary needs and air conditioning) and the scope for recycling the components.

#### Biometric recognition systems

Systems able to identify persons by recognizing one or more biological or behavioural features.

#### Big data

Vast quantities of data coming from a variety of sources (e.g. social networks, distributed sensors, mobile devices) and which generally require innovative technologies for their processing . They are usually used for advanced multi-dimensional analyses.

#### Web 2.0 applications

Web 2.0 means the recent development of software able to make use of the web more interactive and enhance communications between users and suppliers of services. In the questionnaire, Web 2.0 refers to an interactive approach to connectivity with the bank for operational and informational purposes.

#### Cloud computing

Cloud computing refers to the supply of processing services in which applications, platforms or physical resources are available on the web. Final users do not know the physical location or configuration of the system that provides the processing, storage or data access services. The three models of cloud computing are Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS).

#### Web conferencing

A videoconferencing system running on the Internet with software installed locally or via a web application, with additional functions such as the presentation of slides, the projection of videos, votes among the participants, and web tours, etc.

#### Service Oriented Architecture (SOA)

Service Oriented technologies stress the inclusion of specific functionalities by means of standardized interfaces, so as to use individual applications as components of internal processes or businesses and meet users needs in an integrated and transparent manner.

