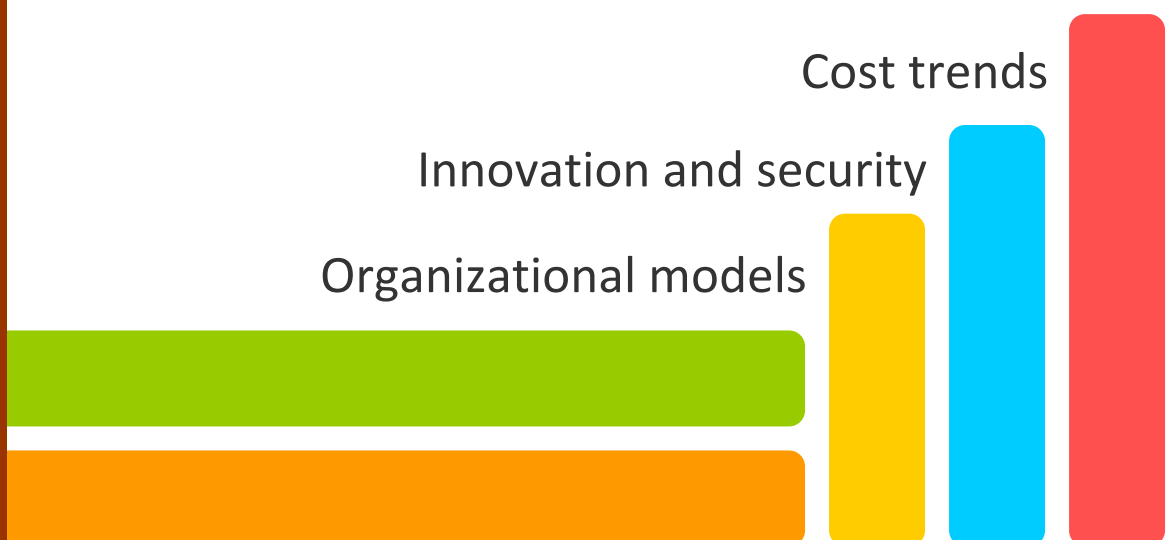


## International Survey

---

The use of IT in European banking groups with international ramifications

Year 2010



## **International Survey**

---

The use of IT in European banking groups with  
international ramifications

2010

CIPA, 2011

**Address**

Banca d'Italia  
Servizio Innovazione e Sviluppo Informatico  
Divisione Sviluppo Automazione Interbancaria  
Centro Donato Menichella  
Largo Guido Carli, 1 – 00044 – Frascati (RM)  
Italy

**Telephone**

+39 06 479 26803

**Fax**

+39 06 479 26801

**Website**

[www.cipa.it](http://www.cipa.it)

This document is available on the CIPA and ABI websites.

The members of the CIPA working group, coordinated by Isabella Vicari (Bank of Italy – CIPA Secretariat) and Romano Stasi (ABI), were: Paola Mostacci, Pier Luigi Polentini, Alessandro Pasciuto, Andrea Gentili, Ernesto Ferrari, Daniela D’Amicis and Francesco Cavallo (Bank of Italy – CIPA Secretariat), Silvia Attanasio (ABI), Antonio Melina and Claudio Paglia (Intesa Sanpaolo), Sebastiano Vita (UniCredit Group), Francesca Mastella and Giovanni Pietrobelli (SGS - Banco Popolare), Marco Bruzzesi and Marco Coda (Banca Sella), Lucia Pastore (Veneto Banca Holding), Luca Brambilla and Christian Altomare (Deutsche Bank - Deutsche Bank AG Group), Carlo Cotroneo (Banca Nazionale del Lavoro - BNP Paribas Group), Paolo Zacco (Cariparma - Crédit Agricole Group), and Pasquale Tedesco (Dexia Crediop - Dexia Credit Local SA Group).

The following also participated as representatives of their respective banking groups: Simone Dominiononi (Barclays Bank PLC), Valeria Crivelli (Banco Bilbao Vizcaya Argentaria), Franco Perini (Credit Suisse), Kristian Braun (Commerzbank AG), Umberto Ortelli (Rabobank), Renato Caviglia (Société Générale SA), Paolo Oliva (The Royal Bank of Scotland), Luigi Chirolli (Banco Santander) and Theresa Mahoney (UBS AG), to whom go our sincere thanks for their valuable contribution.



# 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 increasing presence abroad of the main Italian banking groups and the ever greater presence in Italy of leading foreign banks have created a need for a comparison no longer limited to the national scale. This has led to the “Survey on the use of IT in European banking groups with international ramifications”, conducted jointly with ABI for several years now, each edition of which is enriched with new topics of analysis.

The aim is to provide an overview of the use of IT in the European banking system, with an emphasis not only on the trend and distribution of costs and on organizational strategies and IT governance structures, but also on the choices with regard to technological innovation, use of online channels and IT risk limitation and control.

In the same way as for the national survey, 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)). Each group that participates in the “international” survey receives feedback in the form of its indices compared with the average indices of its peer group.

As previously, the involvement of foreign groups in the 2010 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.

Sandro Appetiti  
CHAIRMAN OF CIPA

Giovanni Sabatini  
GENERAL MANAGER OF ABI

Rome, December 2011



---

# Contents

<b>Summary of the results .....</b>	<b>1</b>
<b>Characteristics of the sample.....</b>	<b>7</b>
<b>Chapter 1. IT costs.....</b>	<b>9</b>
1.1 IT cost trend .....	9
1.2 IT costs according to productive factor and functional area.....	14
1.3 Cash outlays for running and for changing the business.....	16
1.4 Compliance costs .....	18
1.5 Analysis of IT costs by indices .....	19
<b>Chapter 2. Technological innovation and information security.....</b>	<b>25</b>
2.1 Expenditure for technological innovation .....	25
2.2 The new technologies .....	26
2.3 Customer contact channels .....	28
2.4 The cost of IT security and the standards adopted .....	29
2.5 Perceived risk and data protection systems.....	32
<b>Chapter 3. Organizational aspects .....</b>	<b>35</b>
3.1 The geographical distribution of the groups and their IT structures .....	35
3.2 The governance and organizational model of the “IT factory” .....	38
3.3 IT personnel .....	42
<b>Chapter 4. Methodological notes .....</b>	<b>45</b>
4.1 General matters .....	45
4.2 Survey methodology .....	45
4.3 Classification of the groups.....	46
<b>Appendix .....</b>	<b>49</b>





---

# Figures

Figure 1. Banking activity .....	7
Figure 2. Banking activity by nationality of parent company .....	8
Figure 3. Trend of TCO .....	9
Figure 4. Percentage change in TCO in the two years 2009-10.....	10
Figure 5. Forecast of TCO.....	10
Figure 6. Forecast change in TCO by group .....	11
Figure 7. Forecast of TCO by size class .....	11
Figure 8. Actions taken to achieve savings on TCO .....	12
Figure 9. Cross-border integration of the IT system.....	12
Figure 10. Cross-border integration of the IT system by nationality .....	13
Figure 11. Infrastructure integration and optimization .....	13
Figure 12. Infrastructure integration and optimization by nationality .....	14
Figure 13. TCO by productive factor.....	14
Figure 14. TCO by productive factor and nationality.....	15
Figure 15. Cash outlays by functional area.....	15
Figure 16. Cash outlays by functional area and nationality .....	16
Figure 17. Cash outlays: run-the-business vs change-the-business .....	17
Figure 18. “Change” and “business” outlays .....	18
Figure 19. Cash outlays for compliance, by group.....	18
Figure 20. Compliance outlays by type of regulation and nationality.....	19
Figure 21. IT costs as a percentage of the main economic values .....	19
Figure 22. Expected trend in spending for technological innovation.....	25
Figure 23. Technological innovation spending in proportion to cash outlays .....	26
Figure 24. Investment by type of technology .....	26
Figure 25. Investment by type of technology and nationality.....	27
Figure 26. Technological investment by internal function .....	28
Figure 27. Technological investment for customer service.....	28
Figure 28. Banking services by customer contact channel.....	29
Figure 29. The cost of IT security .....	30
Figure 30. Adoption of standards and best practices.....	31
Figure 31. Adoption of standards and best practices by nationality.....	31
Figure 32. Number of standards and best practices adopted .....	32
Figure 33. Perceived risk in terms of expenditure.....	32
Figure 34. Risk mitigation initiatives for telematic services: Internet banking .....	33
Figure 35. Risk mitigation initiatives for telematic services: mobile banking .....	34
Figure 36. Percentage of European and non-European banks.....	35
Figure 37. Percentage distribution of the banks .....	36

---

Figure 38. Percentage of European and non-European IT structures .....	36
Figure 39. Percentage distribution of IT structures .....	37
Figure 40. Geographical distribution of the banks and IT structures .....	37
Figure 41. Average number of structures per group by size .....	38
Figure 42. Location of IT activities .....	38
Figure 43. Location of IT activities: foreign groups.....	39
Figure 44. Location of IT activities: Italian groups .....	39
Figure 45. Dominant organizational model of the “IT factory” .....	40
Figure 46. Dominant organizational model of the “IT factory”, by nationality .....	41
Figure 47. Person to whom the CIO reports .....	41
Figure 48. IT personnel: role and gender.....	42
Figure 49. IT personnel: role and gender by nationality.....	42
Figure 50. IT personnel: role and age .....	43
Figure 51. IT personnel: role and age by nationality .....	43
Figure 52. IT personnel: share of the role.....	44
Figure 53. Standards of reference for IT professionals.....	44
Figure 54. Sample groups by size and main type of business activity .....	48
Figure 55. Actions taken to achieve IT cost savings.....	51
Figure 56. Cross-border integration of IT systems by size.....	51
Figure 57. Infrastructure integration and optimization (by size) .....	51
Figure 58. Cash outlays: run the business vs change the business (by size) .....	52
Figure 59. Cash outlays: run the business vs change the business (by nationality) .....	52
Figure 60. Cash outlays: run the business vs change the business (individual groups) .....	52
Figure 61. Forecast trend of spending on technological innovation (by size).....	53
Figure 62. Risk mitigation initiatives for telematic services: foreign groups.....	53
Figure 63. Risk mitigation initiatives for online services: Italian groups .....	53
Figure 64. Banking activity by size of group.....	54
Figure 65. Person to whom the CIO reports by size of group.....	54

---

# Tables

Table 1. Banking activity .....	8
Table 2. Survey sample by size class and nationality.....	8
Table 3. IT cost indicators and other indicators .....	21
Table 4. IT cost indicators and other indicators, groups classified by nationality .....	22
Table 5. IT cost indicators and other indicators, groups classified by size.....	23
Table 6. Classification of the groups by the nationality of the parent bank .....	46
Table 7. Classification of the groups by size .....	47



---

# Summary of the results

The “Survey on the use of IT in European banking groups with international ramifications” is enriched in 2010 with analytical topics bearing on the economic and organizational aspects, on the pattern of the traditional national survey, with the objective of providing Italian groups that operate in Europe and foreign groups that operate in Italy a broader basis on which to assess their position in IT matters. In particular, detailed examinations of security issues, expenditure on compliance, sourcing modes and IT personnel have been analyzed.

Eighteen groups – five Italian and thirteen foreign – participated in the 2010 survey, the same number as in 2009 but with a different composition of foreign groups. Twelve of the 13 foreign groups are among the top 22 European banking groups by total assets; if the Italian groups are also considered, the number of sample groups in the top 22 rises to 14.

The sample groups as a whole are more or less equally engaged in retail banking and corporate and investment banking, which together account for 83.2% of total activity; they have a smaller presence in private banking (9.2%) and other activities (7.7%)<sup>1</sup>. The Italian groups are more heavily involved in retail banking (59.8%), while in the activity of the foreign groups corporate banking and investment banking on the one hand and retail banking on the other account for roughly equal shares (41.8% and 40.2%, respectively).

Considering the constant sample of 12 groups (8 with a foreign parent company and 4 with an Italian parent company) that supplied data for the 2009 and 2010 financial years, IT costs<sup>2</sup> rose by 3.3% in 2010 and were expected to grow more than twice as fast, by 7.5%, in 2011. The overall trend in 2010 reflected a 5.5% increase declared by the foreign groups and a 2.2% decrease reported by the Italian groups; both components of the sample expected an increase in 2011 (8.8% for the foreign groups and 3.7% for the Italian groups).

For the sample of 16 groups that provided figures on TCO for both 2010 and 2011, the forecasts for 2011 are for another increase: 6.7% overall (3.5% for the Italian groups and 7.3% for the foreign groups). Renegotiation of contracts with the same supplier, consolidation of systems and applications, and rationalization of products and services are the chief means by which the groups achieve cost savings.

---

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

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

---

Cross-border integration of IT systems mainly involves the foreign groups, which have a wider geographical distribution; this activity accounted for 9% of TCO on average, with a high of 20%.

Although the sample composition is different from last year's, the breakdown of IT costs by productive factor is similar. An average of 29.8% of TCO is for services received from third parties; of the remaining 70.2%, group IT staff accounts for 29.5%, software (operating systems and applications) 19.0% and hardware 13.7%. Analyzing the data by nationality of the parent company, significant differences emerge: the Italian groups' staff costs are far lower than those of foreign groups (17.7% against 35.4% of TCO), while their spending on third-party services is considerably higher (36.5% against 26.4%). The differences are mainly due to different patterns of outsourcing.

The distribution of cash outlays<sup>3</sup> by functional area is largely comparable to that in the 2009 survey, in which the parameter was TCO. On average, the operations area accounts for 49.0% of the groups' total IT cash outlays. The Italian groups spend more than the foreign groups on operations (60.4% against 42.6%) and less on support processes (12.0% against 26.5%).

In the 2010 survey the division of the expenditure between run-the-business and change-the-business, was made according to cash outlays in order to include the investment components that truly characterize banks' orientation in IT expenditure. For the eleven groups that responded, 70.1% of cash outlays went to run-the-business and 29.9% to change-the-business expenditures. As to the distribution of IT expenditure between business and functions, 70.2% of cash outlays went to business and 29.8% to functions. The Italian groups display a higher proportion of run-the-business outlays than their foreign counterparts (76.8% against 66.4%); they also spend more on business (77.8% against 65.9%).

Expenditure on compliance as a percentage of total cash outlays varies considerably from group to group, ranging from 1.5% to 15.0%. The largest portions for the entire sample go for compliance with supervisory regulations (30.6%) and with tax/accounting rules (18.3%), with slight differences between foreign and Italian groups.

To complete the analysis, while we are aware the sample examined in the International Survey includes groups of different size, or with different strategic-operational characteristics, cost indicators were calculated to offer useful information on some aspects of IT management for a significant set of European banking groups. In particular, it was found that the cost of IT ownership in relation to other significant economic variables<sup>4</sup> amounts to an average of 0.2% of total assets, 12.8% of operating expenses and 7.9% of gross income, but with rather large variations: total assets, operating expenses and gross income.

Half the groups declared they expected to spend more in 2011 on technological innovation to introduce changes in corporate organization. By nationality of the parent company, 60.0% of the Italian groups expected this item to increase, compared with

---

<sup>3</sup> Defined as current spending plus investment.

<sup>4</sup> All the accounting data are supplied by the survey groups themselves.

---

45.5% of the foreign groups, reversing the situation found in 2009. Expenditure on technological innovation amounted to an average of 4.8% of cash outlays. The situation differs greatly from group to group regardless of nationality.

The investments that banking groups have completed or planned in the various technological fields (contactless, biometric recognition, mobile applications, Web 2.0, business intelligence, cloud computing, VoIP, web conferencing, SOA and green IT) show that all these technologies and instruments are in widespread use at banking groups except biometric and contactless technology, and these too are expected to expand significantly in 2012-13. Some technological solutions, such as VoIP, business intelligence and green IT, have reached a state of maturity such that by 2013 they will be in use at all the groups surveyed. Breaking the sample down by nationality, one finds only two significant differences between Italian- and foreign-headed groups: contactless technology, where 60% of the Italian groups had already made investments compared with just 20% of the foreign groups, and cloud computing, quite common among the foreign groups (50%) but not among the Italians (20%)

Innovation investment in customer services is less widespread, save for mobile applications, which 93.4% of the sample groups will have installed by 2013, and business intelligence (80%). Contactless technology, relatively rare internally, will be installed for customer services by the majority of the groups. Its incidence will more than double from 26.7% of the sample in 2011 to 60% in 2013, in connection with the increasing importance of micropayment applications for banking groups in the coming years.

The 2010 survey analyzes the forecasts of the use of customer contact channels, providing an overview of functional applications and their channels that is comparable with the analysis set forth in the 2010 Technology Survey. The findings of the Technology Survey are broadly confirmed. There will be increased use of the “digital” channels (Internet and mobile) for all types of banking service. The use of the traditional channels of contact with customers, by contrast, is seen as steady or else in constant decline.

Security issues and IT safeguards are a topic of great interest to European banking groups, especially given the widespread use of information technology throughout the industry. The survey groups reported that security expenditure accounted for an average of 2.5% of TCO. With regard to the use of standards and best practices, nearly all the groups already had adopted or expected to adopt a group policy (93.8%), but always flanked by other norms as well. The standards most commonly applied for IT security are ISO 27001 and ISO 27002 (adopted respectively by 75% and 62.5% of the sample), followed by PCI/DSS, OWASP and COBIT, all in use at half the groups.

There are significant differences according to nationality. The ISO standards (27001, 27002, 27005) have already been adopted or are in course of adoption by nearly all the foreign groups but only some of the Italian groups. This pattern depends in part on size, in that the foreign groups are larger, and larger groups tend to adopt more standards than smaller ones.

Again on security, the general perception of risk in specific operating environments was captured on the basis of the economic outlay sustained for each. The foreign groups posed the greatest risk on stolen or compromised credentials (for both corporate and retail customers), while Italian groups tended to spend more resources to face attack



---

scenarios, both external (like Viruses, Denial of Service, etc.) and internal (like malware on clients).

All the groups have taken initiatives to lower the risk of fraud in the provision of telematic banking services. The initiatives most commonly found are aimed at raising customer awareness of the risks of online operations and enabling customers to defend themselves from attacks by adopting suitable rules of conduct and instruments. A larger number of groups take risk mitigation initiatives for the Internet channel, which is more mature than the mobile channel.

With regard to organizational aspects, the survey examines the geographical location of the groups' banks and IT structures. Overall, the banks are divided evenly between European (57% of the total) and non-European sites (43% of the total). In general, the groups with a foreign parent company have banks distributed throughout the world, while the banks of the Italian groups are concentrated in Europe. The distribution of IT structures reflects that of the banks. The IT centres of groups with a foreign parent company are basically distributed evenly among the European and non-European regions (56.2% of the structures, as against 43.8%). By contrast, less than 10% of the IT structures of groups with an Italian parent company are located outside of Europe; their IT structures are concentrated predominantly in Mediterranean Europe and Eastern Europe.

For foreign groups there is a greater correspondence between the number of banks and IT structures for each region, compared with what happens for Italian groups. This phenomenon is consistent with the results regarding the sourcing choices of the groups. While the Italian groups outsource their IT activities to instrumental companies (or, more generally, to non-banking members of the group), the foreign groups tend instead to concentrate their IT activities in banking components.

All the foreign groups locate their activities relating to applications and central systems at their own banking components, 81.8% of the groups do the same for transmission systems and 72.7% for peripheral systems. By comparison, on the basis of the survey sample recourse to instrumental companies appears to be an Italian model (with the 80% of the groups having one).

For 72.2% of the groups, the dominant organizational model of the "IT factory" is the centralized one (with or without competence centres). With regard to IT governance, 38.9% of the respondents indicated that the chief information officer reports to the chief operational officer.

In order to standardize the communication of data on IT personnel by the groups taking part in the survey, three roles were identified: clerical staff, middle managers and senior managers. Analyzing the distribution of IT personnel by gender and role, it can be seen that the rate of female participation decreases as workers' grades increase, from 32.3% among clerical staff to 16.2% among senior managers. Examining the same breakdown separately for Italian and foreign groups, for each professional role the percentage of women is always higher in the foreign groups.

From the perspective of age, 32.2% of the employees are younger than 35, 51.5% are aged from 35 to 50, and 16.3% are over 50. A comparison by parent company nationality reveals some peculiarities. The youngest cohort in the Italian groups (under age 35) is

---

reduced to a minimum moving from the role of clerical staff (42.4%) to middle management (2.9%), and disappears entirely in senior management. The clerical staff of the groups with an Italian parent company includes few workers over 50 years of age (7.4%), less than half the proportion in the groups with a foreign parent company (16.3%).

Although still fairly uncommon, some groups are adopting standards of reference for IT competences and professional profiles, in particular for the hiring of staff (mainly EUCIP, e-CF and ECDL) and for training (ECDL and EUCIP).



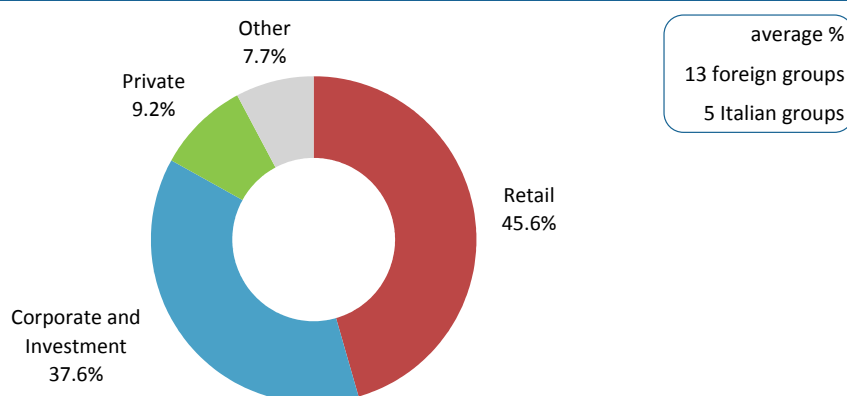
# Characteristics of the sample

Eighteen groups – five Italian and thirteen foreign – participated in the 2010 survey, the same number as in 2009 but with a different composition of foreign groups (see Methodological notes).

Twelve of the 13 foreign groups are among the top 22 European banking groups by total assets; if the Italian groups are also considered, the number of sample groups in the top 22 rises to 14.

The sample groups as a whole are more or less equally engaged in retail banking and corporate and investment banking, which together account for 83.2% of total activity (Figure 1). The remaining activities are divided between private banking (declared by 16 groups and accounting on average for 9.2% of total operations) and other activities<sup>5</sup> (7.7%, declared by 11 groups).

**Figure 1. Banking activity**



Analyzing the same results according to parent company nationality, the groups with an Italian parent company are more heavily involved in retail banking (59.8%) than in corporate banking and investment banking (26.6%), while in the activity of the foreign groups corporate banking and investment banking on the one hand and retail banking on the other account for roughly equal shares (41.8% and 40.2%, respectively). The share of operations in private banking and “other” activities is broadly similar in the two components (Figure 2).

<sup>5</sup> The sample groups specified a large number of activities besides traditional banking, including asset management, insurance, securities services, consumer finance, factoring, leasing, public finance, and real estate.

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

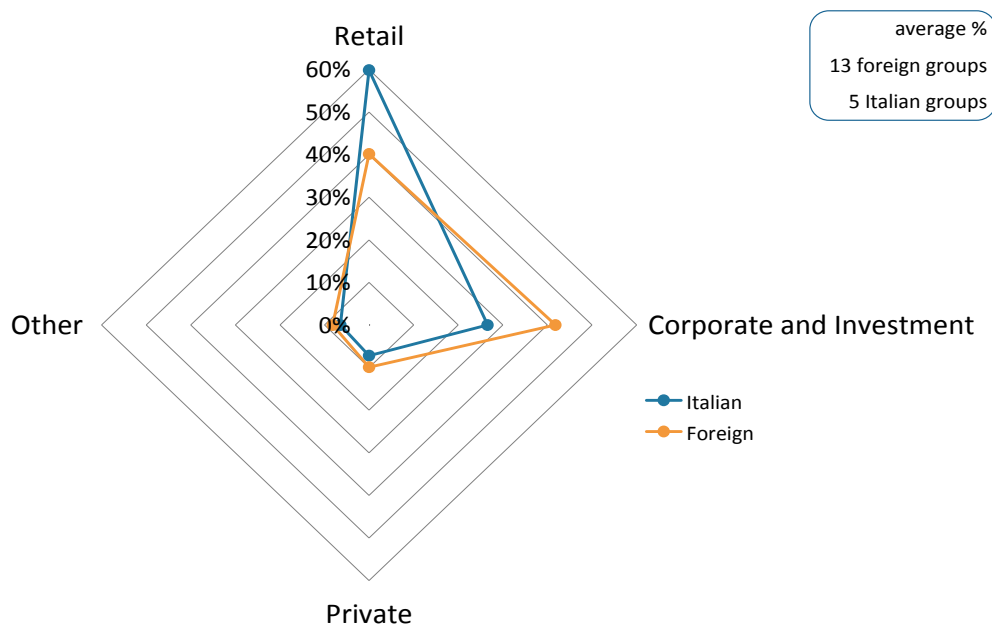


Table 1 shows that all the sample groups, regardless of nationality, are mainly involved in the banking segments, and that two thirds of them also operate in other market segments.

**Table 1. Banking activity**

	Number	Retail	Corporate and Investment	Private	Other
<b>Italian</b>	5	5	5	5	3
<b>Foreign</b>	13	12	13	11	8
<b>All</b>	18	17	18	16	11

The sample, classified by size, consisted of 8 major groups, 5 large groups and 5 “other” groups. By nationality of the parent company, it consisted of 13 foreign and 5 Italian groups (see Methodological notes).

Table 2 shows the complete sample of banking groups, broken down by size class and nationality of the parent company.

**Table 2. Survey sample by size class and nationality**

	Italian	Foreign
<b>Major</b>	0	8
<b>Large</b>	2	3
<b>Other</b>	3	2

# Chapter 1. IT costs

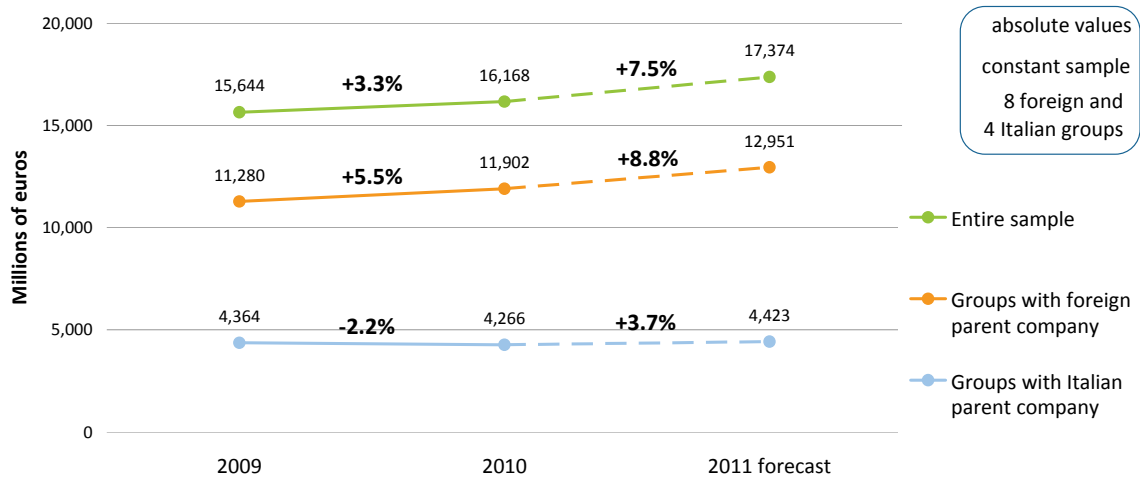
This chapter analyzes the economic profile of the sample groups in terms of the overall trend of IT costs, the steps taken to obtain cost savings and expenditures for IT system integration. It also considers IT spending by productive factor and functional area, with a detailed examination of compliance.

## 1.1 IT cost trend

IT costs are an important aspect of the surveys that CIPA and ABI periodically carry out on banking groups. In the International Survey, IT costs are measured in terms of the total cost of ownership (TCO) and cash outlays<sup>6</sup>, based on the accounts at 31 December 2010 and forecasts for the 2011 financial year.

Considering the constant sample of twelve groups<sup>7</sup> that supplied data for the 2010 and 2009 financial years, IT costs rose by 3.3% in 2010 and were expected to grow more than twice as fast, by 7.5%, in 2011 (Figure 3).

**Figure 3. Trend of TCO**



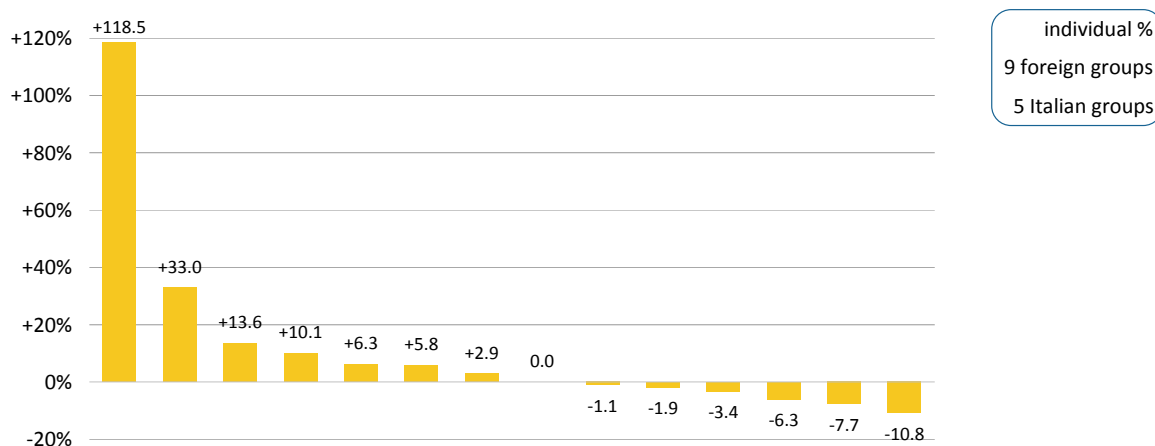
<sup>6</sup> In this survey, TCO is defined as current spending plus depreciation/amortization, cash outlays as current spending plus investment.

<sup>7</sup> Eight groups with a foreign parent company and four with an Italian parent company.

The overall trend in 2010 reflected an increase of 5.5% declared by the foreign groups and a decrease of 2.2% for the Italian groups; both the foreign and the Italian groups forecast an increase in 2011 (8.8% and 3.7%, respectively).

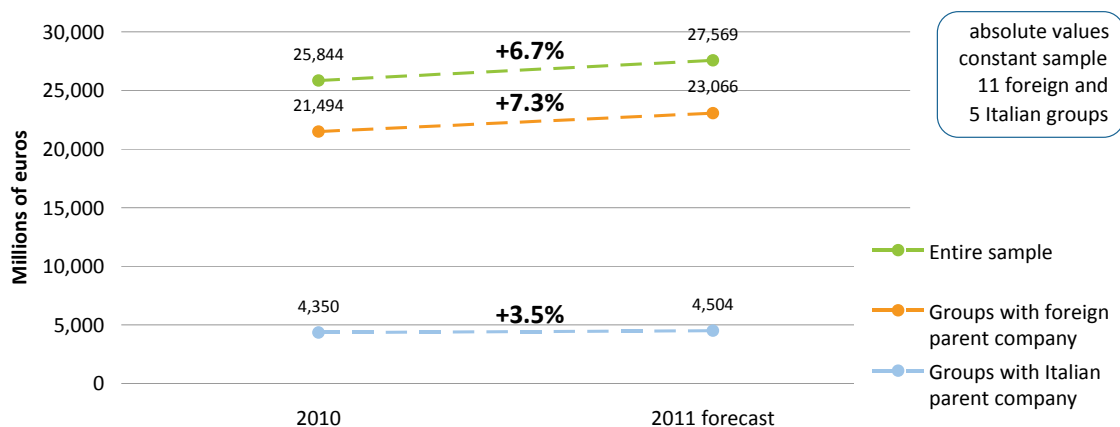
Groups that provided the costs for both financial years but whose trend in IT TCO showed a discontinuity due to mergers in 2010 were omitted from the analysis<sup>8</sup>. Figure 4, which shows the change in expenditure for each group, includes the two groups (one foreign, one Italian) that were not considered in the analysis of Figure 3.

**Figure 4. Percentage change in TCO in the two years 2009-10**



For the sample of 16 groups that provided data on TCO for both 2010 and 2011, the forecasts for 2011 indicated there would be a fresh increase of 6.7%, the result of a rise of 3.5% for the Italian groups and 7.3% for the foreign groups (Figure 5).

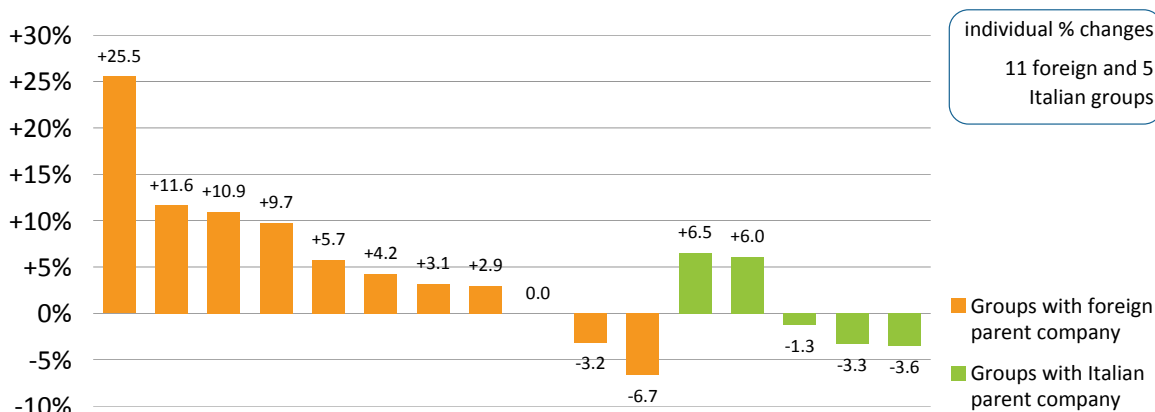
**Figure 5. Forecast of TCO**



Turning to the individual expenditure forecasts for 2011 for each of the 16 groups, distinguished by nationality of the parent company, three of the five Italian groups and two of the 11 foreign groups expected their IT costs to decline (Figure 6).

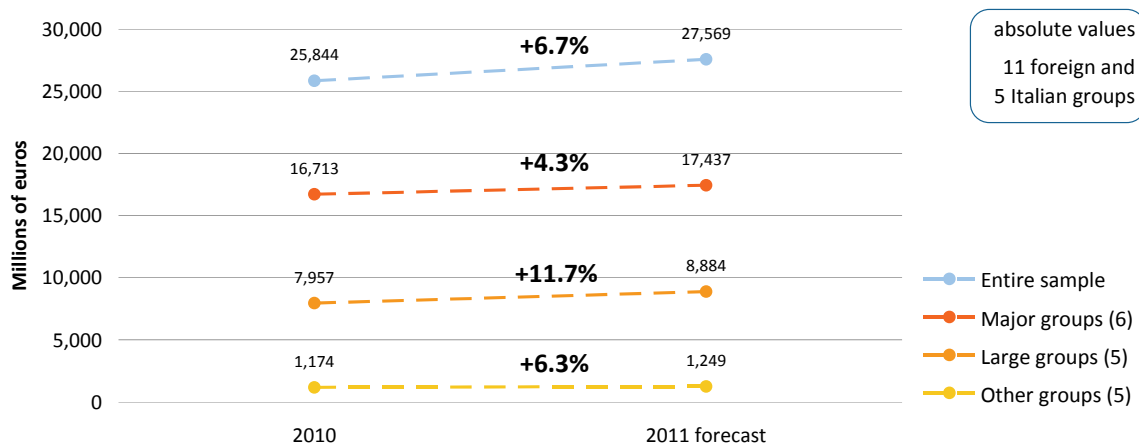
<sup>8</sup> The economic data refer to 31 December 2010.

Figure 6. Forecast change in TCO by group



Analyzing the same sample of groups broken down by size class, we find that the Large groups forecast the steepest IT cost increase, equal to 11.7%, followed by 6.3% for the Other groups and 4.3% for the Major groups (Figure 7).

Figure 7. Forecast of TCO by size class



The analysis of the principal methods used to achieve cost savings, already performed for the Italian banking groups covered by the 2010 Economic Survey, was replicated for the International Survey<sup>9</sup>.

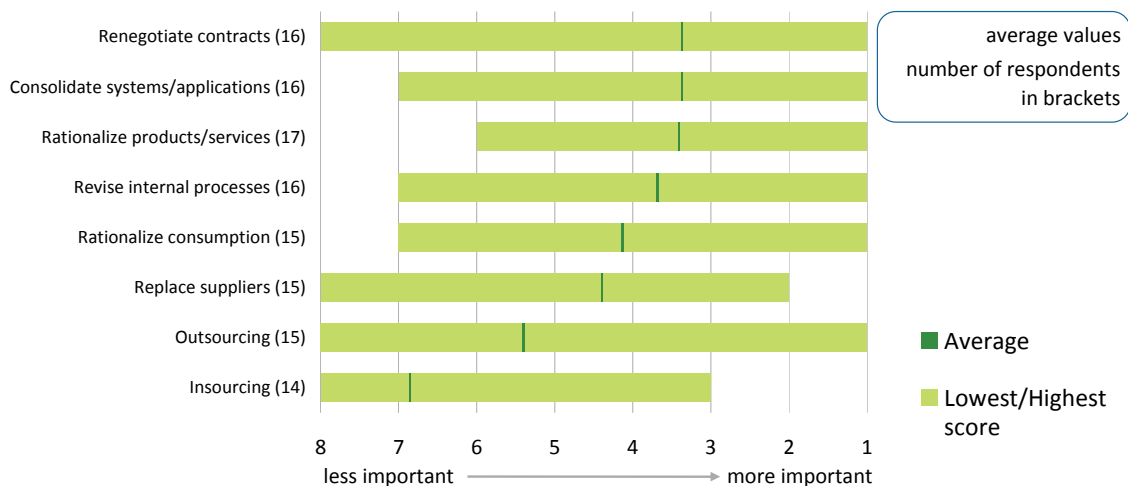
Renegotiation of contracts with the same supplier, consolidation of systems and applications, and rationalization of products and services are the chief means of achieving savings; the revision of internal processes, rationalization of consumption and replacement of suppliers rank in the middle, while outsourcing and insourcing are the least important.

<sup>9</sup> Respondents were asked to rank a set of commonly taken cost saving measures by importance, assigning a score of 1 to the most important; they did not have to assign a score to measures they had not implemented.



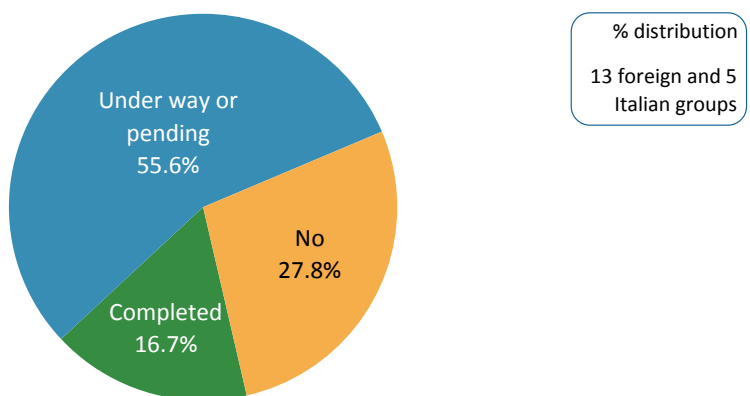
These results are similar to those of the 2010 Economic Survey<sup>10</sup> as regards the importance of contract renegotiation and the relative unimportance of the choices of sourcing (both outsourcing and insourcing); in particular, insourcing is considered to have a very low impact as part of strategies to obtain cost savings (Figure 8; Figure 55 in the Appendix).

**Figure 8. Actions taken to achieve savings on TCO**



Given the cross-border compass of the sample groups<sup>11</sup>, the survey investigates the needs for integration of the IT systems of their banking components. Three of the 18 groups declared they had completed cross-border integration in 2010, 10 had such activities under way or had planned them, and the remaining 5 had neither undertaken nor envisaged any activity of this kind.

**Figure 9. Cross-border integration of the IT system**

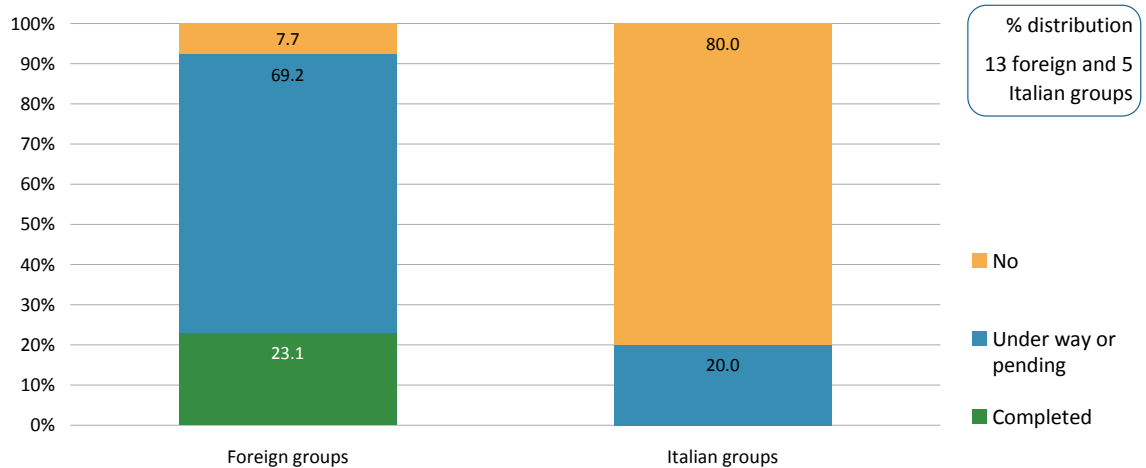


<sup>10</sup> Rilevazione dello stato dell'automazione del sistema creditizio – Profili economici e organizzativi – 2010, Chapter 1 – “Andamento dei costi IT”, p. 17.

<sup>11</sup> The geographical distribution of the groups’ banks and IT structures is examined in Chapter 3.

The breakdown by parent company nationality shows that that cross-border integration of IT systems mainly involves the foreign groups, consistently with their wider geographical distribution (Figure 10).

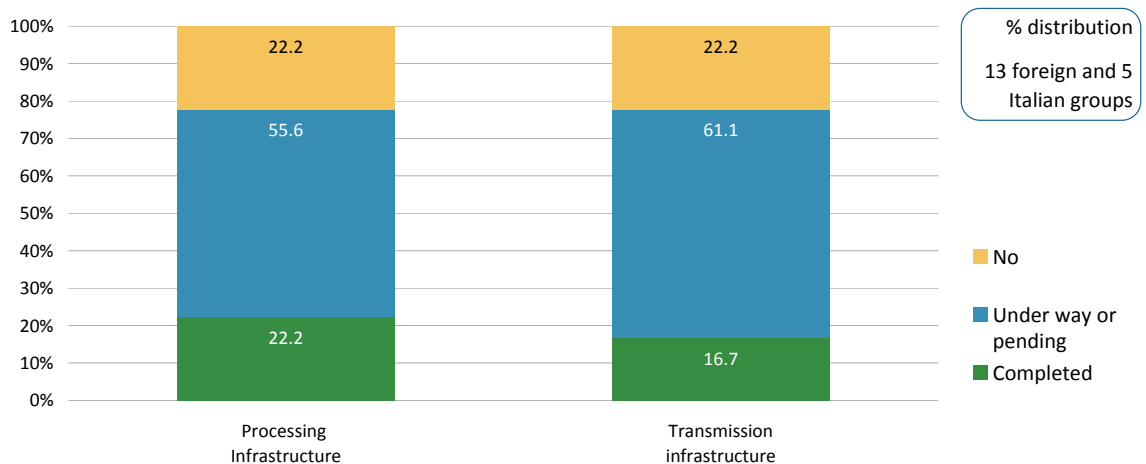
**Figure 10. Cross-border integration of the IT system by nationality**



For the foreign groups, integration activities accounted for 9% of TCO on average, as high as 20%.

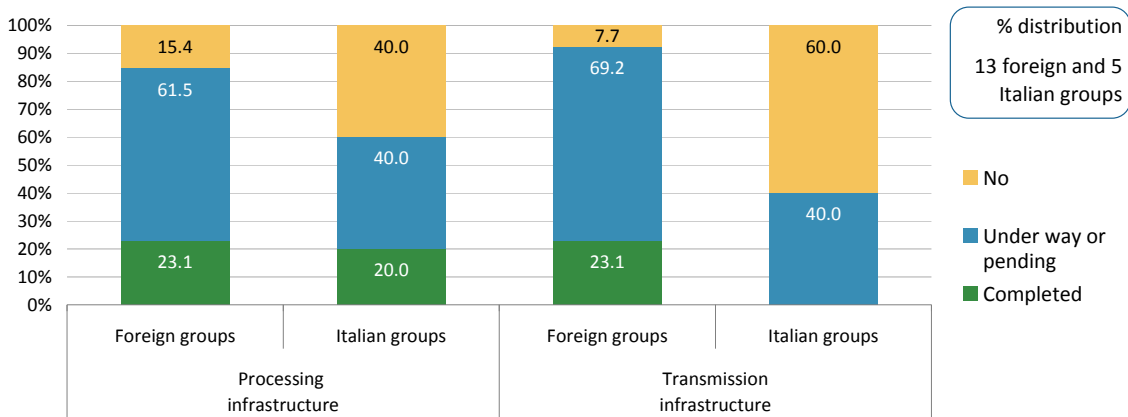
Examining integration by type of system and without restriction to the cross-border field, the differences between transmission infrastructure and processing infrastructure integration are slight; most of the groups reported integration for both types of infrastructure (Figure 11).

**Figure 11. Infrastructure integration and optimization**



As with cross-border integration, processing and transmission infrastructure integration activities are more commonly found among the groups with a foreign parent company: 84.6% of these declared they had completed or planned the integration of processing infrastructure and 92.3% that of transmission infrastructure (Figure 12).

**Figure 12. Infrastructure integration and optimization by nationality**

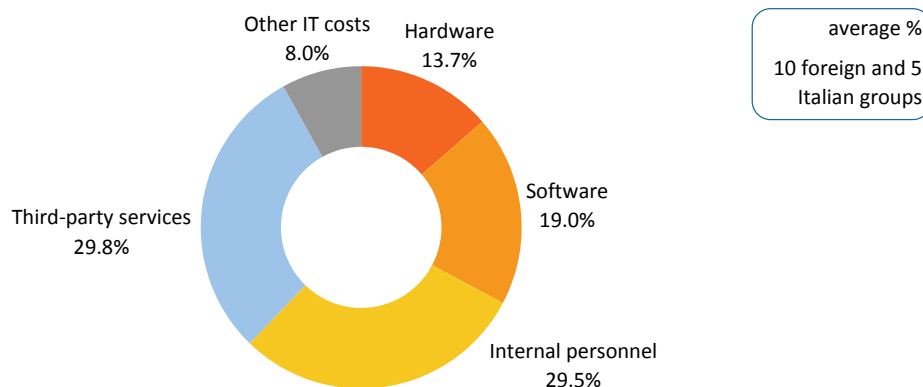


Group size is an important discriminator in terms of cross-border integration of the IT system: while for all large groups integration activities are under way, 80% of Other groups don't even foresee them (Figure 56 in the Appendix). For what regards integration under way for infrastructures, Large and Major groups behave more similarly than Other groups do, for both the processing infrastructure (60-80%) and the transmission infrastructure (75-100%) (Figure 57 in the Appendix).

### 1.2 IT costs according to productive factor and functional area

Although the sample composition is different from last year's, the breakdown of IT costs by productive factor is similar. On average, 29.8% of the TCO consisted in the cost of services from outside the group<sup>12</sup> and the remaining 70.2% was divided among IT staff (29.5%), software<sup>13</sup> (19.0%) and hardware (13.7%), and other IT expenditures (8.0%) (Figure 13).

**Figure 13. TCO by productive factor**



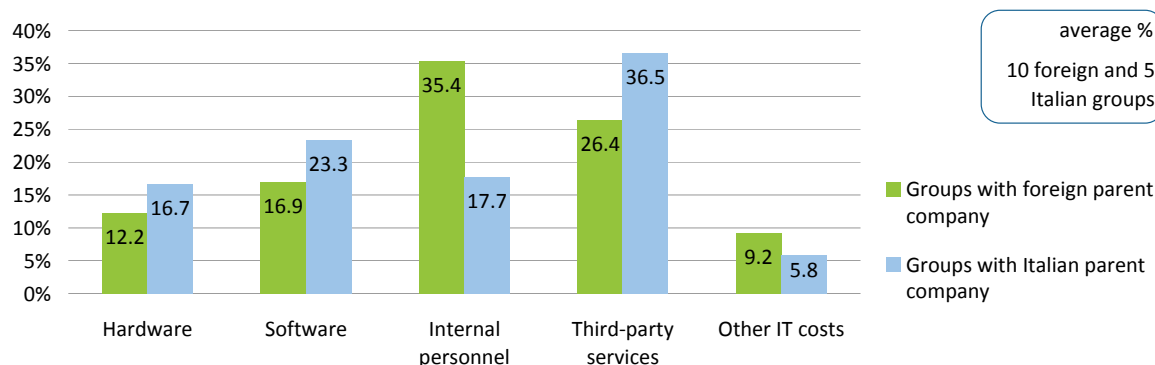
By nationality (Figure 14), the Italian groups' internal personnel costs are far lower than those of foreign groups (17.7% as against 35.4% of TCO). Conversely, they spend relatively

<sup>12</sup> Outsourcing, facility management, external personnel and consultancy services.

<sup>13</sup> Purchased system software and applications software.

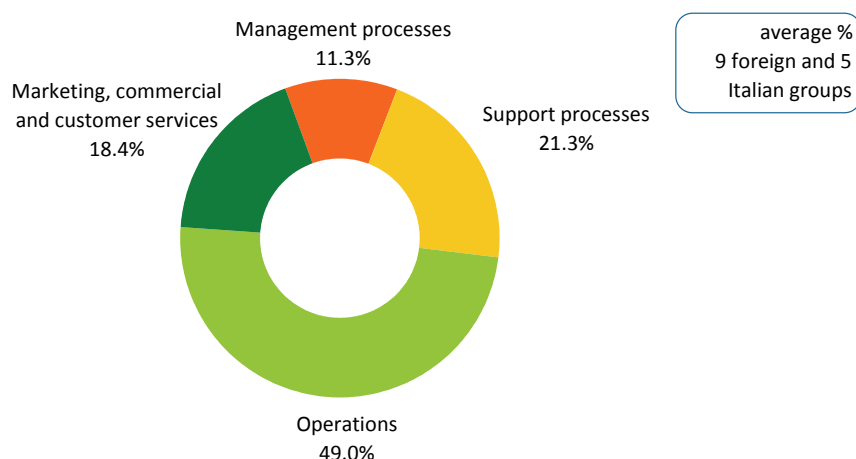
more on software (23.3% against 16.9%), third-party services (36.5% against 26.4%) and hardware (16.7% against 12.2%). The difference, which is especially marked for IT staff and third-party services, reflects different patterns of sourcing<sup>14</sup>.

**Figure 14. TCO by productive factor and nationality**



By functional area<sup>15</sup>, the distribution in terms of “cash outlays” is largely comparable to that in the 2009 survey, in which the parameter was TCO. On average, the operations area accounts for 49.0% of the groups’ total IT cash outlays (Figure 15).

**Figure 15. Cash outlays by functional area**



<sup>14</sup> See Section 3.2.

<sup>15</sup> For the sake of homogeneity, reference was made for the classification of the operational/business areas to the taxonomy of banking processes adopted by ABI Lab. The functions are those of the ABI Lab classification of banking processes. The “Operations” area comprises credit, foreign sector, finance and treasury, payments and receipts, plastic money, other applications. “Marketing, sales and customer service” covers e-banking (ATMs, phone banking, call centers, internet banking/trading on line, corporate banking, mobile banking) and customer service. “Management” comprises management, auditing, compliance, risk management. “Support services” comprises administration and accounting, help desk, reporting to supervisory bodies, human resources, internal organization, IT process management, other services.

Examining the national breakdown more closely, we see that the Italian groups spend more on operations<sup>16</sup> (60.4% compared with 42.6% for foreign groups) and less on support processes (12.0% against 26.5%) (Figure 16).

**Figure 16. Cash outlays by functional area and nationality**



### 1.3 Cash outlays for running and for changing the business

Like the 2010 National and International Surveys, this year's survey breaks cash outlays down into run-the-business<sup>17</sup> and change-the-business<sup>18</sup> expenses, as another element for comparing Italian with other European banking groups. This division was made according to cash outlays rather than TCO<sup>19</sup> in order to include the investment components that truly characterize banks' orientation in IT expenditure. The analysis was performed by quantifying the percentage of cash outlays going to each business area and function, broken down into "run" and "change"<sup>20</sup>.

Overall, for the eleven groups that responded, 70.1% of cash outlays went to run-the-business and 29.9% to change-the-business expenditures. As to the distribution of IT expenditure between business and functions, 70.2% of cash outlays went to business and 29.8% to functions.

<sup>16</sup> The 2010 Economic Survey confirms the distinctive pattern for Italian groups, for which operations accounted for 58.6% of cash outlays.

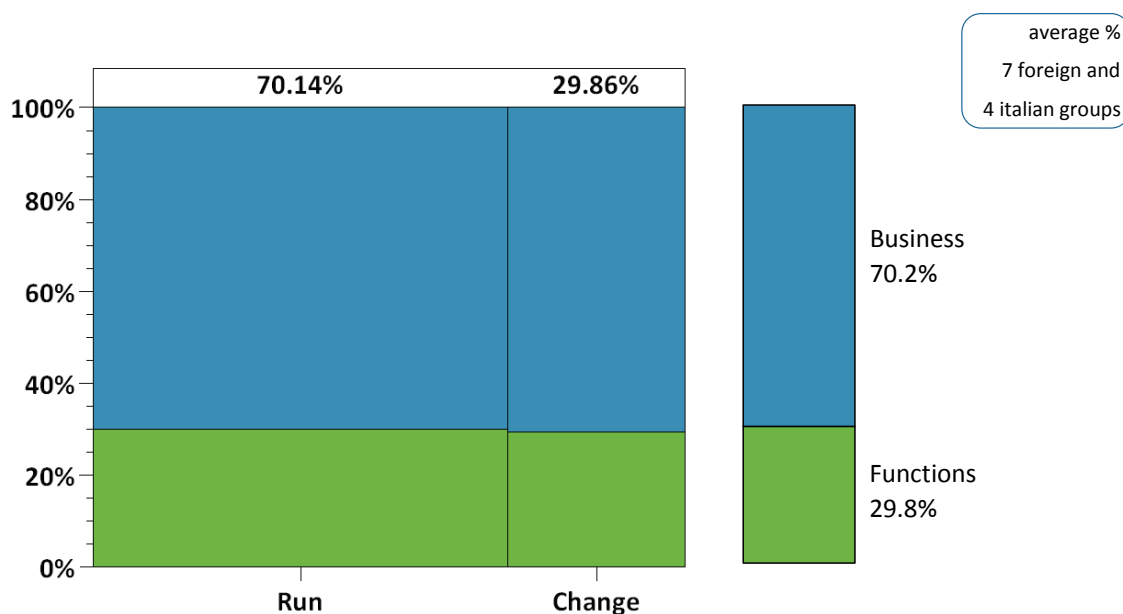
<sup>17</sup> Maintaining current operations.

<sup>18</sup> Upgrading and innovating IT systems in support of banking operations, including evolutionary maintenance.

<sup>19</sup> "Survey on the use of IT in European banking groups with international ramifications, 2009", Section 2.2, p. 25.

<sup>20</sup> "Business" means the bank's core business (operations plus marketing, commercial processes and customer service). "Functions" means support activities (management and support processes).

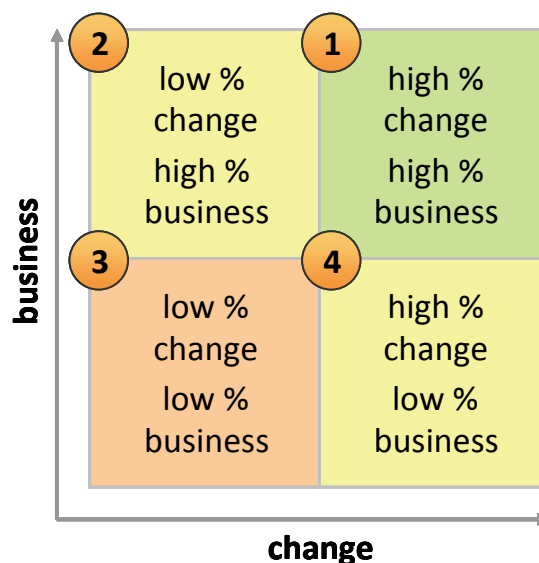
Figure 17. Cash outlays: run-the-business vs change-the-business



Distinguishing this breakdown according to the parent bank's nationality, the Italian groups display a higher proportion of run-the-business outlays than their foreign counterparts (76.8% against 66.4%); they also spend more on business (77.8% against 65.9%) (Figure 59 in the Appendix).

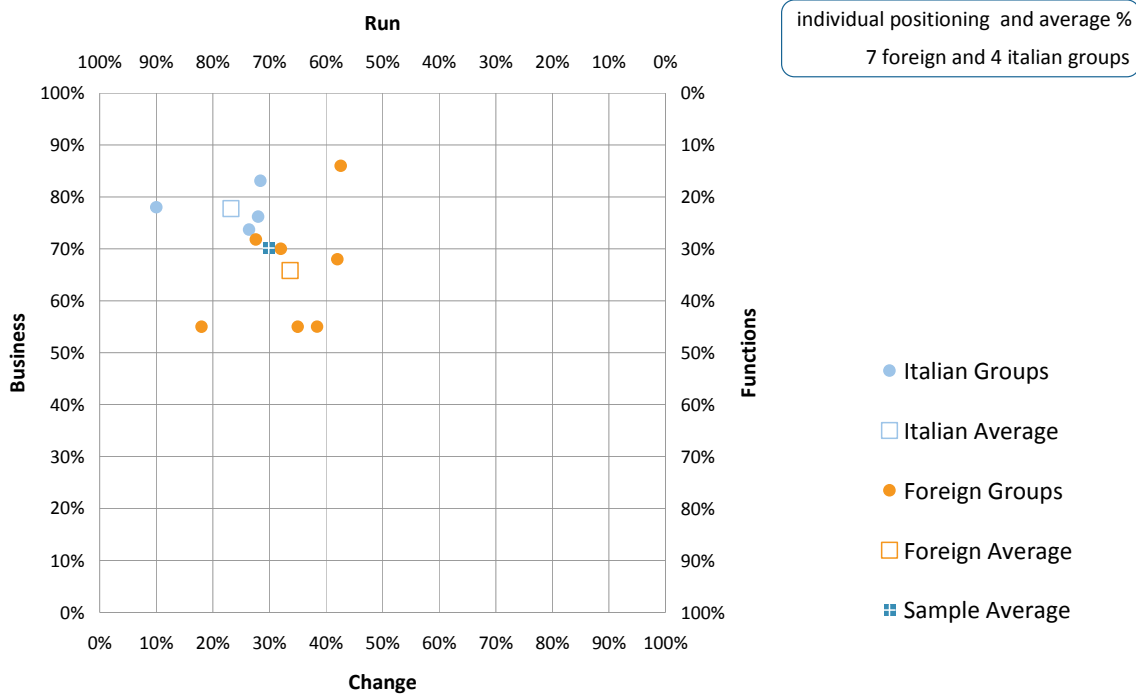
Figure 18 shows how the single groups are positioned, charting the percentages of "business" and "change" in a four-part grid, as diagrammed: the upper right quadrant (1) corresponds to shares of cash outlays for both change and business of more than 50%, the lower left (3) to shares of less than 50% for each. The transverse quadrants (2) and (4) correspond to situations in which one share is higher and the other lower than 50%.

All our sample groups are in quadrant 2, meaning that change expenditure is less than 50% and business outlays greater than 50%.



At the same time, we find that the "change" percentage of the Italian groups is always below the sample average, that of "business" always above it. The same analysis, but with a size breakdown, is included in the Appendix (Figure 60).

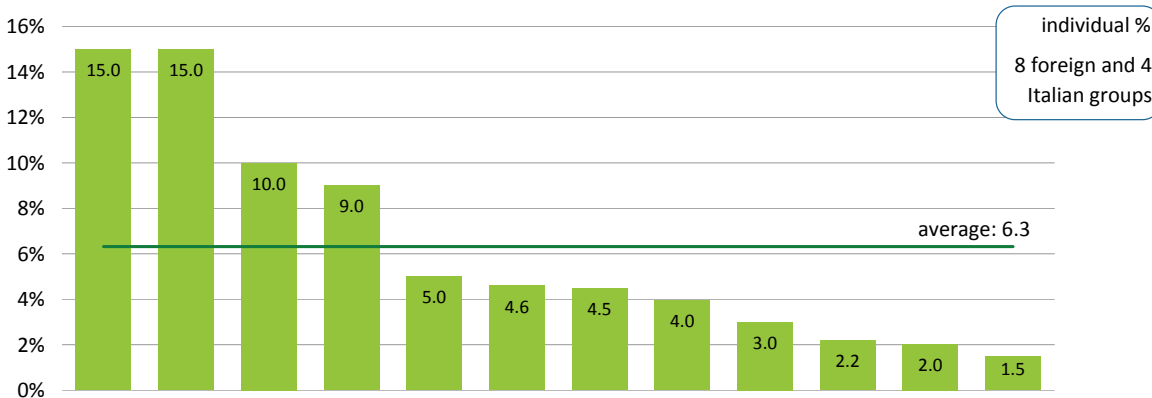
Figure 18. “Change” and “business” outlays



### 1.4 Compliance costs

The economic resources that a banking group must allocate to adapting its procedures to the national regulations are, by definition, not available for business development. Group by group, situations differ considerably. The share of cash outlays going to cover compliance costs ranges from 1.5% to 15.0% (Figure 19).

Figure 19. Cash outlays for compliance, by group

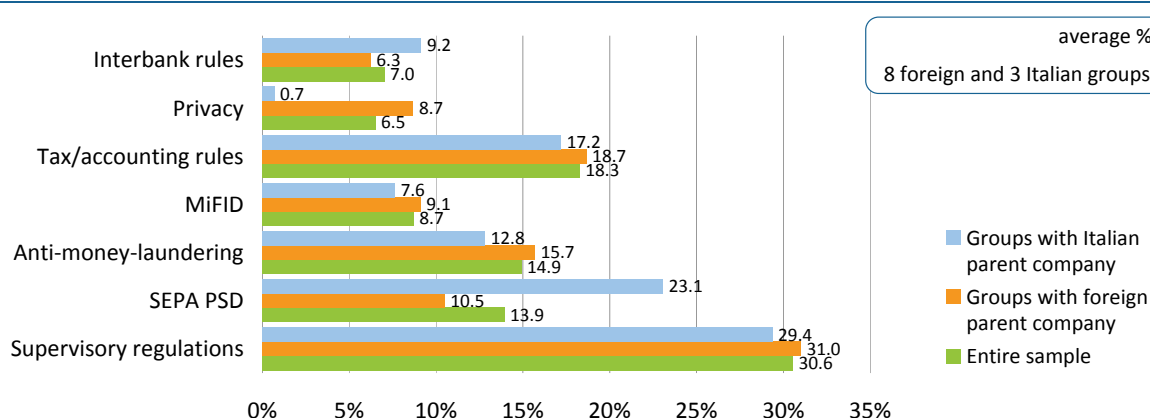


Disaggregating IT compliance spending by type of regulation, we find that on average the largest portions of the outlays go for compliance with supervisory regulations (30.6% for the entire sample, 24.9% for Italian groups and 31.0% for foreign groups) and with tax/accounting rules (18.3% for the sample, 17.2% for Italian and 18.7% for foreign

groups). The rest, in decreasing order of importance, goes for anti-money-laundering compliance, SEPA/Payment Services Directive, and MiFID (Figure 20).

By nationality, clear differences emerge only with respect to two types of compliance action. The Italian groups allocate more than twice as much of their cash outlays as the foreign groups to SEPA/PSD compliance (23.1% against 10.5%) and much less to privacy compliance (0.7% against 8.7%).

**Figure 20. Compliance outlays by type of regulation and nationality**

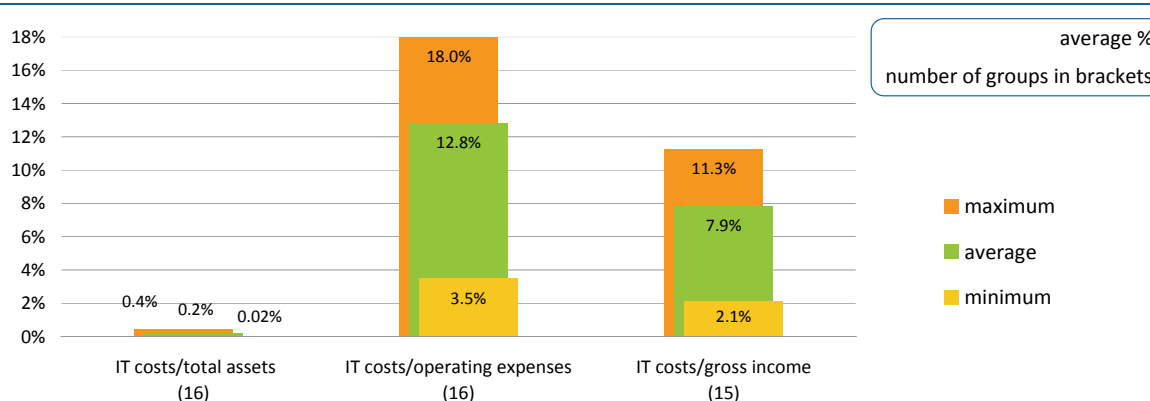


## 1.5 Analysis of IT costs by indices

In analyzing the economic aspect of IT, it was considered of interest to assess the total cost of IT ownership in relation to other significant economic variables: total assets, operating expenses and gross income<sup>21</sup>.

The IT costs of the sample – excluding the two groups that did not provide accounting data – amount to an average of 0.2% of total assets, 12.8% of operating expenses and 7.9% of gross income, but with rather large variations (Figure 21).

**Figure 21. IT costs as a percentage of the main economic values**



<sup>21</sup> All the accounting data are supplied by the survey groups themselves.



While we are aware the sample examined in the International Survey includes groups of different size, or with different strategic-operational characteristics, we believe the indicators offer useful information on some aspects of IT management for a significant set of European banking groups.

For greater consistency of the comparative analysis, the data were processed for the entire sample (Table 3), divided by the nationality of the parent bank (Table 4) and by size (Table 5).

Table 3. IT cost indicators and other indicators

IT cost indicators	Number of groups	Average	Variation coefficient
IT costs/Total assets (‰)	16	1.9	55.5%
IT costs/Operating expenses (%)	16	12.8	29.8%
IT costs/Gross income (%)	15	7.9	34.8%
IT costs per employee excluding IT staff ('000s of euros)	13	19.7	74.6%
Other Indicators	Number of groups	Average	Variation coefficient
IT employees/Total employees (%)	14	6.6	67.0%
Operating expenses /Total assets (%)	18	1.5	40.1%
Gross income /Total assets (%)	18	2.2	47.5%
Cost-income (%)	16	61.4	20.1%

Table 4. IT cost indicators and other indicators, groups classified by nationality

Indicators	Italian groups		Foreign groups	
	Average	Variation coefficient	Average	Variation coefficient
IT cost indicators	5	35.6%	11	59.8%
	5	20.5%	11	34.4%
	5	16.5%	10	42.8%
	5	10.4%	8	79.6%
Other indicators	Italian groups		Foreign groups	
	Average	Variation coefficient	Average	Variation coefficient
	5	60.2%	9	62.5%
	5	29.8%	13	38.9%
	5	20.7%	13	54.6%
	5	11.4%	11	23.5%
	5	11.4%	11	23.5%

Table 5. IT cost indicators and other indicators, groups classified by size

Indicators	Major groups		Large groups		Other groups				
	Average	Variation coefficient	Average	Variation coefficient	Average	Variation coefficient			
IT costs/Total assets (%)	6	1.7	39.3%	5	2.1	53.8%	5	2.0	75.7%
IT costs/Operating expenses (%)	6	13.6	25.8%	5	12.7	41.2%	5	11.9	26.1%
IT costs/Gross income (%)	5	8.4	28.0%	5	8.2	42.2%	5	7.0	38.7%
IT costs per employee excluding IT staff ('000s of euros)	3	19.9	34.3%	5	24.2	93.4%	5	14.9	49.5%
<b>Other indicators</b>	<b>Major groups</b>		<b>Large groups</b>		<b>Other groups</b>				
	<b>Average</b>	<b>Variation coefficient</b>	<b>Average</b>	<b>Variation coefficient</b>	<b>Average</b>	<b>Variation coefficient</b>			
IT employees/Total employees (%)	4	5.4	59.5%	5	8.4	68.9%	5	5.8	69.4%
Operating expenses /Total assets (%)	8	1.3	22.3%	5	1.6	30.5%	5	1.7	59.3%
Gross income /Total assets (%)	8	1.8	52.0%	5	2.4	23.9%	5	2.8	53.0%
Cost-income (%)	6	61.0	21.5%	5	64.4	12.8%	5	58.7	28.0%



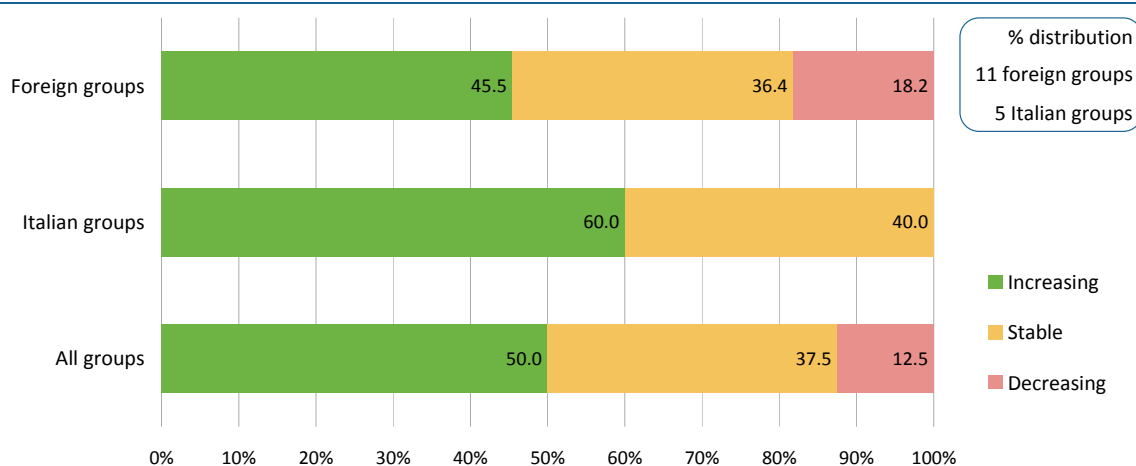
## Chapter 2. Technological innovation and information security

In order to describe the sample banks' drive for innovation, we have examined the concept in terms of technological "frontier", i.e. efforts to alter the bank's organization and functions (not just to renew existing procedures and equipment). The aim is to highlight the pro-active nature of the IT function and its ability to foster the exploitation of new technology.

### 2.1 Expenditure for technological innovation

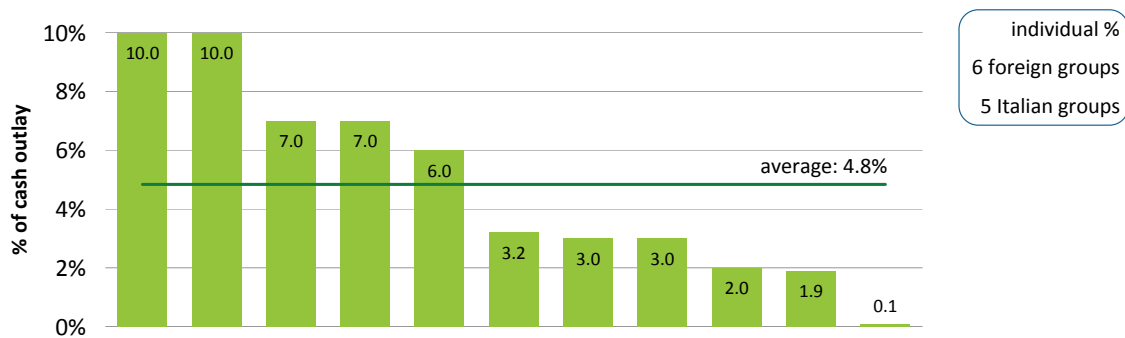
The groups surveyed were asked about the trend in spending on new technology. Half of the respondents expected an increase in 2011. By nationality of the parent company, 60% of the Italian groups expected this item to increase, compared with 45.5% of the foreign groups, reversing the situation found in 2009 (Figure 22).

**Figure 22. Expected trend in spending for technological innovation**



Expenditure on technological innovation amounts to an average of 4.8% of cash outlays. The situation differs greatly from group to group, but overall the Italian groups report technology spending averaging 4.7% of total cash outlays, foreign groups 5.0% (Figure 23).

**Figure 23. Technological innovation spending in proportion to cash outlays**



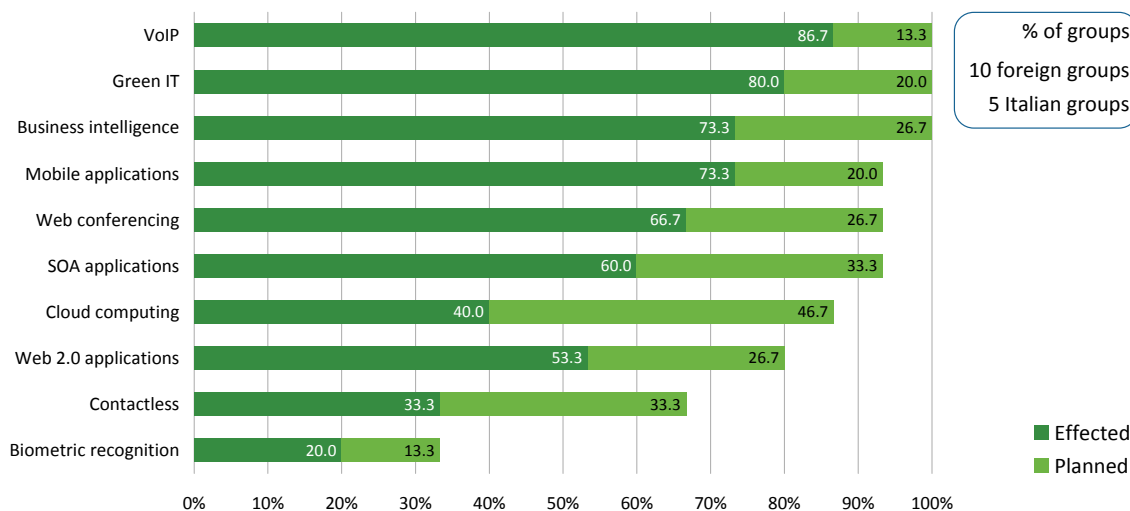
## 2.2 The new technologies

Again this year the respondents were asked whether they had invested or expected to invest in specific types of new technologies: contactless, biometric recognition, mobile and Web 2.0 applications, business intelligence and cloud computing, plus infrastructural designs such as VoIP, web conferencing, SOA applications and green IT<sup>22</sup>.

Here we show only the percentage of respondents having invested (or expecting to invest) in each technology, independently from the amount.

Considering adoption of the various technologies independently of their planned use (internal function or customer service), it is clear that all these technologies and instruments are in widespread use at banking groups except for biometric and contactless technology, and these too are expected to expand significantly in 2012-13 (Figure 24).

**Figure 24. Investment by type of technology**

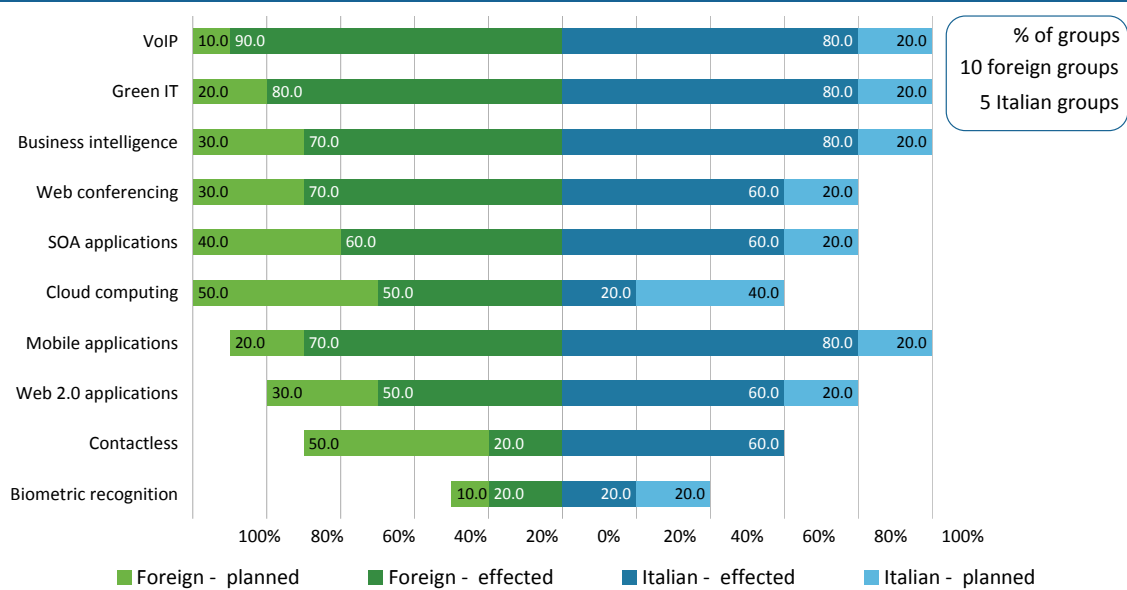


<sup>22</sup> For the main features of each technology or solution see the box in the Appendix.

Furthermore, some technological solutions have reached a state of maturity such that by 2013 they will be in use at all the groups surveyed<sup>23</sup>: VoIP, business intelligence and green IT.

Breaking the sample down by nationality, there are only two significant differences between Italian and foreign-headed groups: contactless technology, where 60% of the Italian groups had already made investments compared with just 20% of the foreign groups, and cloud computing, quite common among the foreign groups (50%) but not among the Italians (20%) (Figure 25).

**Figure 25. Investment by type of technology and nationality**



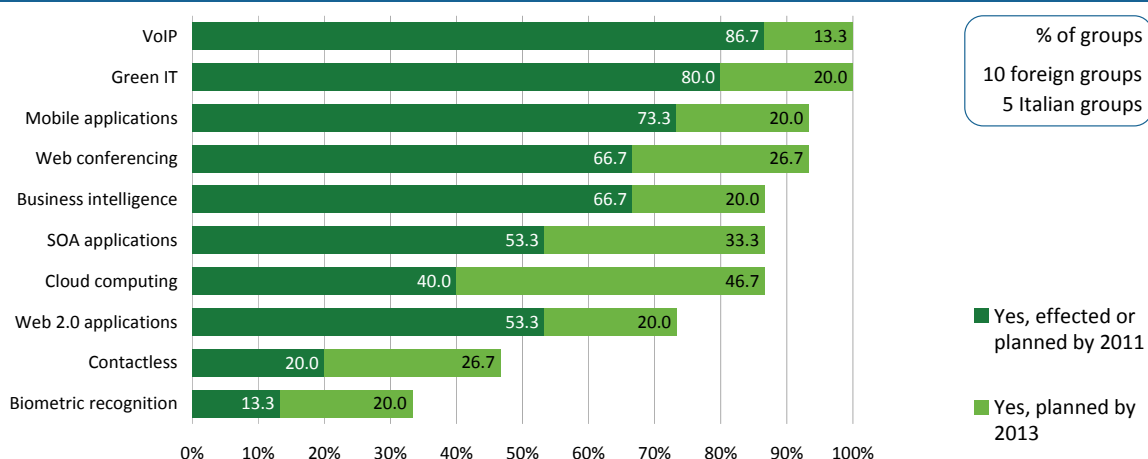
It is also instructive to relate the type of technology with its sphere of application: internal, in support of operations, or external, in support of customer service.

Comparing Figure 25 and Figure 26, it is clear that the entry point for new technology is internal use, except for mobile applications, which show a strong presence in customer service as well.

For internal functions only, the most solidly established technologies are VoIP and green IT, which by the end of the next two years will be in place at all the groups. Investments in mobile applications, web conferencing and business intelligence have been made by two thirds of the groups and by 2013 will involve practically all of them (93.4% for the first two technologies and 86.7% for the third). The sharpest rise is in cloud computing, which is expected to spread from 40% of the sample this year to 86.7% in 2013, more than doubling the number of user groups (Figure 26).

<sup>23</sup> The survey did not consider virtualization technology, for instance, which has been installed by the entire sample and is accordingly dropped from the analysis.

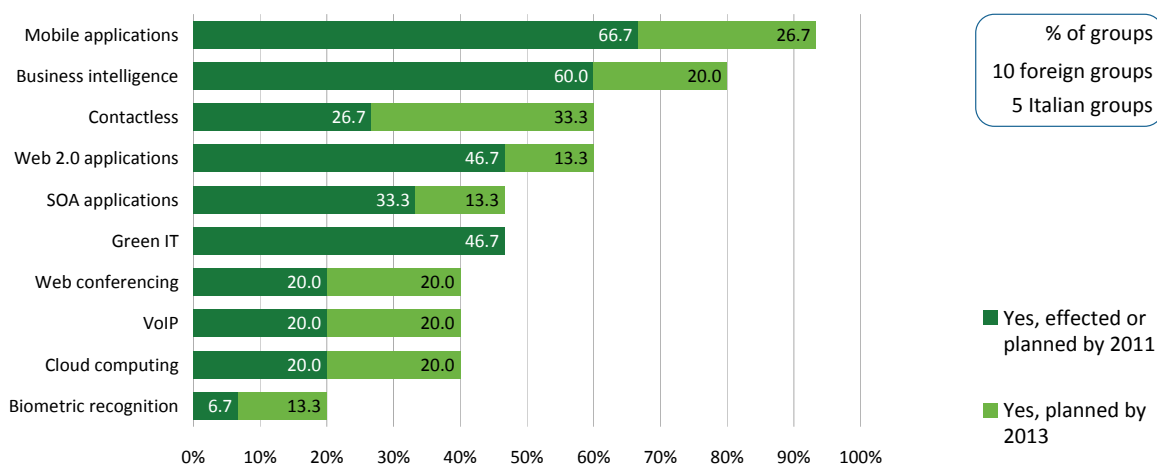


**Figure 26. Technological investment by internal function**

Turning to customer service, investment in most of the new technologies is considerably less common, save for mobile applications, which 93.4% of the sample groups will have installed by 2013, and business intelligence (80%).

Contactless technology, relatively rare internally, will be installed for customer services by the majority of the groups. Its incidence will more than double from 26.7% of the sample in 2011 to 60% in 2013, in connection with the increasing importance of micropayment applications for banking groups in the coming years.

All the other technologies are expanding except green IT, in which no group plans new customer service investments (Figure 27).

**Figure 27. Technological investment for customer service**

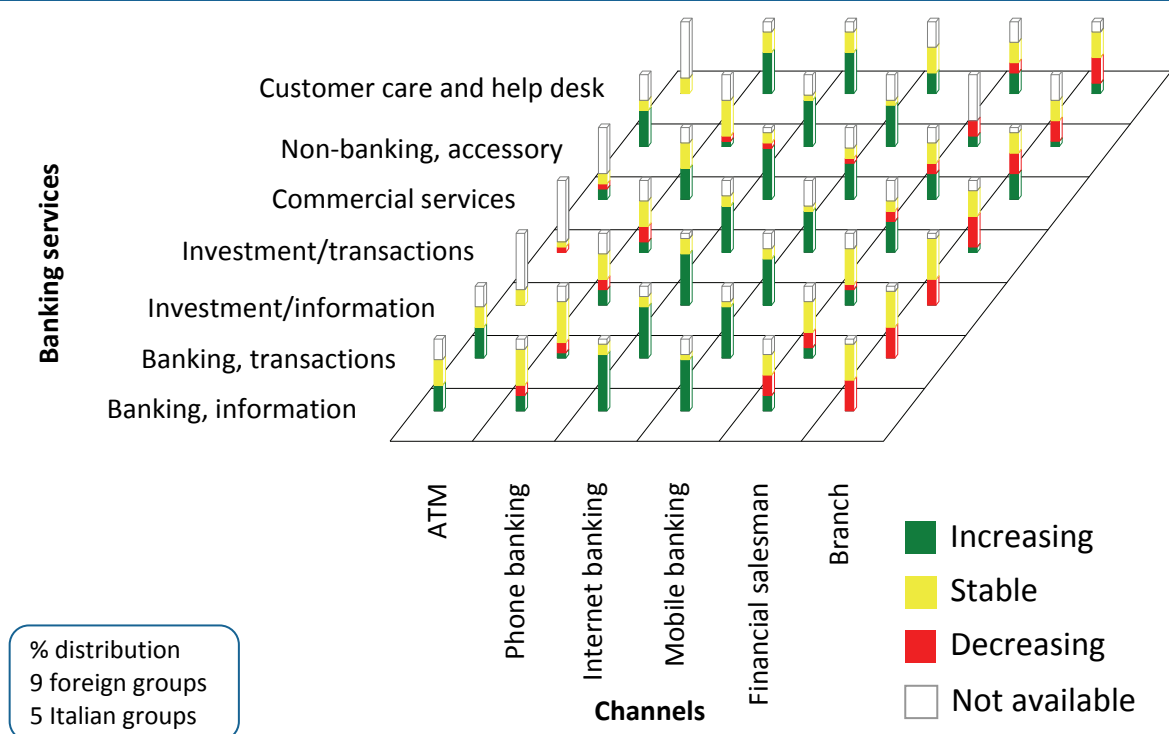
## 2.3 Customer contact channels

The 2010 survey replicates the analysis of the forecasts of the use of customer contact channels, providing an overview of functional applications and their channels that is

comparable with the analysis set forth in the 2010 Technology Survey. The findings of the technology survey<sup>24</sup> are broadly confirmed. There will be increased use of the “digital” channels (Internet and mobile) for all types of customer banking service (Figure 28). There is expected to be increased use of ATMs for certain applications, such as banking transactions and information and for accessory, non-banking services.

The use of the traditional channels of contact with customers, by contrast, is seen as steady or else in constant decline. In line with the findings of the technology survey for Italy, the foreign groups too are characterized by increasing use of telephone communication for customer care and help desks and for commercial services, while other applications hold steady. Another shared feature of the surveys is the sharp decrease in contact at the bank branch, except for commercial services.

**Figure 28. Banking services by customer contact channel**



## 2.4 The cost of IT security and the standards adopted

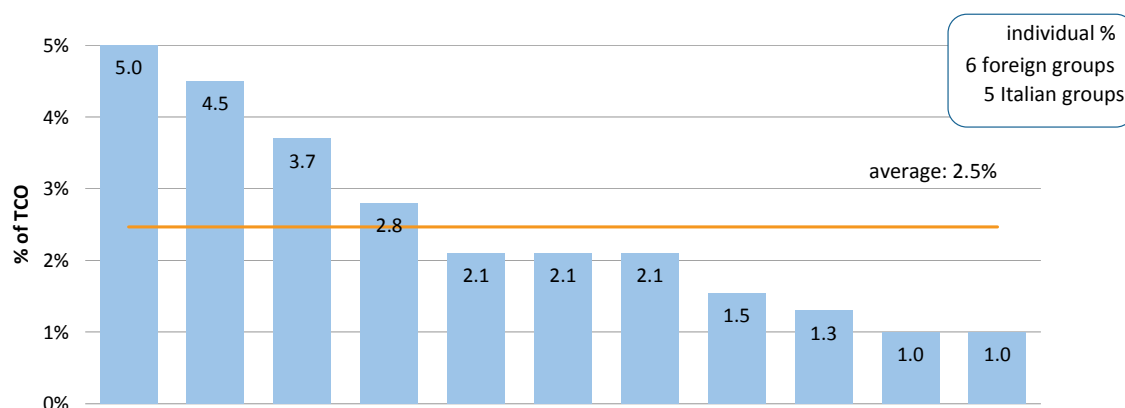
Security issues and IT safeguards are a topic of great interest to European banking groups, especially given the widespread use of information technology throughout the industry. The survey groups report that security expenditure accounts for an average of 2.5% of TCO<sup>25</sup>. The costs referred to are those for the technical, organizational and human

<sup>24</sup> *Rilevazione dello stato dell'automazione del sistema creditizio – Profili tecnologici e di sicurezza – 2010*, Chapter 2 – “L’innovazione tecnologica nei canali di contatto con la clientela”, p. 11.

<sup>25</sup> In the 2010 Economic Survey, Italian banks reported an average of 2.33%, expected to rise to 2.43% in 2011.

resources needed to guarantee the confidentiality, integrity and availability of data, carry out authentication and access control, and defend against hackers and viruses (Figure 29).

**Figure 29. The cost of IT security**



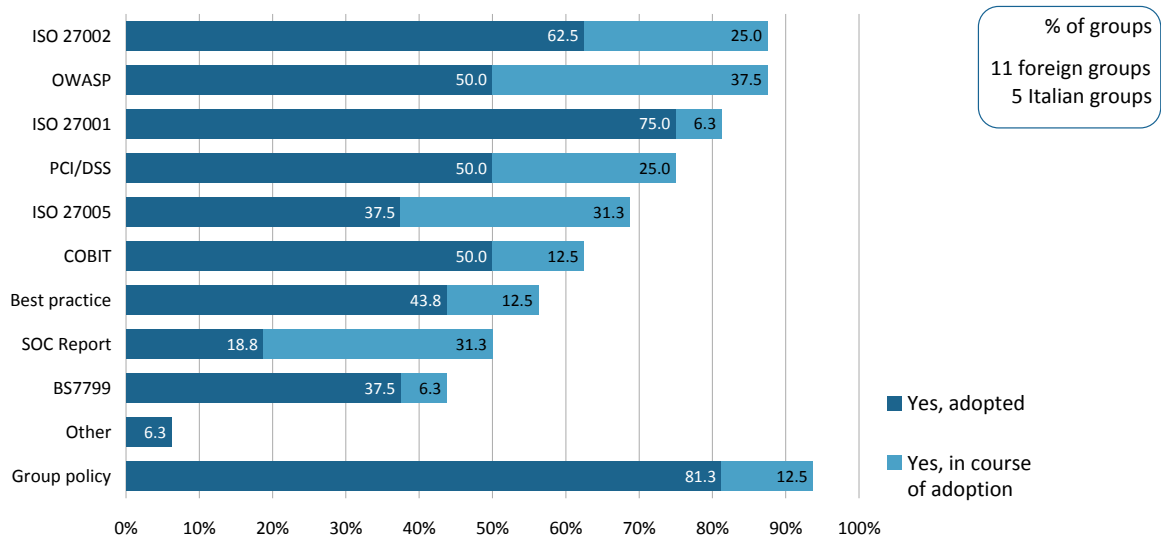
The survey asks about the groups' use of international security standards and best practices. In addition to the standards considered in the technology survey (ISO 27001, ISO 27002, PCI/DSS, SOC Report, OWASP and best practices), the present survey also specifies other standards (ISO 27005, COBIT, BS7799 and group security policies, i.e. formal rules) in order to refine the analysis<sup>26</sup>.

Nearly all the respondent banks already have or expect to adopt a group policy (93.8%), but always flanked by other norms as well. The standards most commonly applied for IT security are ISO 27001 and ISO 27002 (adopted respectively by 75% and 62.5% of the sample), followed by PCI/DSS, OWASP and COBIT, all in use at half the groups.

Looking ahead, the standard whose use is expanding most rapidly is OWASP, expected to be adopted soon by a total of 87.5% of the groups compared with 50% at present; the same percentage will adopt ISO 27002 and 81.3% will have ISO 27001. ISO 27005 will gain significantly (to be adopted by 68.8%) as will SOC report (half the groups).

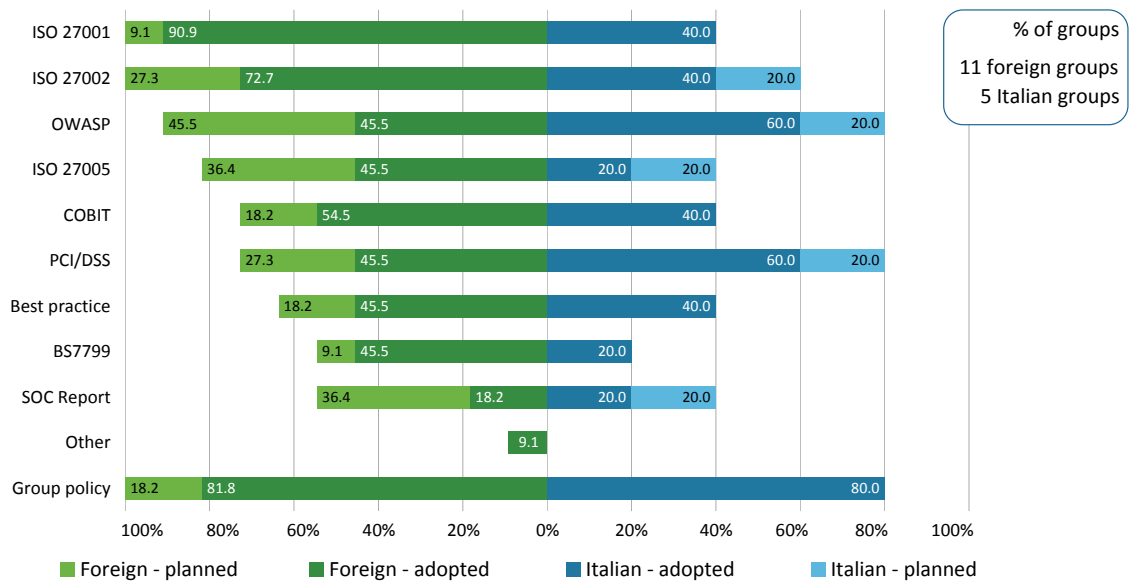
<sup>26</sup> The main features of each rule are set out in the box in the Appendix.

**Figure 30. Adoption of standards and best practices**



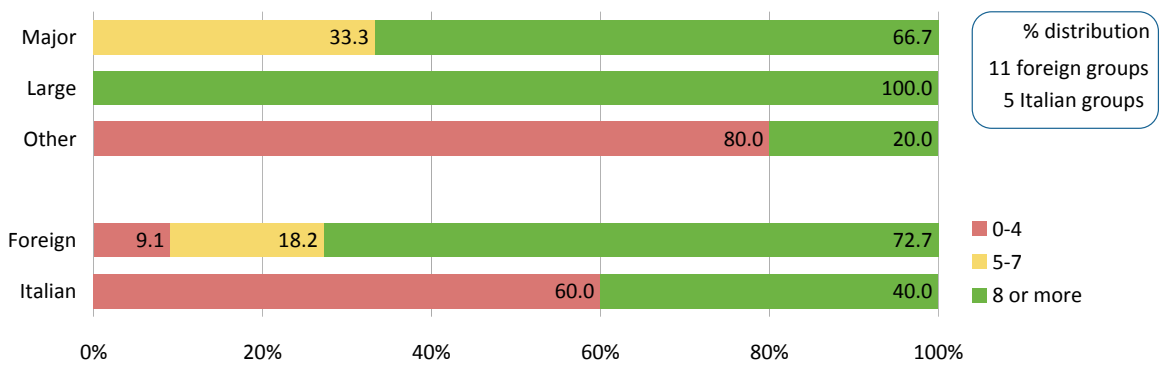
By nationality, foreign groups are definitely more likely than Italian to employ standards and best practices. The sharpest differences concern ISO 27001 and ISO 27002, both of which have either been adopted or are in course of adoption by all the groups with a foreign parent company, compared with 40% and 60%, respectively, by Italian groups, and ISO 27005 (81.9% for foreign groups and 40% for Italian) (Figure 31).

**Figure 31. Adoption of standards and best practices by nationality**



Numerically, the major and large groups have adopted more standards than the other, smaller groups (Figure 32). This pattern is also reflected in the classification by nationality, in that the foreign groups are larger and tend to have adopted more standards than Italian groups.

**Figure 32. Number of standards and best practices adopted**

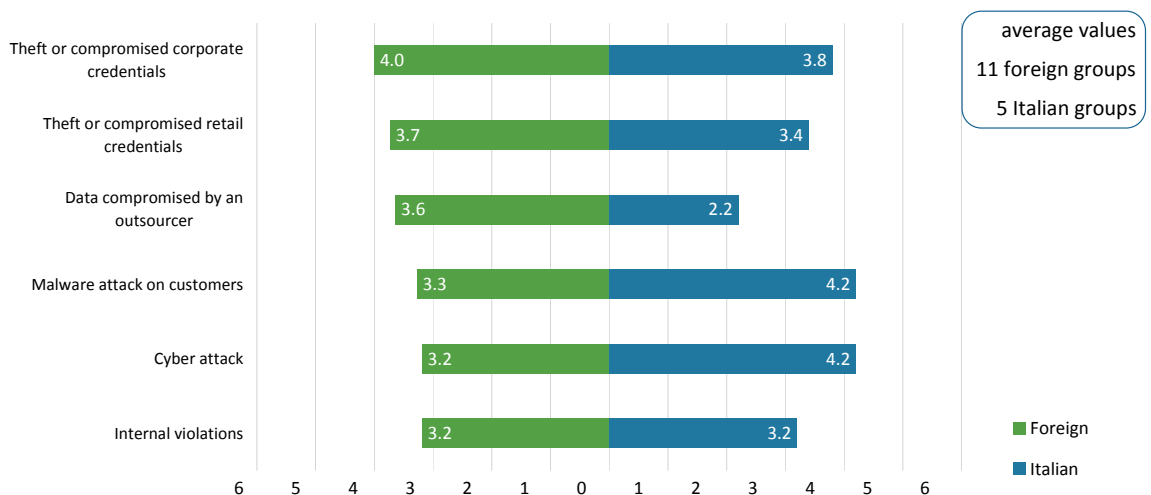


## 2.5 Perceived risk and data protection systems

To investigate the general perception of risk in specific operating environments, the groups were asked to rank six “scenarios” listed in a specially devised panel, based on the economic outlay sustained for each<sup>27</sup>.

- Theft or compromised credentials for retail customers
- Theft or compromised credentials for corporate customers
- Cyber attack (e.g. virus or denial of service)
- Data compromised by an external supplier (outsourcer)
- Internal violations by employees
- Malware attack on customers.

**Figure 33. Perceived risk in terms of expenditure**



<sup>27</sup> Respondents were asked to rank the scenarios in order of cost, from “1” (the least costly) to “6” (the most costly).

The International Survey sample indicated that stolen or compromised corporate credentials posed the greatest risk, while the Italian groups taking part in the 2010 Technological Survey saw stolen or compromised retail credentials as posing the greater threat. Another difference between the two samples is noticeable in their attitudes to a cyber attack, perceived as representing an average risk by the International Survey respondents and a high risk by the Technological Survey groups, while the risk of internal violations and of data being compromised by an outsourcer was perceived as low in both cases (Figure 33).

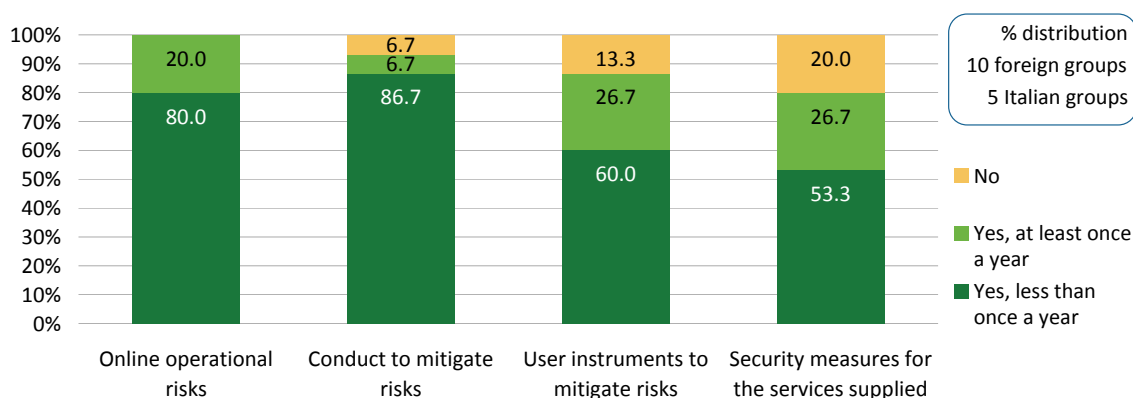
In order to analyze IT security services for customers, the groups were divided according to the initiatives taken to lower the risk of fraud in the provision of telematic banking services.

The analysis examines internet channels and mobile banking, areas where banking services are forecast to increase most<sup>28</sup>. The following initiatives were taken into consideration, specifically those designed to:

- Raise customer awareness of the risks of online operations;
- Illustrate rules of conduct for users in order to mitigate the risks inherent in using the services offered;
- Illustrate technical stratagems that users can adopt to mitigate the risks of online operations;
- Describe the main measures implemented to raise the security of the services offered.

Overall, the number of groups that adopt initiatives to lower risks based on the dissemination of specific IT skills is higher for the internet channel, which is more consolidated than the mobile one<sup>29</sup>.

**Figure 34. Risk mitigation initiatives for telematic services: Internet banking**



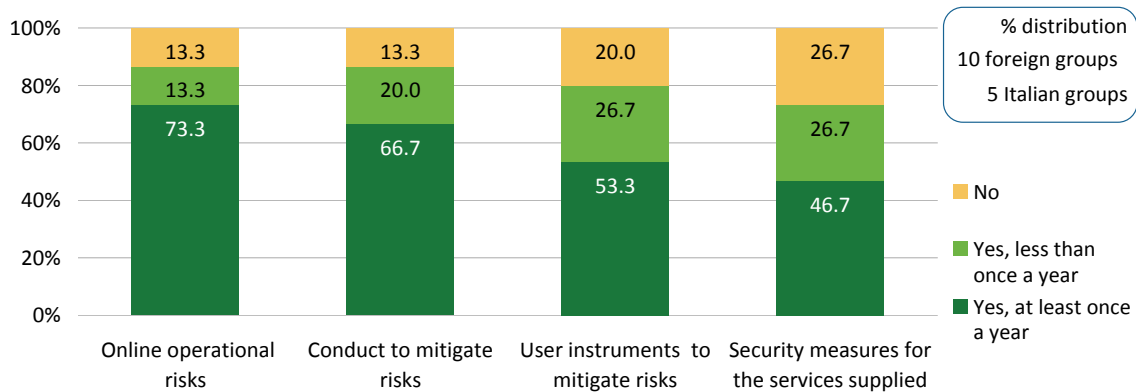
All the initiatives are well under way in the groups; the most commonplace are those aimed at raising awareness of the risks of online operations, in what is basically a

<sup>28</sup> See Section 2.3.

<sup>29</sup> This is consistent with the findings for the Italian groups that took part in the 2010 Technological Survey.

“passive” defence of customers (taken by all the groups for the internet channel and by 86.7% for the mobile channel). “Active” defence initiatives are also widespread, designed to ensure customers can defend themselves from attacks by adopting suitable rules of conduct and instruments (93.4% of the groups for internet banking and 86.7% of the groups for mobile banking). Less frequent are initiatives illustrating security measures to protect the services provided (80% for the internet channel as against 72.4% for the mobile channel).

**Figure 35. Risk mitigation initiatives for telematic services: mobile banking**



A comparison of the decisions of foreign and Italian groups shows how groups with an Italian parent bank adopt all initiatives irrespective of their scope or channel, unlike groups with a foreign parent bank which tend to be more selective (see Figure 62 and Figure 63 in the Appendix).

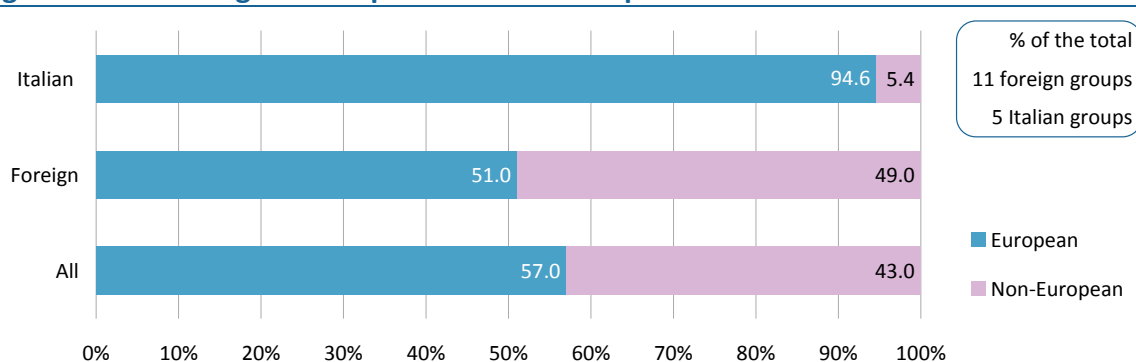
## Chapter 3. Organizational aspects

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

The survey analyzes the banks and IT structures of the groups separately, mapping their physical distribution. To facilitate the collection of data from the participants, the world map was subdivided into regions, roughly splitting Europe into five areas and counting the other continents as distinct regions. The European regions considered are: Mediterranean Europe<sup>30</sup>, Great Britain, Central-Western Europe<sup>31</sup>, Scandinavia and Eastern Europe; the non-European regions are North America, Central-South America, Asia, Africa and the rest of the world.

Broadly speaking, the banks are divided evenly between European (57% of the total) and non-European sites (43% of the total). This is due to the significant presence of non-European banks in the groups with a foreign parent company, whose members are basically half European and half non-European; the Italian groups interviewed, by contrast, are much more heavily present in the European geographical area, where 94.6% of the banks are located (Figure 36).

**Figure 36. Percentage of European and non-European banks**



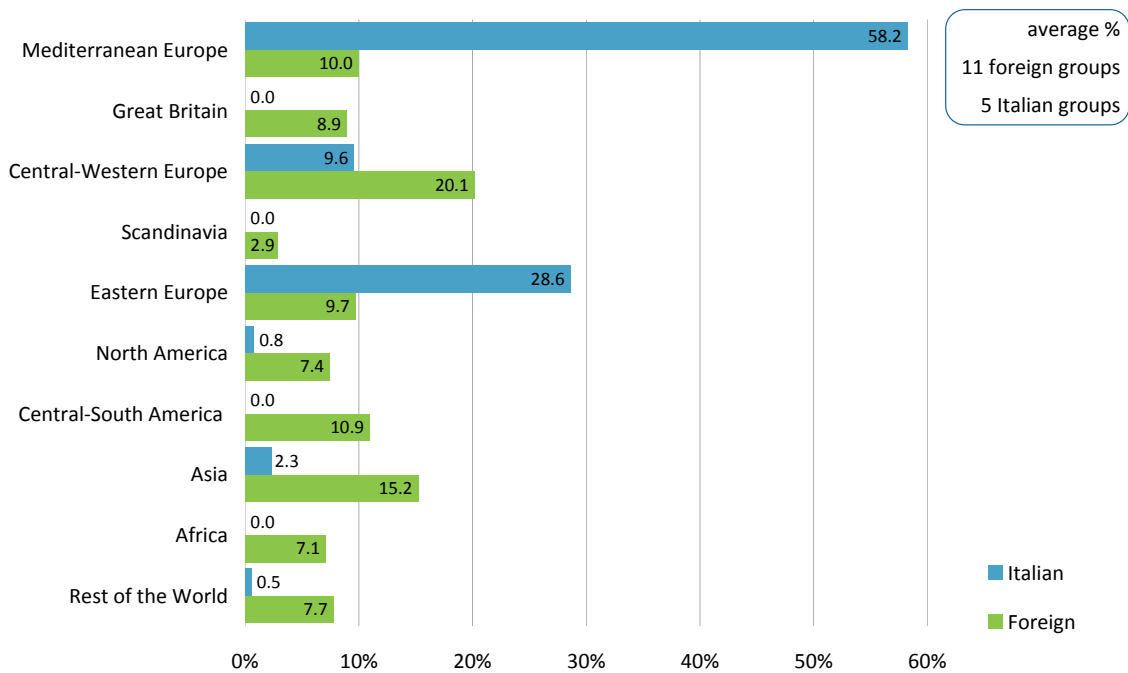
The groups with a foreign parent company tend to have banks distributed throughout the world, in particular Central-Western Europe and Asia. Banks in the groups with an Italian parent company are concentrated in Europe, mainly in the Mediterranean region, but also in Eastern and Central-Western Europe, with none whatsoever in Great Britain and Scandinavia. The highest percentage of banks located outside of Europe is in Asia (Figure 37).

<sup>30</sup> Greece, Italy, Portugal, Spain.

<sup>31</sup> Austria, Belgium, France, Germany, the Netherlands, Luxembourg, Switzerland.

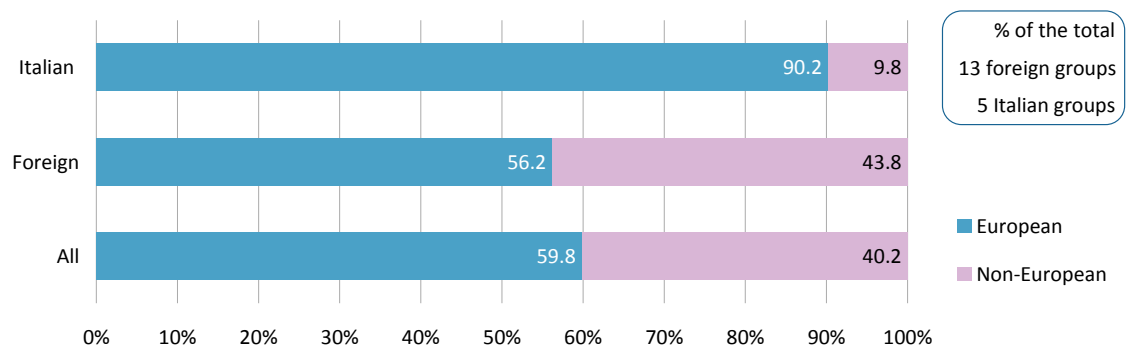


**Figure 37. Percentage distribution of the banks**



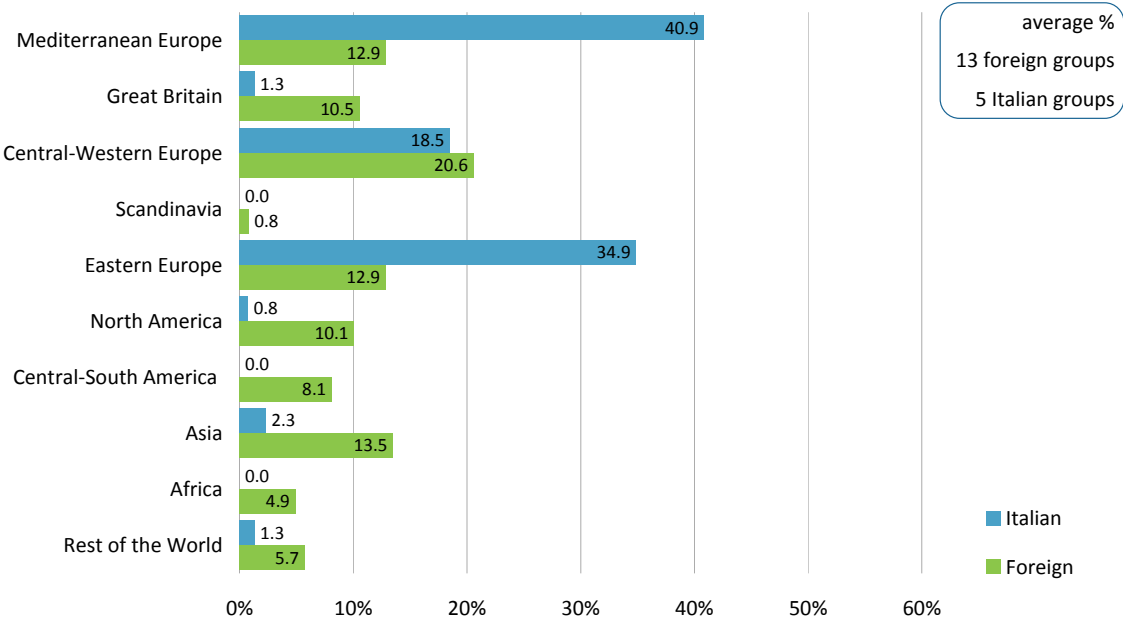
The distribution of IT structures among European and non-European sites follows a similar pattern to that of the banks: the IT centres of groups with a foreign parent company are basically distributed evenly among the European and non-European regions (56.2% of the structures, as against 43.8%); vice versa, less than 10% of the IT structures of groups with an Italian parent company are located outside of Europe (see Figure 38).

**Figure 38. Percentage of European and non-European IT structures**



Groups with a foreign parent company tend to concentrate their IT structures in Central-Eastern Europe and in Asia, less so in Eastern Europe and Mediterranean Europe, although they are present in all the other regions. As for the groups with an Italian parent company, the survey reveals a greater concentration of IT structures in Europe, predominantly in Mediterranean Europe and Eastern Europe, less markedly in Central-Western Europe (Figure 39).

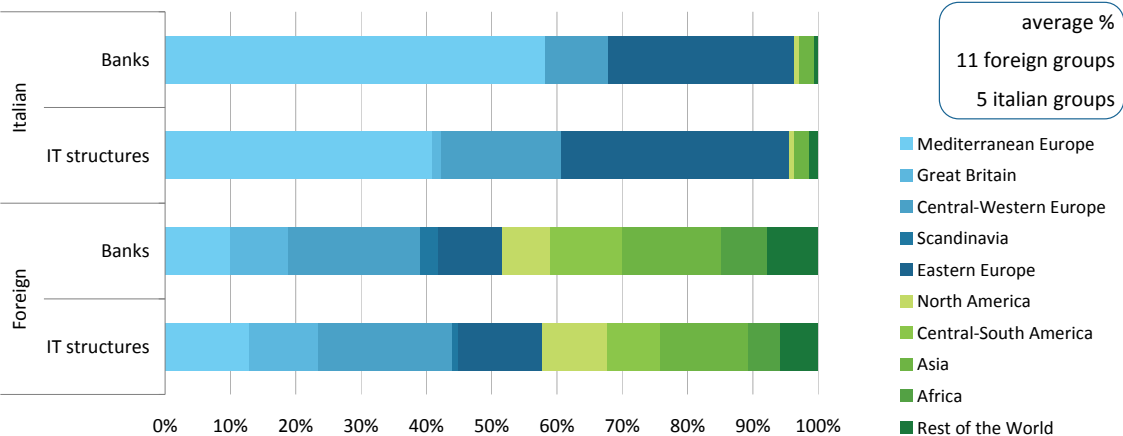
**Figure 39. Percentage distribution of IT structures**



The survey shows that the groups with an Italian parent company have mostly European IT structures. The preferred regions for the location of IT structures (Mediterranean Europe, Eastern Europe and Central-Western Europe) absorb 94.3% of the group’s IT structures on average.

Ultimately, the geographical distribution of the groups’ IT structures is largely consistent with that of the banks to which they belong, both as the average of the percentages of each group and to the total of the structures. When analyzed by the nationality of the parent bank, what emerges is the tendency of Italian groups to move IT centres towards Central-Western Europe and Eastern Europe, decentralizing with respect to Mediterranean Europe (Figure 40<sup>32</sup>).

**Figure 40. Geographical distribution of the banks and IT structures**



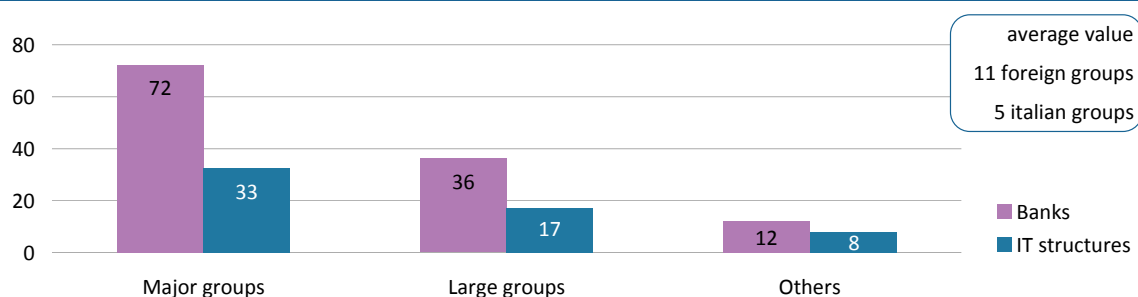
<sup>32</sup> For ease of reading, the figure does not show the single percentages. The sample is made by groups which give both the distribution of the banks and the IT structures.

This phenomenon is consistent with the results that follow, regarding the sourcing choices of the groups. While the Italian groups outsource their IT activities to instrumental companies (or, more generally, to non-banking members of the group), the foreign groups tend instead to concentrate their IT activities in banking components. The result is a greater correspondence between the number of banks and IT structures for each region, compared with what happens for Italian groups.

Considering the total number of banks in each group, it is possible to determine the average number by size. More specifically, the Major groups comprise 72 banks on average, double the 36 banks of the Large groups, and triple the 12 institutes in the Others group.

If the same analysis is applied to the groups' IT structures, it emerges that the average number falls in line with a reduction in group size, but in different proportions with respect to those of the banks (Figure 41<sup>33</sup>).

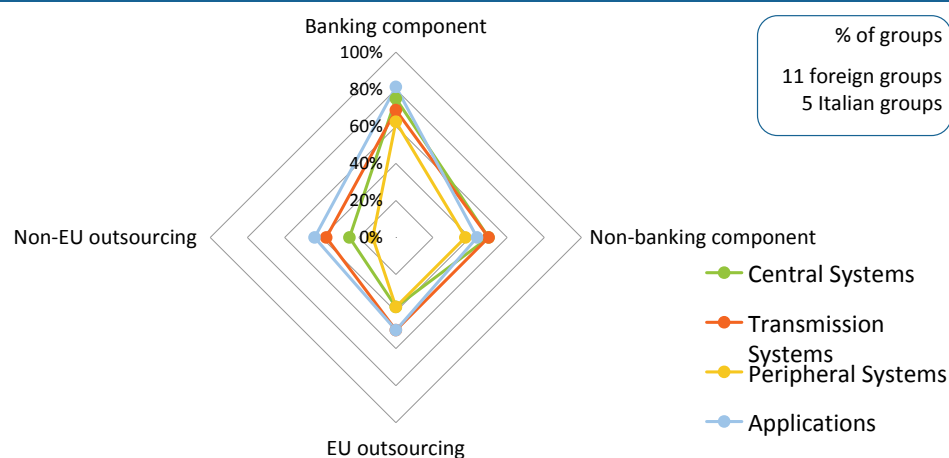
**Figure 41. Average number of structures per group by size**



### 3.2 The governance and organizational model of the “IT factory”

More than 60% of the groups making up the sample locate their IT activities at a banking component of the group, irrespective of the kind of activity undertaken, while less than 50% avail of non-banking group members and outsourcing for all their activities (Figure 42). On average, non-EU outsourcing is the least preferred option.

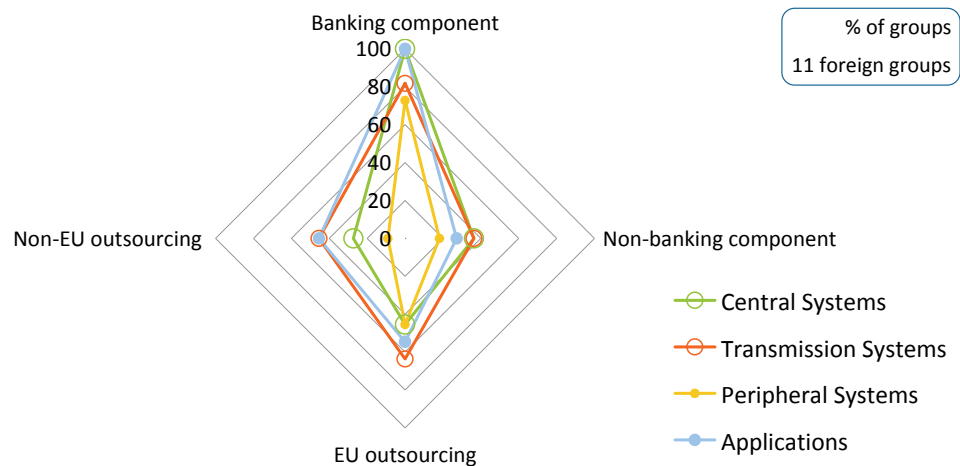
**Figure 42. Location of IT activities**



<sup>33</sup> The sample is made by groups which give both the distribution of the banks and the IT structures.

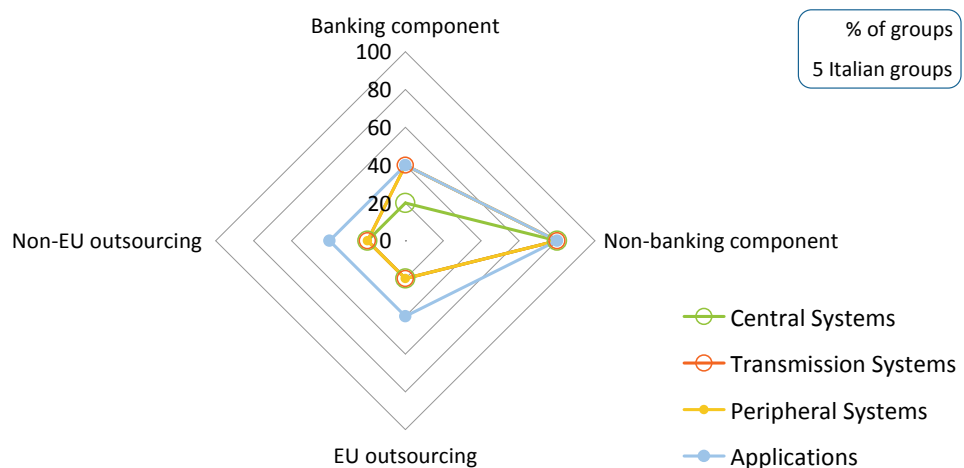
All the groups with a foreign parent company locate their activities relative to Applications and Central Systems at their own banking components, 81.8% of the groups do the same for Transmission Systems and 72.7% for Peripheral Systems. Recourse to non-banking components is very infrequent: while 36.4% of the groups use non-banking components for the Transmission and Central Systems, just 27.3% use them for Applications and still less (18.2%) for Peripheral Systems (Figure 43).

**Figure 43. Location of IT activities: foreign groups**



The five groups with an Italian parent company make less recourse to banking components and outsourcing than the foreign groups, where the use of non-banking components nonetheless predominates: 80% of the groups locate their IT activities at a non-banking component (Figure 44).

**Figure 44. Location of IT activities: Italian groups**



This interesting phenomenon is attributable to the specific characteristics of the five Italian groups. As already seen in the 2010 Economic Survey, which classified IT systems by how they were managed<sup>34</sup>, four Italian groups make predominant use of instrumental

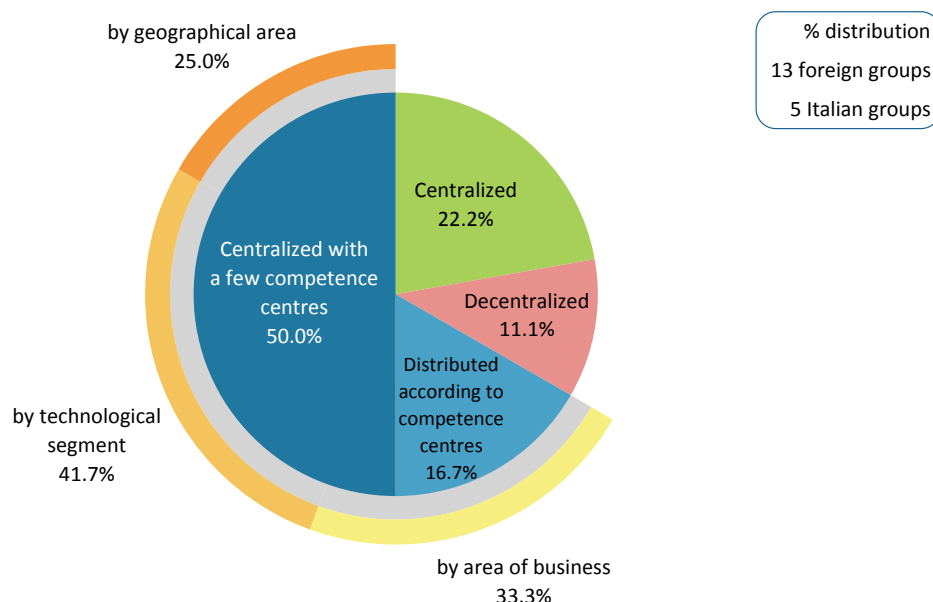
<sup>34</sup> Rilevazione dello stato dell'automazione del sistema creditizio – Profili economici e organizzativi – 2010, Chapter 3 – “Note metodologiche”, p. 64.

companies for IT, while one outsources its management to a non-group company. A European comparative analysis indicates that, in respect of our sample only, the “instrumental company” tends to be an Italian model.

For 72.2% of the groups, the dominant organizational model of the “IT factory” is the centralized one (with or without competence centres); 16.7% of the groups opt for a model distributed according to competence centres, and 11.1% a decentralized model. In the 2009 survey, there was a greater tendency to centralize (61.1%), to the benefit of the decentralized model (22.2%).

Competence centres are common to 66.7% of the sample, in the context of either the centralized or distributed models. Mostly, these centres are distributed by technological segment (41.7% of the groups with competence centres), followed by business area (33.3%), and geographical area (25%).

**Figure 45. Dominant organizational model of the “IT factory”**

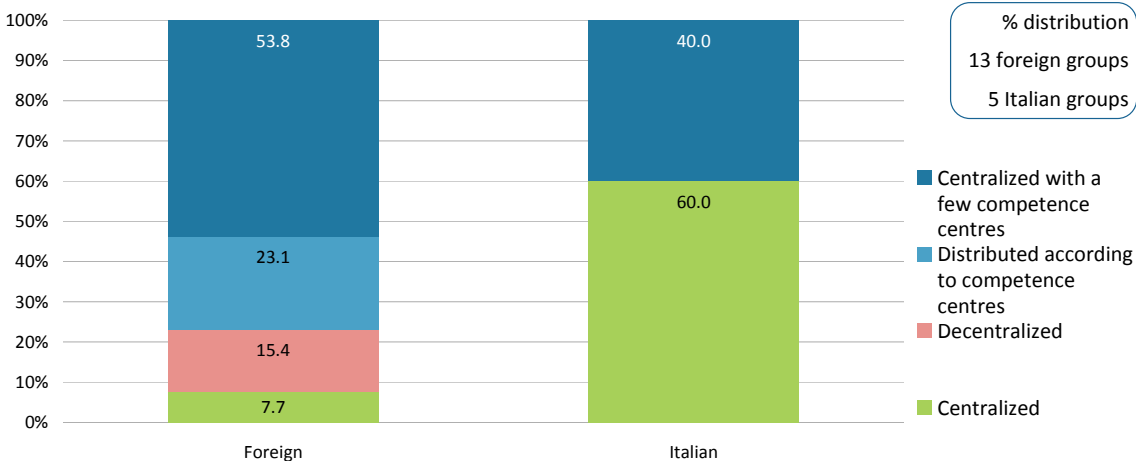


Analyzing the breakdown of foreign and Italian groups, it can be seen that all the Italian groups make rely on a centralized model for IT management, with, in some cases, the presence of competence centres (Figure 46); the lack of any distributed or decentralized model appears consistent with what was observed earlier on in relation to cross-border integration activities for the Italian groups<sup>35</sup> and their distribution throughout Italy.<sup>36</sup>

<sup>35</sup> See Section 1.1.

<sup>36</sup> See Section 3.1.

**Figure 46. Dominant organizational model of the “IT factory”, by nationality**



In relation to IT governance, 38.9% of the respondents indicated that the Chief Information Officer reports to the Chief Operational Officer (Figure 47).

The groups with an Italian parent company, unlike those with a foreign parent company, have a greater tendency to entrust IT governance to a Board Member (40% as against 23.1%), as opposed to the Chief Executive Officer (20%, compared with 38.5% of the foreign groups).

None of the groups in the sample indicated the Chief Financial Officer as the person of reference for IT. Regarding the classification of the groups by size, it was observed that the Chief Information Officer reports to the Chief Operational Officer in the Major and Large groups only (Figure 65 in the Append).

**Figure 47. Person to whom the CIO reports**

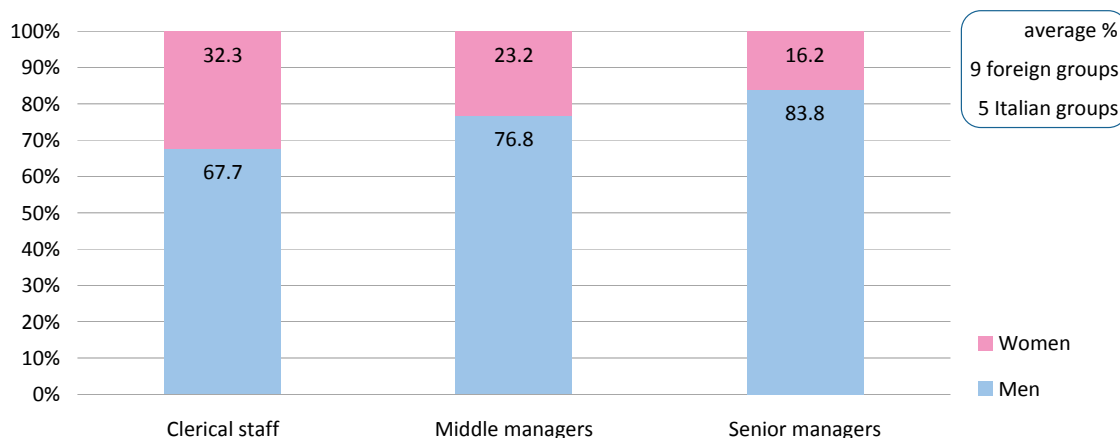


### 3.3 IT personnel

In order to standardize the communication of data on IT personnel by the groups taking part in the survey, three roles were identified: clerical staff, middle managers and senior managers.

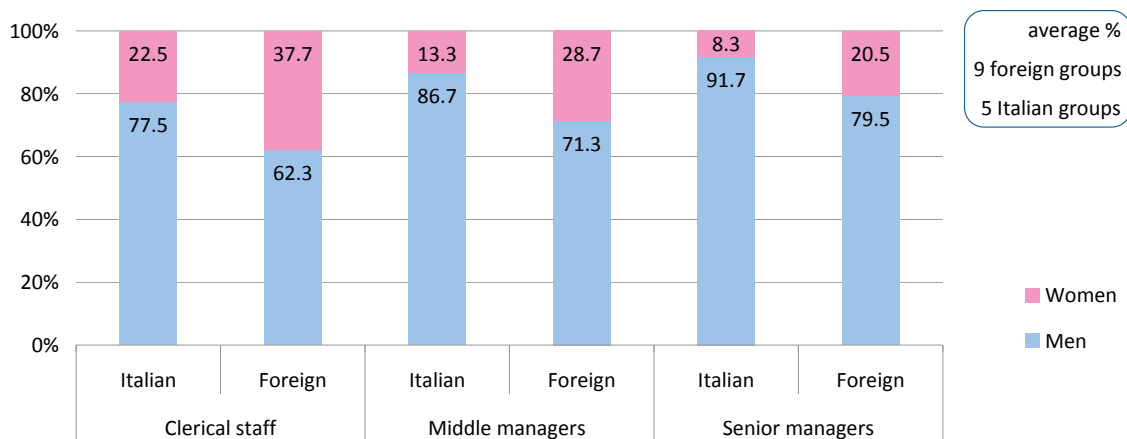
Analyzing the distribution of IT personnel by gender and role, it can be seen that the rate of female participation decreases as workers' grades increase, from 32.3% among clerical staff to 16.2% among senior managers (Figure 48).

**Figure 48. IT personnel: role and gender**



Examining the same breakdown separately for Italian and foreign groups, it can be seen that for each professional role, the percentage of women is always higher in the foreign groups compared with the Italian ones (Figure 49).

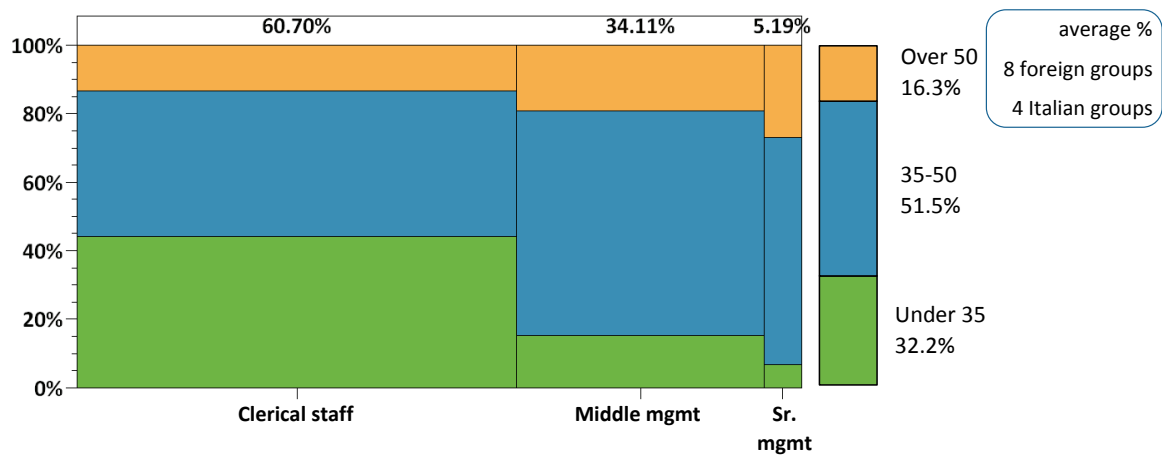
**Figure 49. IT personnel: role and gender by nationality**



With reference to the whole sample, the IT workers were also examined from the perspective of age, divided into three categories: under 35, from 35 to 50, and over 50. Some 32.2% of the employees are under 35, 51.5% are aged from 35 to 50, and 16.3% are over 50 (Figure 50).

In the Italian groups of the Economic Survey, the IT employees under 35 years of age and those over 50 both accounted for around 20% of the total.

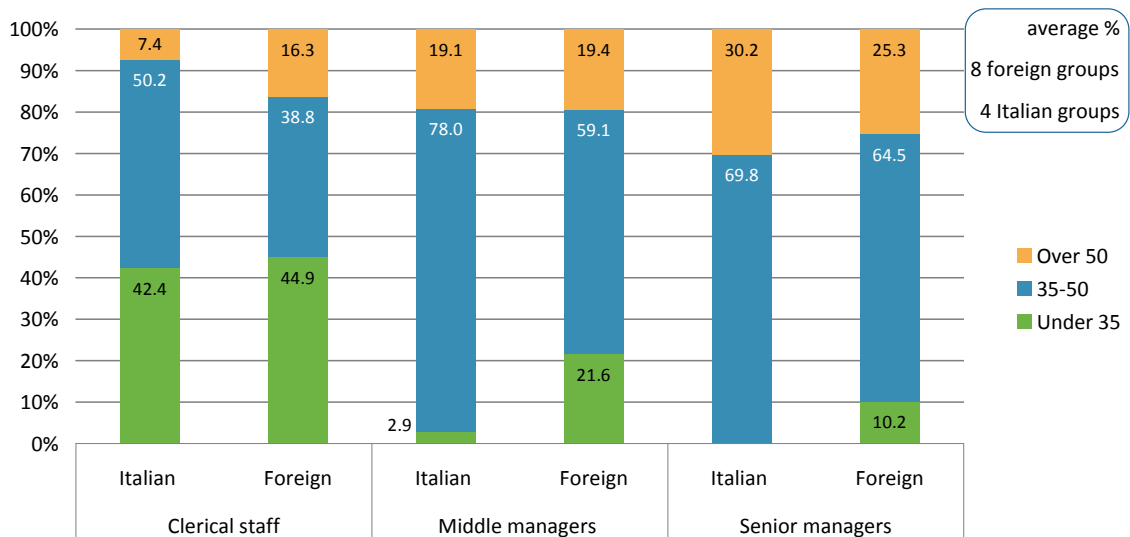
**Figure 50. IT personnel: role and age**



A comparison of the parent group by nationality reveals that the youngest cohort in the Italian groups (under 35) is reduced to a minimum when moving from the role of clerical staff (42.4%) to middle manager (2.9%), and disappears entirely from the senior managers' group. In the foreign groups, the same age group accounts for 21.6% of middle managers, declining to 10.2% of senior managers (Figure 51).

The clerical staff of the groups with an Italian parent company number few workers over 50 years of age (7.4%), less than half those present in the groups with a foreign parent company (16.3%).

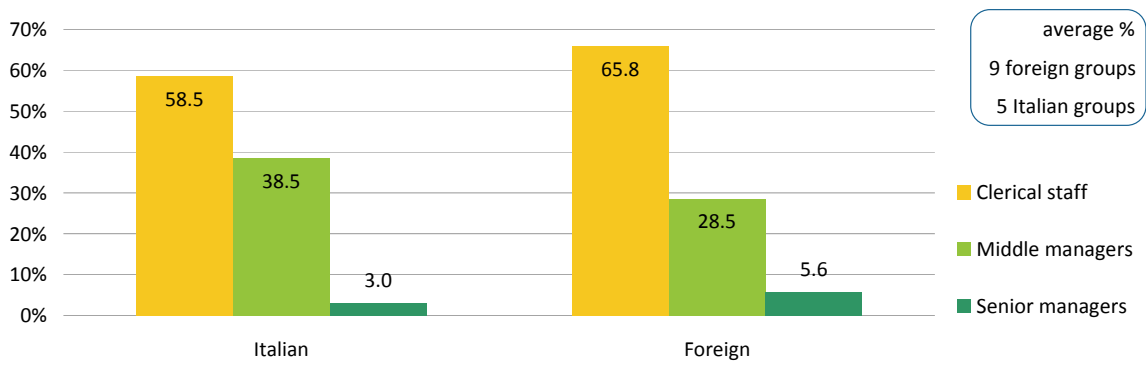
**Figure 51. IT personnel: role and age by nationality**



Broken down by role alone, it can be seen that the Italian groups, by comparison with the foreign ones, have a larger share of middle managers on the total clerical staff (38.5% compared with 28.5% of the foreign groups). Moreover, for the foreign groups, there is almost double the number of senior managers than in Italian groups (Figure 52).

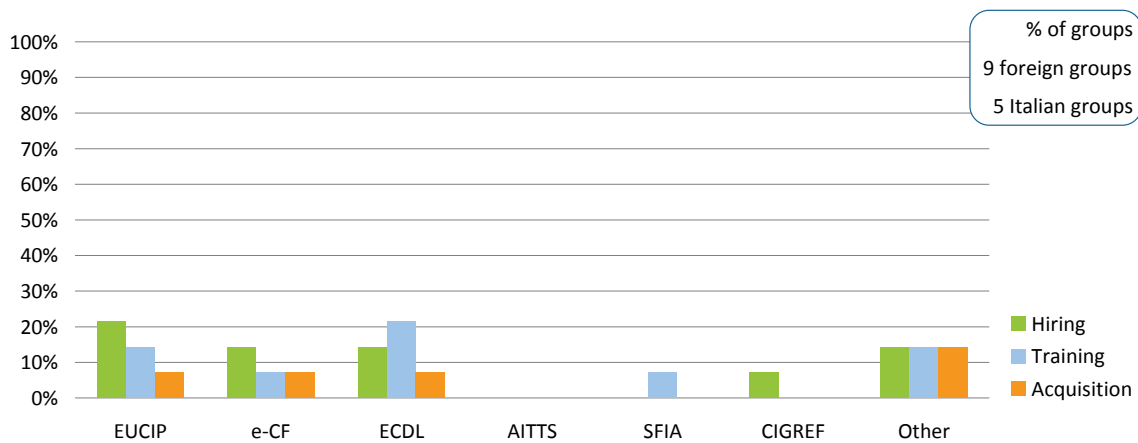


**Figure 52. IT personnel: share of the role**



The analysis of IT personnel concludes by looking at the standards of reference for IT competences and professional profiles. Although still fairly uncommon, some groups are referring to these standards, in particular for the hiring of staff (mainly EUCIP, e-CF and ECDL) and for training (ECDL and EUCIP).

**Figure 53. Standards of reference for IT professionals**



---

## Chapter 4. Methodological notes

### 4.1 General matters

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

The economic and organizational data always refer to the entire group.<sup>37</sup>

### 4.2 Survey methodology

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

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

The average percentages (given in the charts as “average %”) are always 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 distribution (given in the charts as “% distribution”) is computed by dividing all the groups that responded into separate sets in such a way that a group appears only in a single set.

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, considering that a single group can provide more than one response and may thus appear more than once in the percentages provided.

The percentage of the total (given in the charts as “% of the total”) is computed by first summing the homologous aggregates of each group and then calculating the ratio of the sum obtained to the overall total.

---

<sup>37</sup> In the Italian Economic Survey the data refer only to the banking components and Italian instrumental companies of each group. Thus the data for the Italian groups published in this International Survey differ from those in the Italian national survey.

### 4.3 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 6) and by size in terms of total assets (Table 7). Within each category the groups are ranked by total assets.

#### Table 6. 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.

5 groups with an Italian parent bank
UniCredit Group
Intesa Sanpaolo
Banco Popolare
Veneto Banca Holding
Gruppo Banca Sella
13 groups with a foreign parent bank
BNP Paribas <sup>38</sup> , France
Deutsche Bank AG <sup>39</sup> , Germany
Barclays Bank plc, United Kingdom
Crédit Agricole Group <sup>40</sup> , France
The Royal Bank of Scotland, United Kingdom
Banco Santander, Spain
Société Générale SA <sup>41</sup> , France
UBS, Switzerland
Credit Suisse, Switzerland
Commerzbank AG, Germany
Rabobank, Netherlands
Banco Bilbao Vizcaya Argentaria SA, Spain
Dexia Credit Local SA <sup>42</sup> , France

The classification by size was made on the basis of groups' declared "Total assets" at 31 December 2010.

<sup>38</sup> Involved through Banca Nazionale del Lavoro, member of CIPA.

<sup>39</sup> Involved through Deutsche Bank, member of CIPA.

<sup>40</sup> Involved through Cariparma, member of CIPA.

<sup>41</sup> Did not participate in the 2009 Survey.

<sup>42</sup> Involved through Dexia Crediop, member of CIPA.

**Table 7. Classification of the groups by size**

<b>8 Major groups (total assets of more than €1,000 billion)</b>
BNP Paribas
Deutsche Bank AG
Barclays Bank plc
Crédit Agricole Group
The Royal Bank of Scotland
Banco Santander
Société Générale SA
UBS
<b>5 Large groups (total assets between €500 billion and €1,000 billion)</b>
UniCredit Group
Credit Suisse
Commerzbank AG
Intesa Sanpaolo
Rabobank
<b>5 Other groups (total assets of less than €500 billion)</b>
Banco Bilbao Vizcaya Argentaria SA
Dexia Credit Local SA
Banco Popolare
Veneto Banca Holding
Gruppo Banca Sella

As for the 2009 survey, a further classification was introduced based on the main type of business activity declared by the groups surveyed. A specific question asked respondents to give the percentage of total business activities accounted for by the following sectors: retail banking, corporate/investment banking, private banking and other<sup>43</sup>.

The composition of the sample groups according to main type of business and size is given in Figure 54.

<sup>43</sup> The classification by type of activity is determined by the percentages given in the responses to the relevant question. The groups that reported, for any type of activity, a percentage of more than 50% were classed in the set of banks engaging in that type of activity; for percentages of 50% or less, the respondent was classed as engaged in “mixed” activity. No group reported more than 50% for “private banking”, which was accordingly not considered in the classification.

**Figure 54. Sample groups by size and main type of business activity**



## The technologies found in the survey

### Contactless

Technologies that allow two or more entities to interact without physical contact, e.g. for recognition applications. Contactless instruments include Radio Frequency IDentification (RIFID) 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.

### 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.

### Web 2.0 applications

Web 2.0 stands for the recent development of software able to make use of the web more interactive and enhance communications between the 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

Information technologies that permit the remote use of hardware (storage, CPUs, etc.) and software as if they were implemented by “standard” systems (servers and personal peripherals). The actual allocation of the resources is not specified in detail; the idea is that the implementation is a heterogeneous and distributed set of resources whose characteristics are not known by the user.

### Web conferencing

A videoconferencing system running on the Internet with software installed on the participants’ terminals 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.

## The IT standards and best practices found in the survey

### SOC Reports

Service Organization Control Reports are internal control reports on the services of a “service provider” and contain important information needed to define and cope with the risks associated with outsourcing services (source: [www.aicpa.org](http://www.aicpa.org)).

### OWASP

The Open Web Application Security Project is an open community devoted to enabling firms to design, develop and use reliable applications. OWASP projects cover many aspects of the security of applications with documents, instruments, didactic environments, guidelines and checklists, etc. to support organizations to improve their ability to produce secure code (source: [www.owasp.org](http://www.owasp.org)).

### BS7799

This standard is a guide supporting the ISO 27001 requirements in the context of the risk management cycle of an Information Security Management System (ISMS), which includes risk (re)assessment, decision making, monitoring and updating risk profiles, indications on corporate governance, and compliance with other standards and regulations (source: [www.bsigroup.com](http://www.bsigroup.com)).

### ISO 27005

The ISO/IEC 27005:2008 standard provides guidelines for information security risk management and was designed to support the ISO/IEC 27001 specifications and manage information security risks (source: [www.iso.org](http://www.iso.org)).

### COBIT

A unification framework that integrates the main global standards, such as ITIL, CMMI and ISO 17799 with the aim of managing IT control problems from a business perspective (source: [www.isaca.org](http://www.isaca.org)).

### ISO 27001

The ISO/IEC 27001:2005 standard (for brevity referred to in the text as ISO 27001) specifies the requirements for implementing, operating and controlling an IT security management system in the context of a business’s risks. It specifies the requirements for implementing personalized security controls and is designed to ensure an adequate and proportionate choice of security defences to protect informational assets, by providing the material for assessing and trusting in the system (source: [www.iso.org](http://www.iso.org)).

### ISO 27002

The ISO/IEC 27002:2005 standard (for brevity referred to in the text as ISO 27002) establishes guidelines and general principles for implementing and maintaining the management of an organization’s security. It contains best practices for protection objectives and guidelines for developing internal organization security standards and security management best practices. It also builds confidence in inter-organizational activities (source: [www.iso.org](http://www.iso.org)).

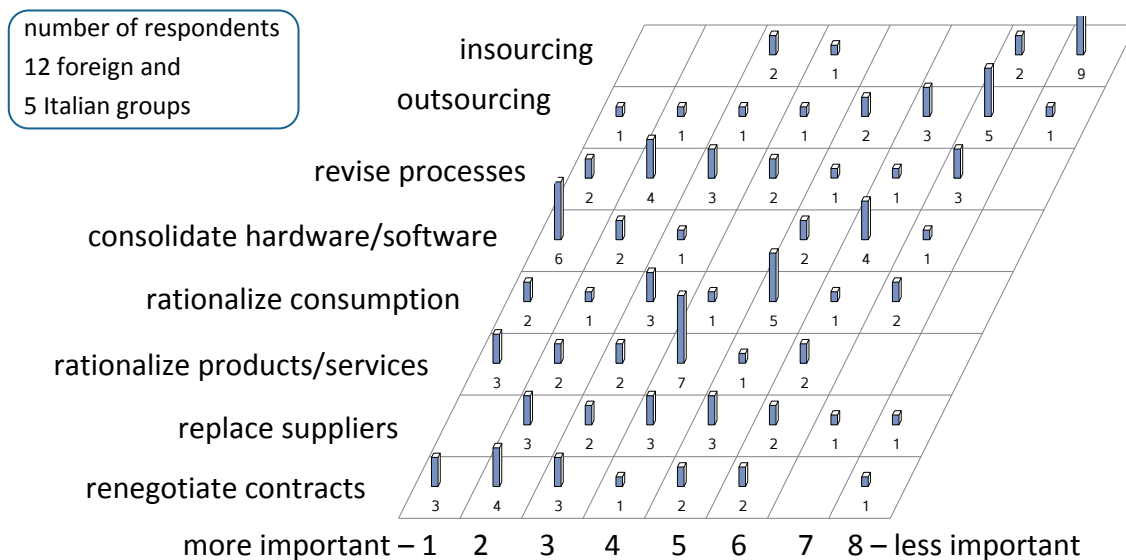
### PCI/DSS

The Payment Card Industry Data Security Standard applies to all the entities that store, process and/or transmit cardholder data. It covers the (technical and operational) system components included in or connected with cardholder data and aims at protecting these data (source: [www.pcisecuritystandards.org](http://www.pcisecuritystandards.org)).

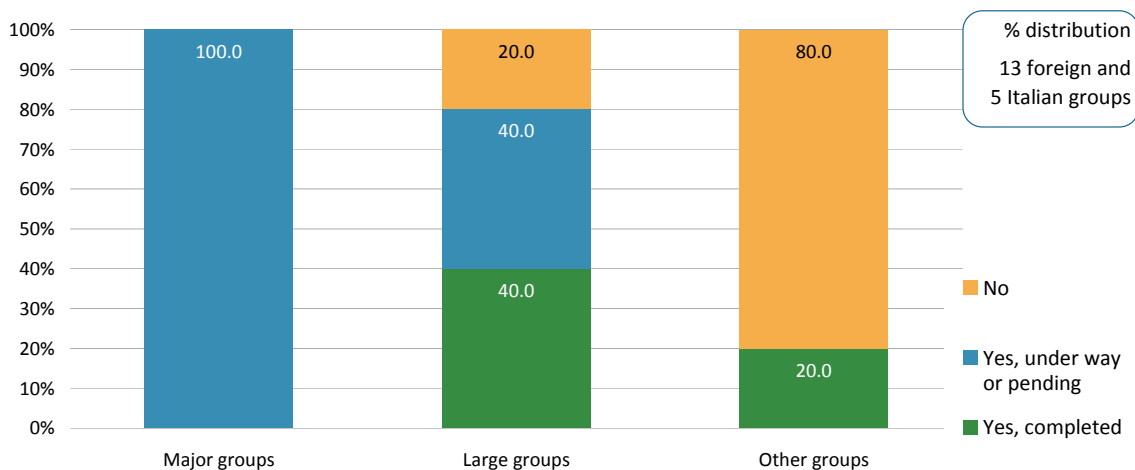
### Best practices

In general, best practices are technical or organizational guidelines that have shown their value in actual projects and are therefore accepted by large communities of users even though they have not achieved the status of standards. Sometimes they are supported by official organizations that look after their composition and promote them with users, as in the case of the National Institute of Standards and Technology (NIST) and the SANS Institute (SysAdmin, Audit, Network, Security).

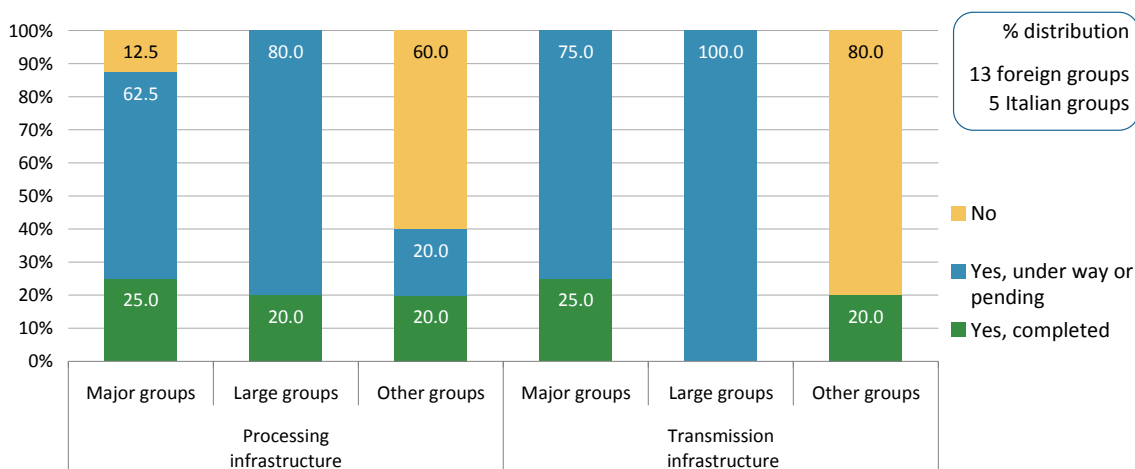
**Figure 55. Actions taken to achieve IT cost savings**



**Figure 56. Cross-border integration of IT systems by size**

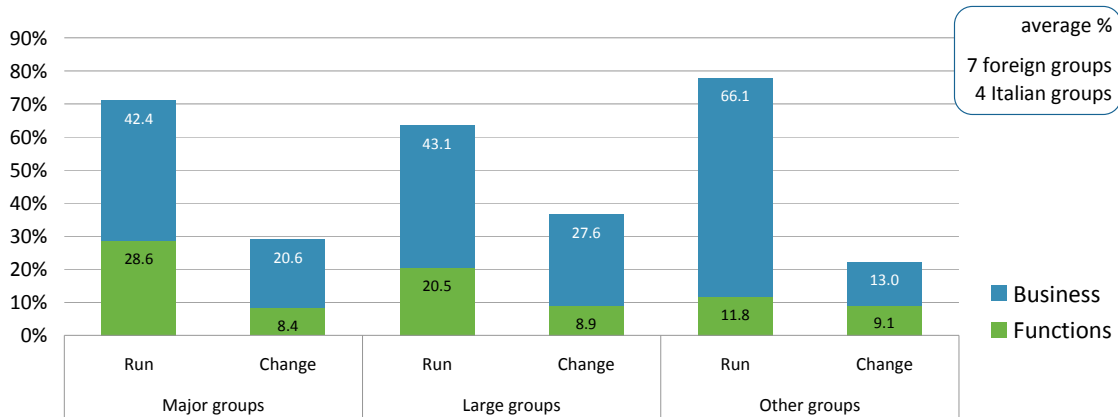


**Figure 57. Infrastructure integration and optimization (by size)**

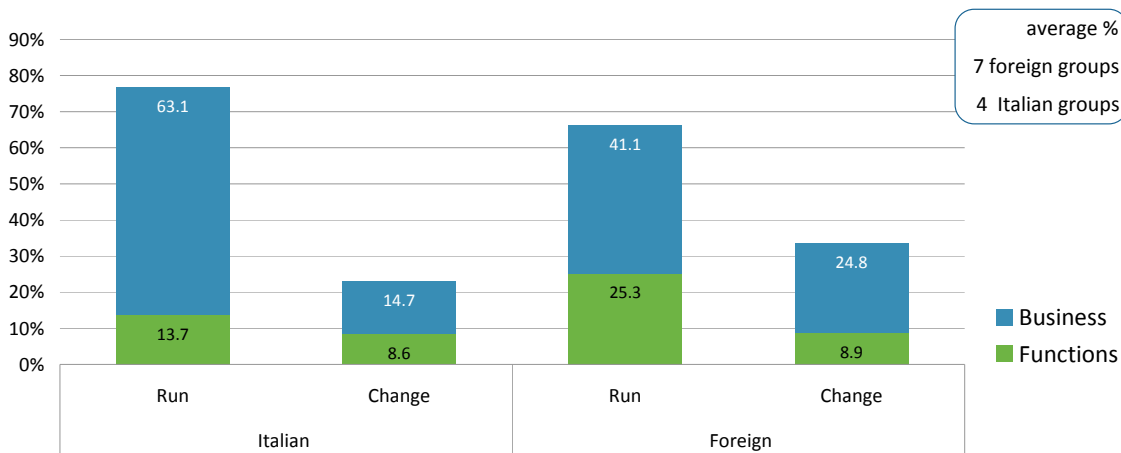




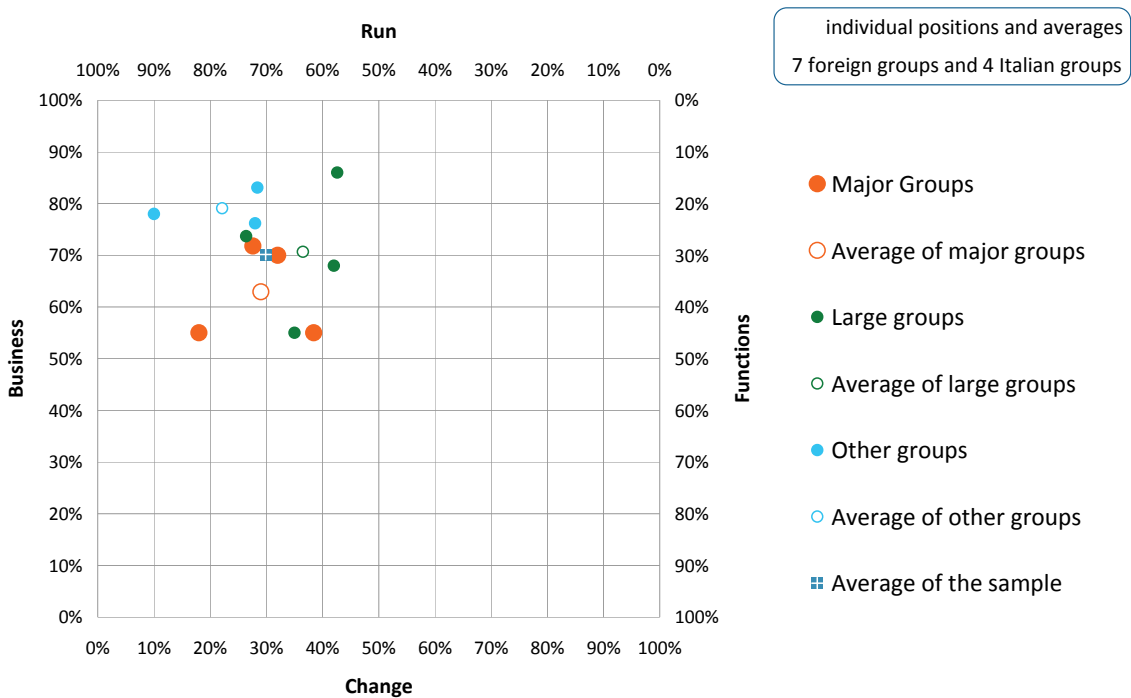
**Figure 58. Cash outlays: run the business vs change the business (by size)**



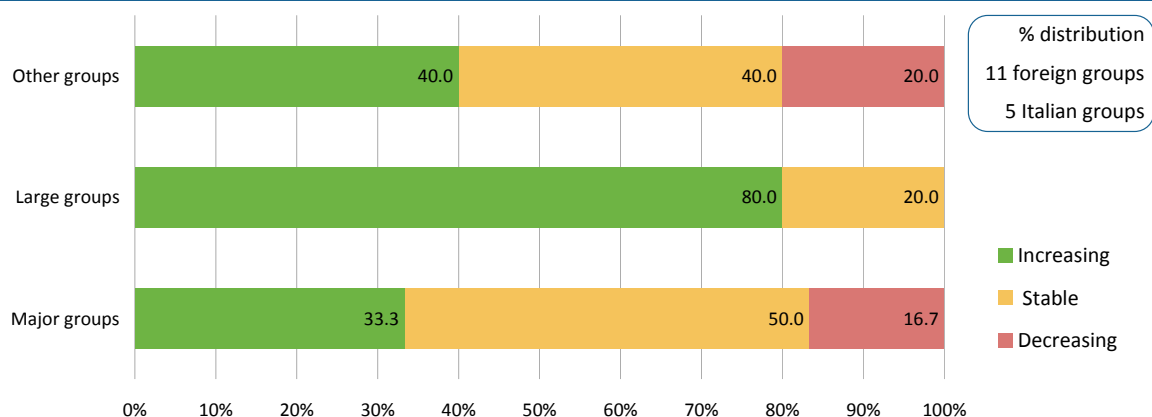
**Figure 59. Cash outlays: run the business vs change the business (by nationality)**



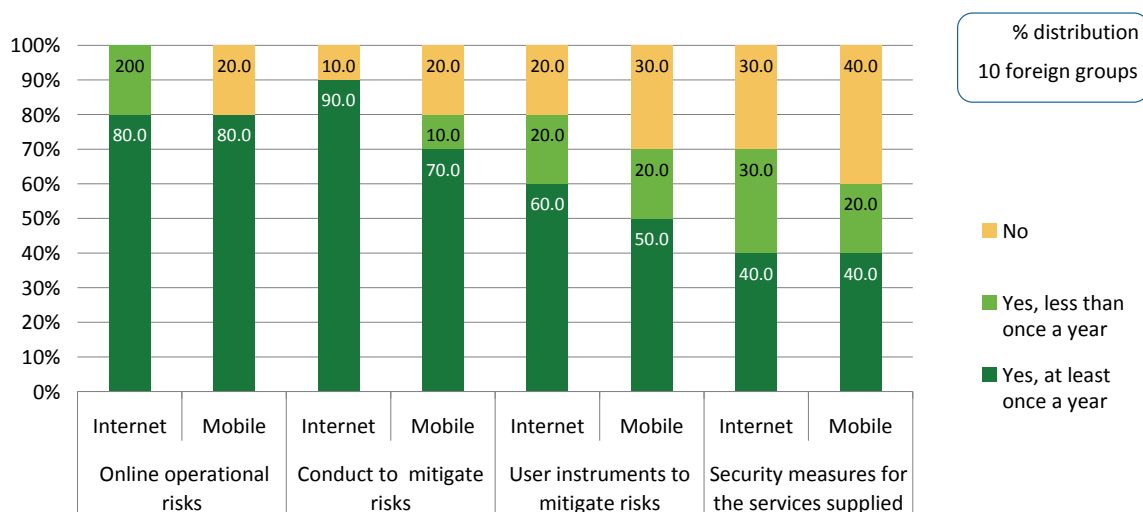
**Figure 60. Cash outlays: run the business vs change the business (individual groups)**



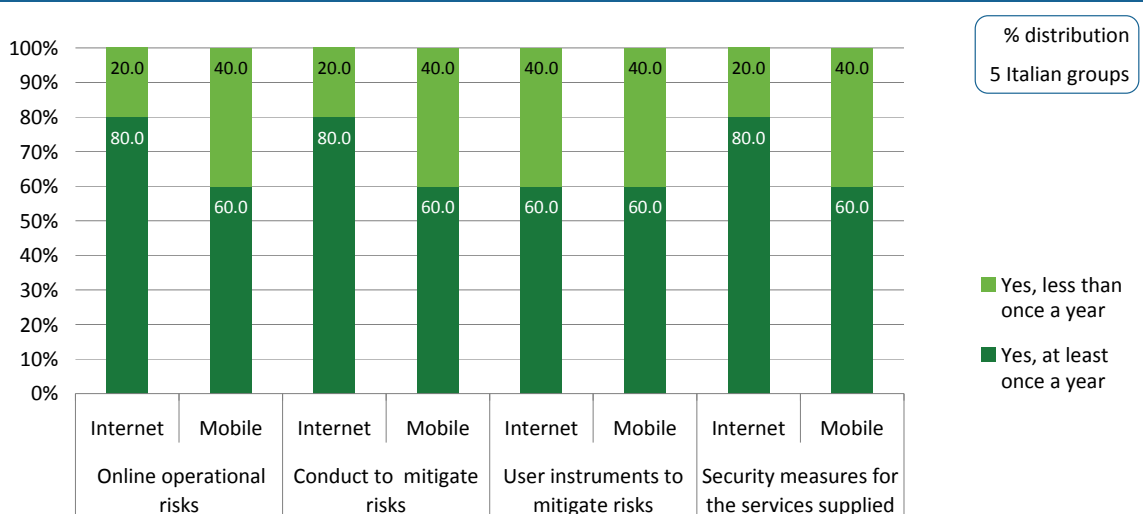
**Figure 61. Forecast trend of spending on technological innovation (by size)**



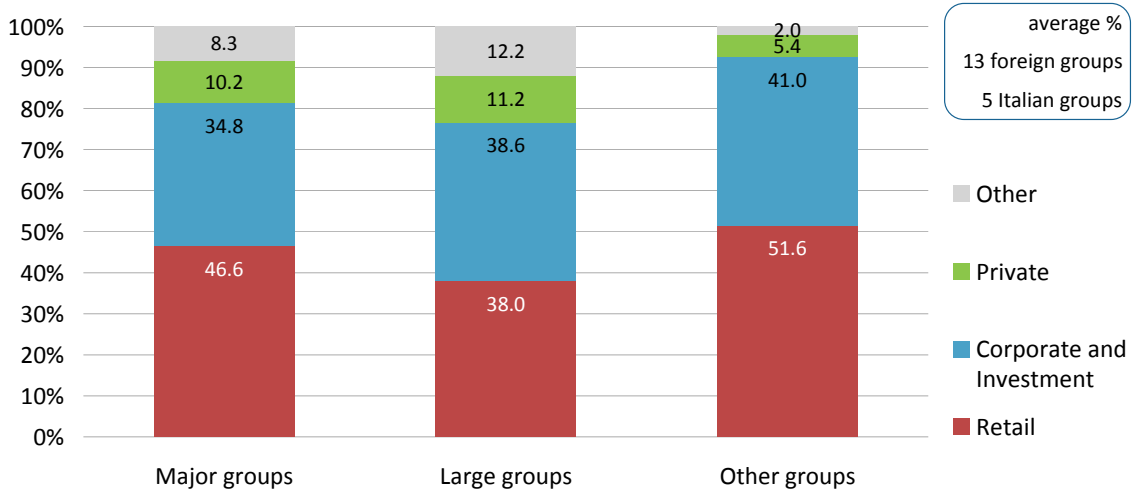
**Figure 62. Risk mitigation initiatives for telematic services: foreign groups**



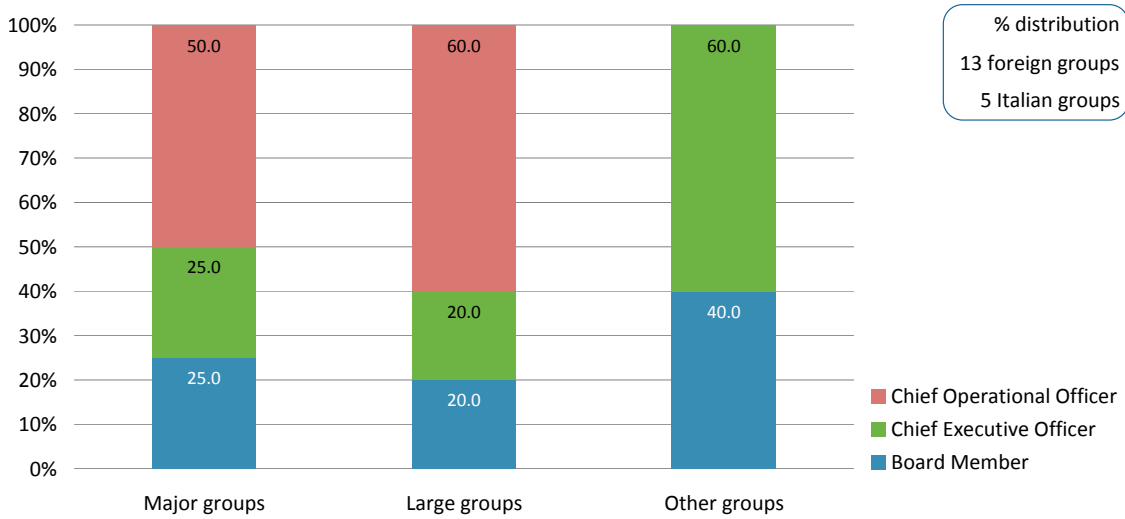
**Figure 63. Risk mitigation initiatives for online services: Italian groups**



**Figure 64. Banking activity by size of group**



**Figure 65. Person to whom the CIO reports by size of group**





Printed by the  
Printing and Publishing Division  
of the Bank of Italy