

European key IT and Management Issues & Trends for 2014

Results of an International Study

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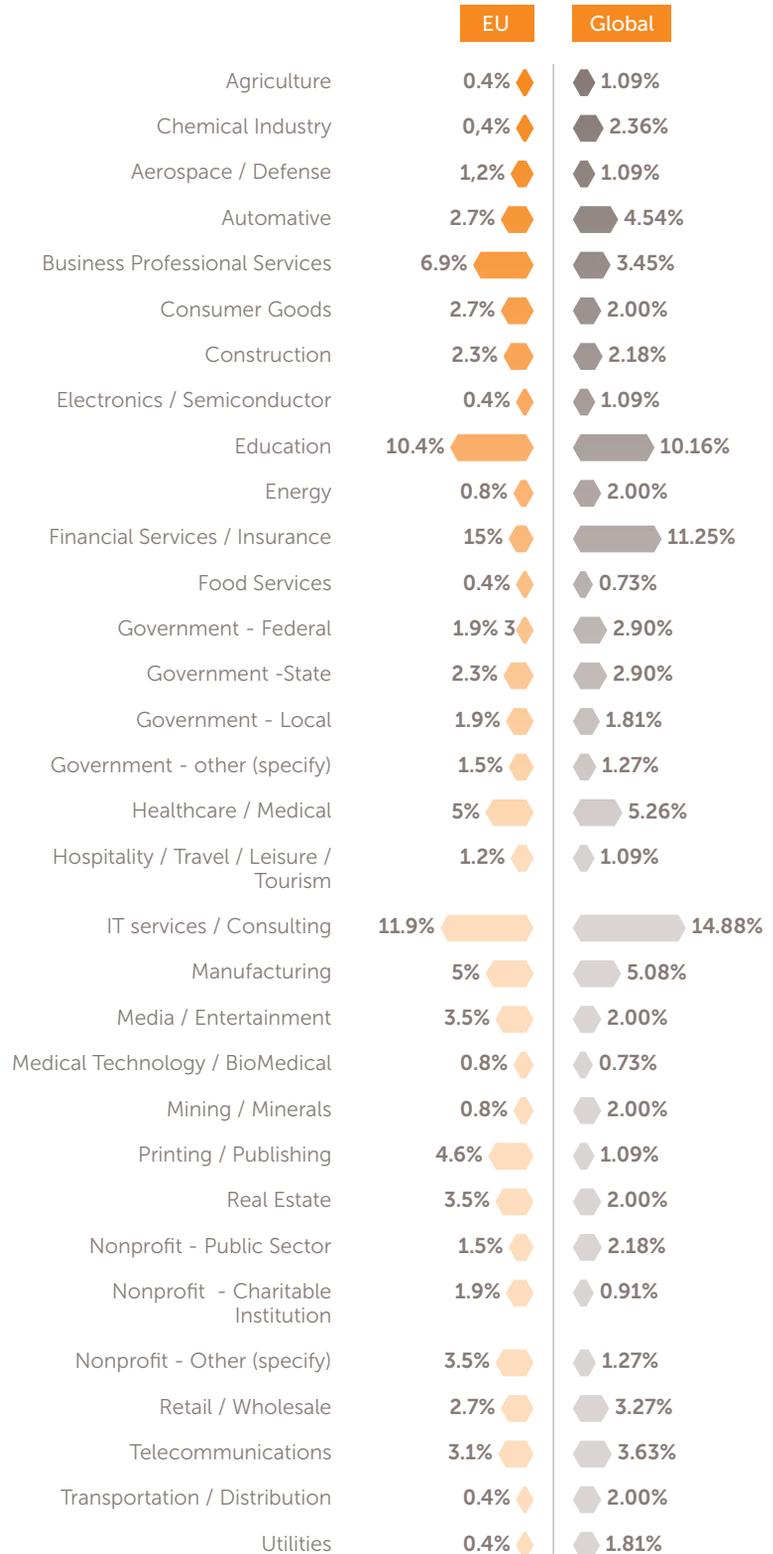
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The six areas focused on in the report are:

1. Top IT Management Concerns
2. Top Application and Technology Investments
3. Global Most Worrisome IT Management Concerns (what keeps you awake at night)
4. IT Budget Allocation
5. IT Organizational Considerations
6. Possible Megatrends



Introduction

Since 1980, the Society for Information Management (SIM), in a joint effort with different academic leaders, has conducted an annual survey of the key issues facing IT executives in the United States. In 2010 the results of the Society for Information Management and the European IT Trends survey results on Business & IT Trends (since 1994) by Business & IT Trends Institute (BITTI.nl) were combined, providing a global benchmark (other management groups were engaged to collect data from Asia, Australia and Latin America). In addition to the global perspective, one of the important strengths of this research lies in its ability to identify important trends by comparing survey data based on a similar sample from previous years.

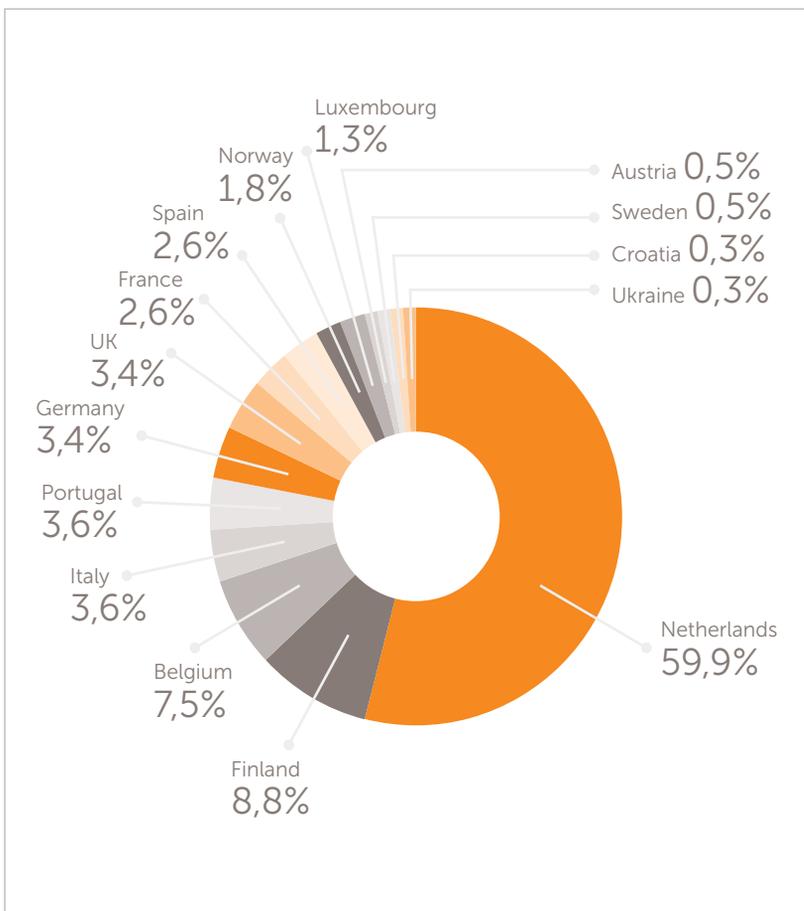
The 2013 survey, conducted in the summer of 2013, focused on four important areas:

1. Management concerns
2. Application and technology investments
3. Organizational issues (IT budgets, IT staff salaries, CIO roles, IT organization structure)
4. IT Metrics

Participants were asked to rate the importance of 39 managerial concerns, 51 application and technology opportunities, and 18 organizational considerations.

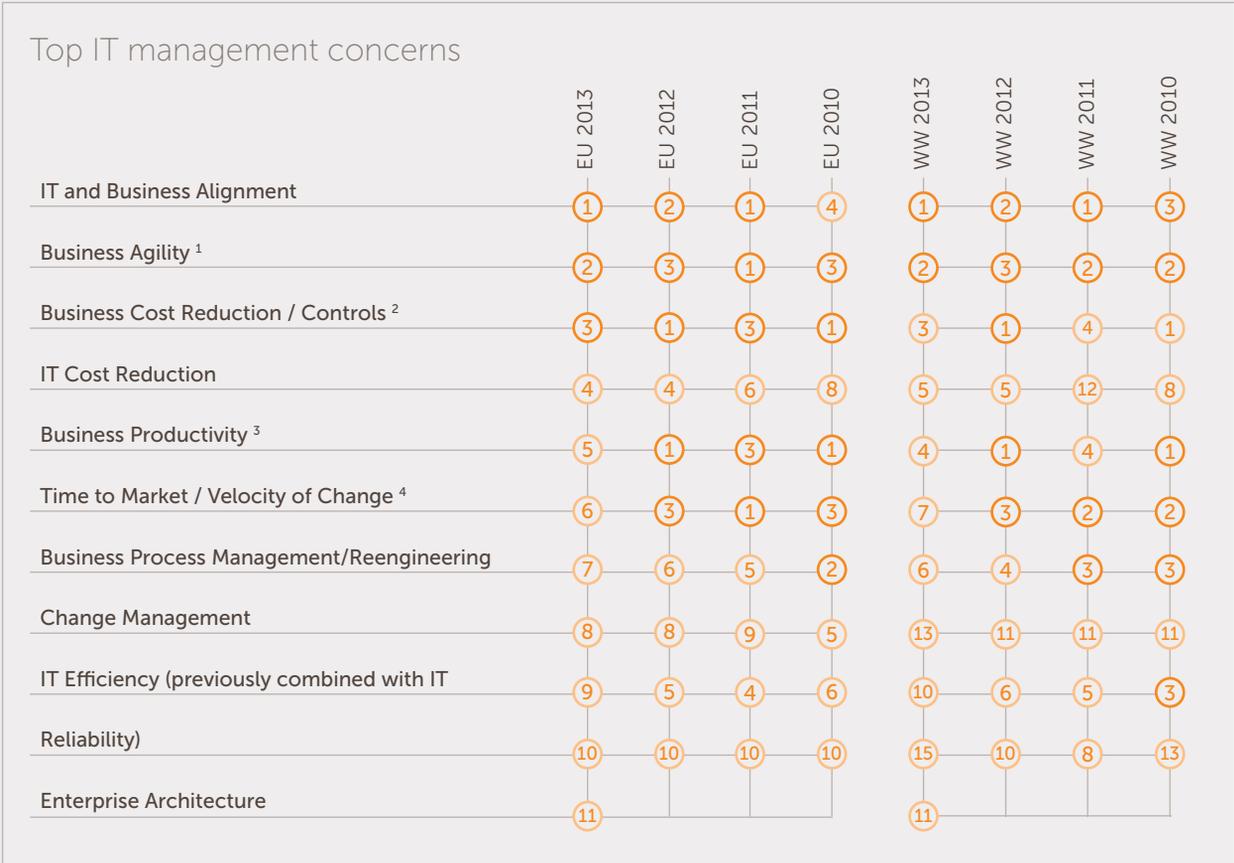
The recognition of the global reach of IT, especially in light of the impact of both the European and global economic crisis, has amplified the necessity to obtain responses from organizations around the globe to understand similarities and difference across geographies. Hence, this year the same survey was conducted in five major geographies; namely, U.S., Europe, Asia, Australia, and Latin America. The global results will be published in major papers such as JIT. In total 1,232 organizations worldwide contribute to the research.

This paper focuses on the major insights gained from the survey in Europe, and compares the results to the global results as well as previous years' results. It is based on IT executives that are members of CIONET Europe (CIONET.com) and Business & IT Trends Institute (BITTI.nl). This paper is based on the responses from IT executives representing 406 Western European organizations contributing to the Strategic Information Management survey (See figure and table for participant demographics). The important management concerns are shown on the next page. The figure on the left provides a breakdown of respondents based on their geography and the table on page 2 provides a breakdown of the respondents by industry. Based on the responses the European countries discussed in this paper are: Netherlands, Finland, Belgium, Italy, Portugal, German, U.K., France, and Spain. The other European countries have too little response to provide reliable figures on country basis itself.



Percentage of Respondents by Geography

1. Top ten IT Management Concerns



The top 10 management concerns tend to evolve slowly albeit the severe recession begun in 2007 continues to impact some of the management priorities projected for 2014. Three European and global concerns that have traditionally remained on the top ten list during this period: IT and business alignment, business productivity, and business cost reduction (Luftman et al, 2013, Derksen and Luftman, 2013, Luftman and Benzvi, 2010b). This year, the three most important European management concerns are: business agility, business cost reduction, and the perennial IT and business alignment.

- ¹ Business Agility & Time to Market were combined in previous years
- ² Business Productivity & cost reduction were combined in previous years
- ³ Business Productivity & cost reduction were combined in previous years
- ⁴ Business Agility & Time to Market were combined in previous years

Top IT management concerns (Countries)

	Europe	Belgium	Finland	France	Italy	Germany	Netherlands	Norway	Portugal	Spain	UK
Alignment of IT and / with the business	1	2	1	1	2	1	1	16	1	2	2
Business Agility	2	1	3	5	3	6	3	6	3	5	4
Business Cost Reduction / Controls	3	6	13	3	5	3	2	5	6	1	1
IT Cost Reduction / Controls	4	17	5	4	9	7	4	2	2	4	6
Business Productivity	5	3	2	6	6	4	7	3	14	3	3
Time-to-Market / Velocity of Change	6	4	9	2	1	2	6	8	15	9	7
Business Process Management	7	5	21	13	13	22	5	7	7	8	21
Change Management	8	12	6	18	7	5	10	9	16	10	8
IT Efficiency	9	8	7	7	10	13	16	23	5	25	17
Enterprise Architecture	10	20	4	21	21	10	11	19	4	21	9
IT Service Delivery	11	13	14	8	15	9	14	1	17	7	5
IT Strategic Planning	12	14	10	9	22	18	12	20	18	22	22
Business Continuity / Disaster Recovery	13	18	17	19	16	15	9	18	10	20	13
Security	14	9	16	15	20	17	8	17	19	19	12
Integration	15	21	27	22	14	23	13	21	8	23	15

From a country perspective the European management concerns vary. Interestingly business agility is of lesser importance in Germany and Norway (ranked 6th) which is more focused on time to market/velocity of change (ranked 2nd) for Germany and IT cost reduction/controls in Norway (ranked 2nd). Also, Portugal ranked IT cost reduction as priority 2. Although this is related to the economic crisis, in previous research the northern countries ranked IT cost reduction as a higher priority than other countries,

which were/are affected stronger by the economic crisis (Spain, Italy). This year a higher level of variation occurs in which northern European countries such as Belgium, Germany, and the U.K. ranked IT cost reduction outside the top 5. In Italy the number 1 IT management concern is Time to Market/Velocity of Change, which implies that Italy is trying to leverage IT to increase their market position. Finland, France, Germany, Netherlands, and Portugal have IT and business alignment ranked 1st, supporting the view that a mature

level of IT and business alignment is important to realize revenue generating IT innovations. Unfortunately IT cost reduction is still ranked higher in Europe than other geographies; see discussion below. Europe is running behind in realizing revenue generating IT innovations. However, the good news is that IT cost reduction did not enter the top 3; it remained in the 4th place.

1. IT and business alignment

Alignment of IT and business continues to be elusive, and in all of the geographies it ranks in the top ten management concerns; ranking 1st in both the world and Europe. The importance of IT and business alignment is often seen as a return on investment. IT business alignment maturity can be measured (Luftman, 2003) and higher maturity in this measurement model results in a better return on IT investment (Luftman 2012, Derksen, 2013, Poels, 2006). Demonstrating a significant positive correlation between alignment and company performance, both European and U.S. organizations are proceeding to work at higher alignment levels. Despite this effort, IT and business alignment remains a top 10 IT management concern since 30 years. It is not a question of being aligned or not aligned; it is a question of improving the IT-business relationship. Considering the persistent pervasive ranking of IT and business alignment, there is no excuse for not reaching higher levels of alignment maturity and accepting the perception that IT and business alignment is a constant process.

2. Business agility

Business agility is ranked 2nd in Europe as well as globally. Business agility is essential for business survival in an uncertain and volatile economy, and is especially important as IT is leveraged to reduce business expenses and generate revenues. The improved ranking of business agility is testimony to that. Regional business agility is also fundamental. Both the European and U.S. results demonstrate this well because over the past couple of years business agility has moved up from the mid-teens to the number 1 European management concern in 2012 and is now number 2. It should be noted that business agility along with business productivity and cost reduction are the foundation for long term competitive advantage, and therefore it is anticipated that these concerns will continue their top five ranking. This result suggests that the downturn in the European economy has driven organizations to focus on responsive IT approaches that can deliver immediate value. Business Agility has become essential for business survival in today's economy.

3. Business productivity/ Controls

Business productivity and controls also appear as a top concern in all geographies (ranked 3rd within Europe). It has recently gained momentum with a number 1 position universally in 2010. It ranked 1st in the top management concerns globally last year and is currently ranked 3rd globally.

Interestingly in this context, the management concern revenue-generating IT projects has been a top 10 management concern since 2009 but ranked 16th in 2013 globally and 19th in Europe. This dramatic decrease of ranking might be because of the cost focus internally instead of creating a competitive advantage. The focus on business and IT costs seem to be in line with the current focus within Europe and is something to monitor over time.

IT leaders in most demographics see IT as an integral driver/enabler of efficiency/effectiveness in other parts of the business and therefore focus on initiatives that enhance the maturity of alignment between IT and business. While IT business alignment has been recognized for over 30 years as a persistent problem, it is clear that it is pervasive and persistent.

4. IT cost reduction

With the lingering economic conundrum, IT cost reduction is acknowledging its position in importance within Europe, as well as globally. Although it is still high on the management agenda (remaining in 4th position) it did not enter the top 3 in Europe or globally (where it remained in 5th position). This might indicate a slowdown of the economic downturn, and this research provides the first indications of this reversal (or at least an end to the persistent increased perception that things are deteriorating). Europe still tends to be more cost oriented in comparison with the other continents. IT cost-reduction is ranked 4th in Europe, as opposed to the other continents (ranked 5th globally, U.S., Asia, Australia and 24th in Latin America) and business productivity is ranked 4th globally, 3rd in the U.S. and ranked 11th in Europe.

During economic downturns, business executives usually expect all organizational functions, including IT, to greatly reduce their expenses and budgets. In previous recessions IT was typically the first organization to have their budgets reduced; in this economic period, IT cost-reduction has only recently risen as a high priority, likely because of the length of time and economic uncertainty. As the economy gets better, those pressures usually ease. During the research period the first signs of economic return arrived, which can be seen in a number of figures in this paper. In the coming research periods we expect that IT cost-reduction will leave the top 5 management concerns.

The IT cost-reduction, and the importance of improving business productivity is in line with the findings of Luftman and Ben-Zvi that the current trend seems to be unique in this recession (Luftman and Ben-Zvi, 2010b); instead of simply cutting IT budgets, IT leaders seem to be responding to this recession by focusing on IT as an enabler/driver of business productivity. Even though data for individual countries are not reported in this paper, it is interesting to note that this trend is present in all geographies except for Europe. Within Europe business productivity and cost reduction are ranked third but IT cost-reduction is also among the top 5 management concerns coming in fourth place. Having both IT cost reduction and business productivity & cost reduction within the top 5 management concern might create conflicts in managing both concerns if not managed effectively.

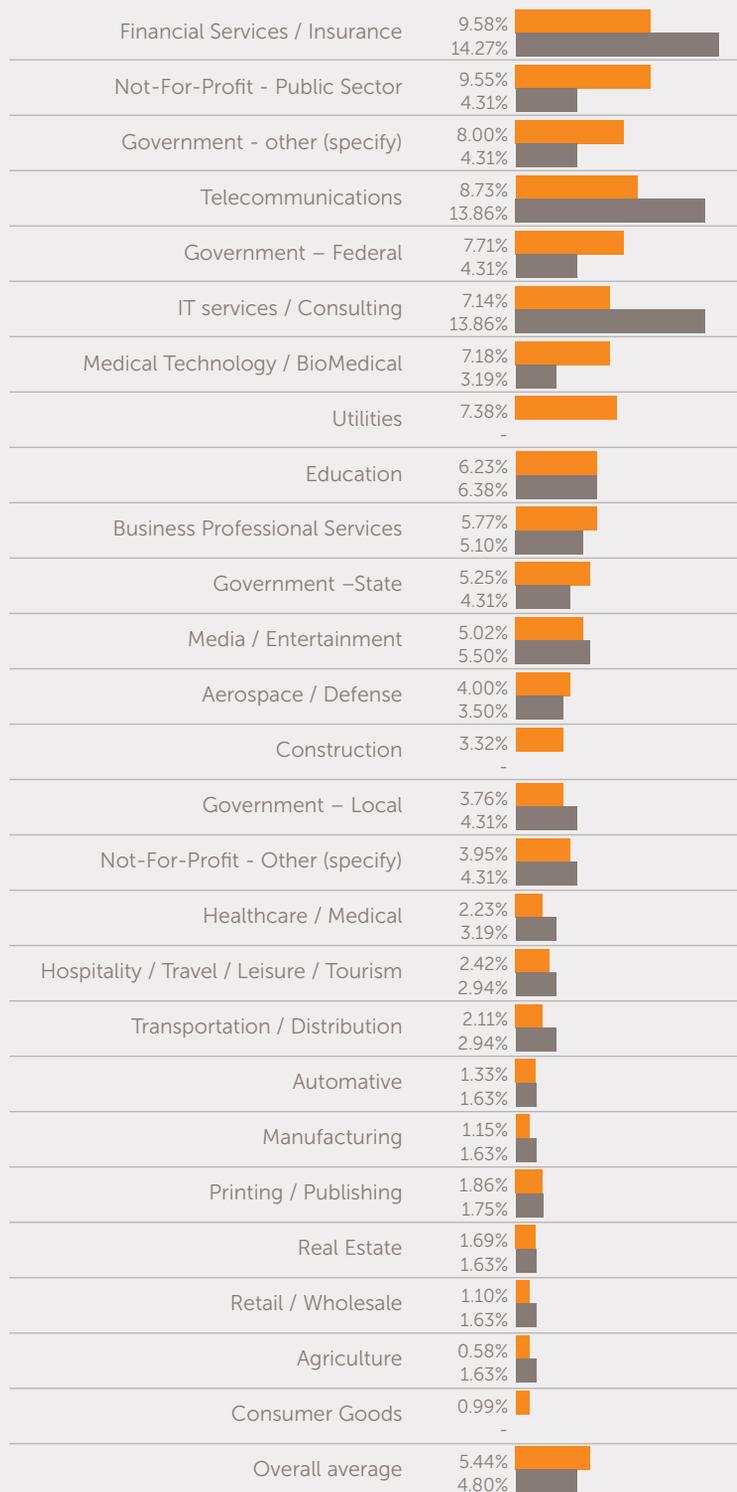
IT cost reduction refers to the costs of realizing, implementing and managing IT. One of the most used comparison methods is the usage of Total Cost of Ownership methods starting with measuring the percentage of revenues spend on IT shown in Table 3 (blanks indicate that there is not enough valid responses).

5. Business Productivity

Moving down from first place to #5, 60 organizations ranked business productivity as their number one management concern. This management issue was introduced to the research in 2007, and has been ranked as a top-ten concern ever since.

BPR is by definition 'process-centric'. More recently BPM has emerged as a more holistic approach focusing on integrating all aspects of the organization. It has become an important tool to take advantage of BPR initiatives. BPM is utilized to streamline end-to-end management of the whole enterprise (enterprise-centric). During the economic downturn, as organizations focus on leveraging IT to reduce expenses by enhancing business processes and as the recovery from the recession gets underway, large and small corporations need to compete in a globally-linked market place, it is expected that business process management and reengineering will remain a top management concern globally. The high ranking of ERP as an important application and technology (discussed later in this paper) provides further support for this important consideration.

IT budget as percent of revenue by industry classification



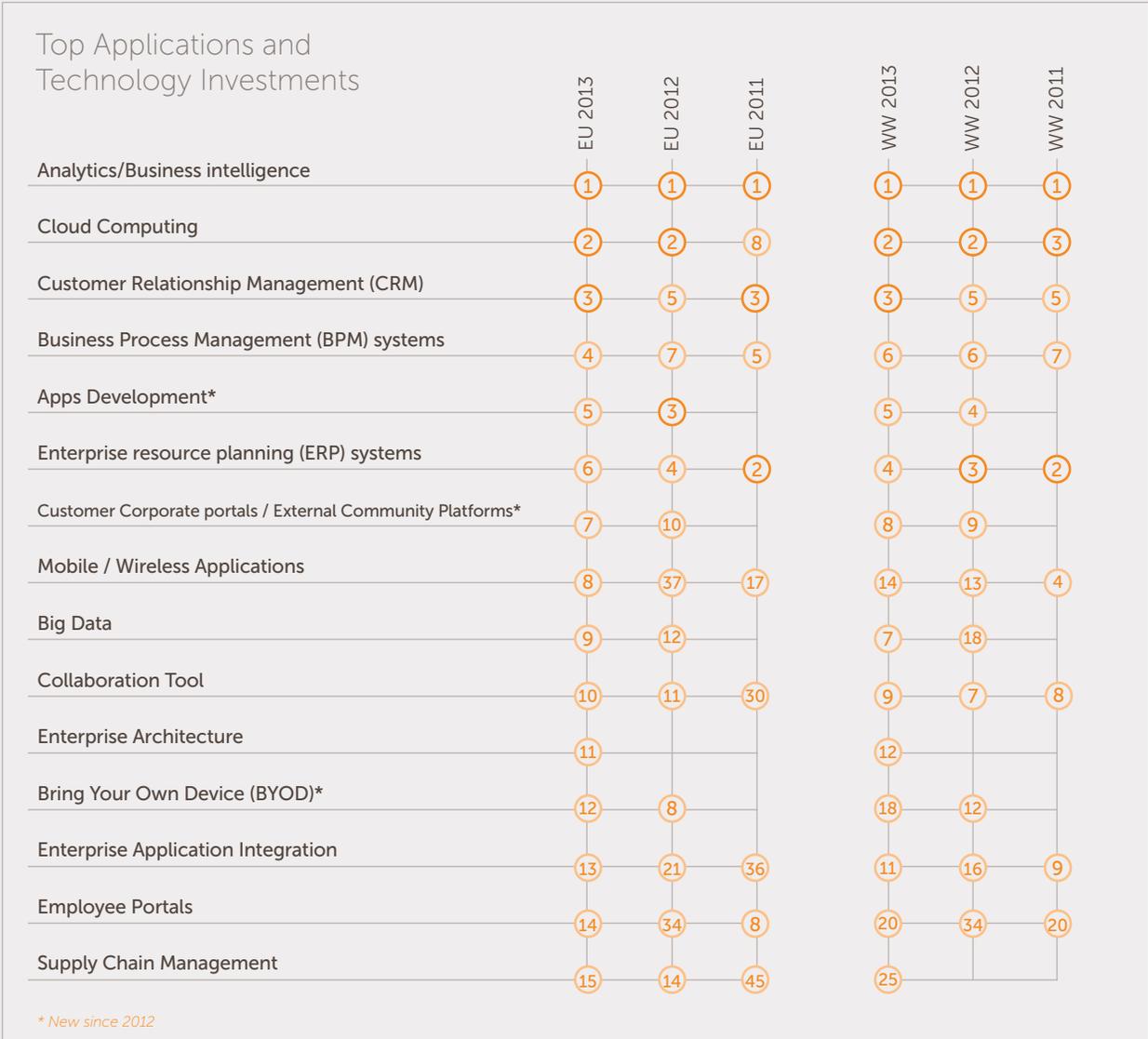
Both the European based Telecommunications (8.73%) and finance/banking/insurance industry (9.58%) have a significantly lower IT budget as percent of revenue in comparison with the 2012 research results (14.27% and 13.86%). This might indicate lower IT investments in these industries as well as higher advantages of using Cloud and IT Outsourcing. The majority of the responses came from EU-based organizations, which did invest heavily in integration across country borders. It is likely that the IT budget as percent of revenue by industry classification will be "corrected" in the next few years to become closer to the global percentages. This statement is already partly visible when looking at the 2012 figures

(none of the industries were above the ten percent). From a country perspective the northern European countries seem to invest more in IT in comparison with the southern European countries. The U.K., the Netherlands, and Germany are known for their financial sector. Within Germany the manufacturing industry (e.g. cars) is large which might influence the German figure displayed below. Taking this in consideration the IT budget as percent of corporate revenues seem to be more dependent on Industry than country.

IT budget as percentage of corporate revenues per country (2013).



2. Top Applications and Technology Investments



The top five applications and technologies does not differ much between Europe and global organizations, except for Enterprise Resource Planning (not in the EU top 5, but ranked 3rd globally) and Business Process Management Systems which is ranked 6th globally and 4th in EU. The big differences are the higher European ranking for Business Process Management Systems and Enterprise Resource Planning. The

top five applications and technologies for 2013 are discussed (and illustrated in the Tables) below with comparisons across the surveyed geographies.

Looking from a country perspective the ranking of customer relationship management (CRM) in Spain is remarkable (15th). An explanation can be found in a more internal organizational focus instead of looking beyond the organiza-

tional borders. For Norway the ranking of collaborations tools (1st) is interesting. Norway is historically a country, which is highly digitally cooperative with other countries.

Top Application and Technology Development per country

	Europe	Belgium	Finland	France	Italy	Germany	Netherlands	Norway	Portugal	Spain	UK
Analytics/Business intelligence	1	1	1	3	5	2	2	2	1	1	1
Cloud Computing	2	15	5	2	2	4	1	3	2	2	9
Customer Relationship Management (CRM)	3	2	3	1	1	3	11	6	9	15	3
Business Process Management (BPM) systems	4	10	6	20	3	10	4	15	3	7	22
Apps Development*	5	5	28	7	9	19	3	14	11	9	10
Enterprise resource planning (ERP) systems	6	3	2	6	6	1	13	7	10	8	4
Customer Corporate portals / External Community Platforms*	7	6	4	8	10	20	8	4	4	4	23
Mobile / Wireless Applications	8	16	12	9	7	21	6	8	12	3	11
Big Data	9	17	19	11	17	22	5	9	14	17	5
Collaboration Tool	10	4	9	10	16	11	12	1	13	16	2
Enterprise Architecture	11	26	10	21	18	12	9	16	7	5	12
Bring Your Own Device (BYOD)*	12	18	13	22	19	13	7	17	15	18	24
Enterprise Application Integration	13	7	7	23	20	5	15	10	21	10	25
Employee Portals	14	11	14	24	11	14	14	11	22	19	27
Supply Chain Management	15	12	20	4	4	6	25	28	23	6	26

1. Analytics/Business Intelligence

Analytics/Business intelligence (BI) remained the top application/technology (a clear standout), having been in the top 3 since 2003. BI includes big data – analytics and data mining to identify valuable business trends. Global research conducted by Oxford Economics identified business intelligence as the 2nd top technology for the next five years.¹ That research also revealed how companies value the ability to analyze information to rapidly inform decision-makers. An IBM MIT Sloan Management report revealed that companies that harness the power of big data and analytics outperform those that do not by 220%.² An IDC study on the financial impact of business intelligence identified a 5-year Return on Investment of 112%.³

European companies ranked business intelligence as their top application and technology development. Only Italy placed business intelligence outside the top three. In the U.S. it is also ranked first where it has also been ranked 1st in 2009 and 2010, 2011, 2012, and 2nd in 2006, 2007, and 2008 (Luftman et al. 2013, Derksen and Luftman, 2013, Luftman and Ben-Zvi, 2010b, Luftman and Ben-Zvi, 2010a). Since business intelligence leverages data mining to identify valuable insight, this high ranking across these geographies suggests that IT leaders believe their organizations are data-rich and insight-poor (Luftman and Ben-Zvi, 2010b). Another reason for the business intelligence number 1 ranking is the increasing role of best practices such as COBIT (Control Objectives IT). Having business intelligence supporting reports with regards to the best practices supports management control objectives as well as discovering and correcting errors in the business.

2. Cloud Computing

Cloud computing was new to the list of key technologies in 2009, when it was ranked No. 17. In 2010 it jumped to No. 5 and in 2012 it ranked 2nd in Europe. The second place is also given for 2013. Belgium and the U.K. placed cloud computing outside the top 5. At first glance this jump in ranking might suggest that cloud computing is now better understood and the solutions have become more mature.

What seems to be happening is that some organizations, regardless of geography, are just considering Cloud opportunities, while others are piloting less complex services, and others are embarking on migrating “more important” services; some in-house and others outsourced. Again, Cloud is relatively new, and the challenge would seem to be for IT organizations to work with their business partners to understand how best to proceed (Willcocks and Lacity, 2012). Most importantly is to recognize that the Cloud will provide the dominant infrastructure for future IT initiatives.

Of the Cloud based services, 26% is external Cloud compared to 74% internal Cloud based services in Europe in the 2013 research. This percent of external Cloud based services is lower than other continents such as the U.S. (54% external), Latin America (52% external) and Asia / Australia (29%). Globally about 44% of the Cloud based services are external.

3. Customer Relationship Management (CRM)

Customer relationship management (CRM) was 6th in Europe in 2010, 3rd in 2011 but 5th in 2012 and 3rd in 2013. The increased ranking in 2011 is likely a response from organizations, because of the economic downturn, to invest more on enhancing customer relations/intimacy. Related to this response are the IT management concerns Business Agility & Speed to Market as well as Business Productivity & Cost Reduction. The CRM application investment is often related to ERP both as a module of ERP or as an interface to ERP. Another related top 5 ranked IT application & technology is Business Process Management systems managing the workflow between the systems such as CRM, ERP and Business Intelligence. According to Gartner Inc., the worldwide social CRM market (which is subsumed in social networking) is forecast to reach over \$1 billion in revenue by year-end 2012, up from approximately \$625 million in 2010⁴; this market is projected to total \$820 million in 2011. It should be noted that SaaS applications ranked No. 2, and the current leading application is Salesforce.com. The return on investment of CRM is approximately 3 years⁵ with the average increased revenues at 16.3%⁶.

4. Business Process Management (BPM) systems

Business Process Management (BPM) systems is ranked 4th in Europe and 3rd in Latin America. In the U.S. it is ranked 10th. The thought of having a system which manages the primary and secondary business processes, has existed for a long time and remains high on the IT application & technology list. This is further driven by the economic downturns demand to quickly leverage IT to reduce business expenses. Despite the relatively high level of implementation within Europe, BPM is still one of the top ranked applications & technology trends. This management concern was outside the top ten in the pre-recession period, and ranked 18th in 2008. In the period 2009 up to today, it ranked in the top five on a global scale.

5. Apps Development

In 5th place in the ranking of IT application and technology is Apps development. This is a trend which is new to the survey since 2012. In the past few years it is relatively easy to say that Apps have made a huge impact in Europe. As a result European organizations started to introduce a 'Bring-Your-Own-Device' policy (ranked 12th) and placing major applications behind an App vehicle (Derksen, 2011).

These changes are expected to impact business architecture, security, as well as the applications and technology used within organizations, especially for previously discussed application and technology investments that will need to interface to mobile & wireless applications.

¹ Oxford Economics, 2011, "The new digital economy: How it will transform business".

² 2011 IBM MIT BI report is: <http://sloanreview.mit.edu/feature/achieving-competitive-advantage-through-analytics/>

³ Morris, H., 2003, "The Financial Impact of Business Analytics: Build vs. Buy", DM Review, (13)1, pp.40-41

⁴ Gartner Press Release, "Gartner Says the Market for Social CRM Is on Pace to Surpass \$1 Billion in Revenue by Year-End 2012", August 30, 2011, <http://www.gartner.com/it/page.jsp?id=1777938>

⁵ Derksen, B., (2011), 'Trends in Business & IT 2012-2013', November 2011, p.p. 143.

⁶ CSO Insights' 2010 Sales Performance Optimization Study and <http://www.destinationcrm.com/Articles/Columns-Departments/Articles/Columns-Departments/Reality-Check/Has-CRM-Lost-Its-Revenue-Mojo-66859.aspx>

3. Global most IT management concerns keeping the CIO awake at night

New to the survey are the things that keep the CIO awake at night (most worrisome). Next to the IT management concerns and IT Trends discussed in parts A and B, the CIO was asked to provide a ranking of those things that keep him/her awake at night. In Table 5 the global top ten IT management worries is provided compared with the surveyed continents.

What keeps the Management 'awake at night'

	Global	US	Europe	Asia/ Australia	Latin America
Alignment of IT and / with the business	1	1	1	1	1
Security	2	2	2	8	17
CIO Leadership Role	3	11	3	22	5
Talent / Skill Shortage	4	12	4	3	21
Business Agility	5	3	5	25	8
Change Management	6	13	6	5	19
IT Strategic Planning	7	14	15	14	2
Business Productivity	8	8	9	2	4
IT Efficiency	9	7	11	19	6
Business Process Management	10	15	12	17	3

In all continents Business & IT Alignment is ranked first as IT management concern that keeps the CIO awake at night. Security is globally ranked second but is outside the top 5 for Asia, Australia and Latin America. The CIO Leadership role is most discussed within Europe and is ranked third. Interestingly talent / skill shortage rank fourth globally and within the top 5 in the three continents Europe, Asia and Australia. This is interesting while it is outside the global top 15 as a management concern (Table 2). This management concern is ranked 28th global and 26th within Europe.

When looking at the IT Trends most worrisome perspective the number one and two are the same as the IT Trends largest investments. But security ranked 3rd globally and 1st within Europe. Whereas security is outside of the top 5 IT Trends (Table 4). Security is ranked 18th within Europe and 16th from an investment perspective. BYOD is ranked 4th from an awake-at-night perspective but is 12th from an investment perspective.

IT Trends keeping the CIO awake at night

	Global	US	Europe	Asia/ Australia	Latin America
Analytics / Business Intelligence	1	1	2	3	1
Cloud Computing (e.g., SaaS, PaaS, IaaS)	2	4	3	8	2
Security	3	2	1	27	7
BYOD (Bring Your Own Device)	4	5	4	6	24
Customer Relationship Management	5	10	8	1	5
Big Data	6	11	6	7	8
Legacy Applications	7	8	5	13	32
Business Process Management Systems	8	12	12	24	3
Enterprise Architecture	9	6	7	18	21
Enterprise Resource Planning	10	9	17	16	4

4. IT Budget Allocation

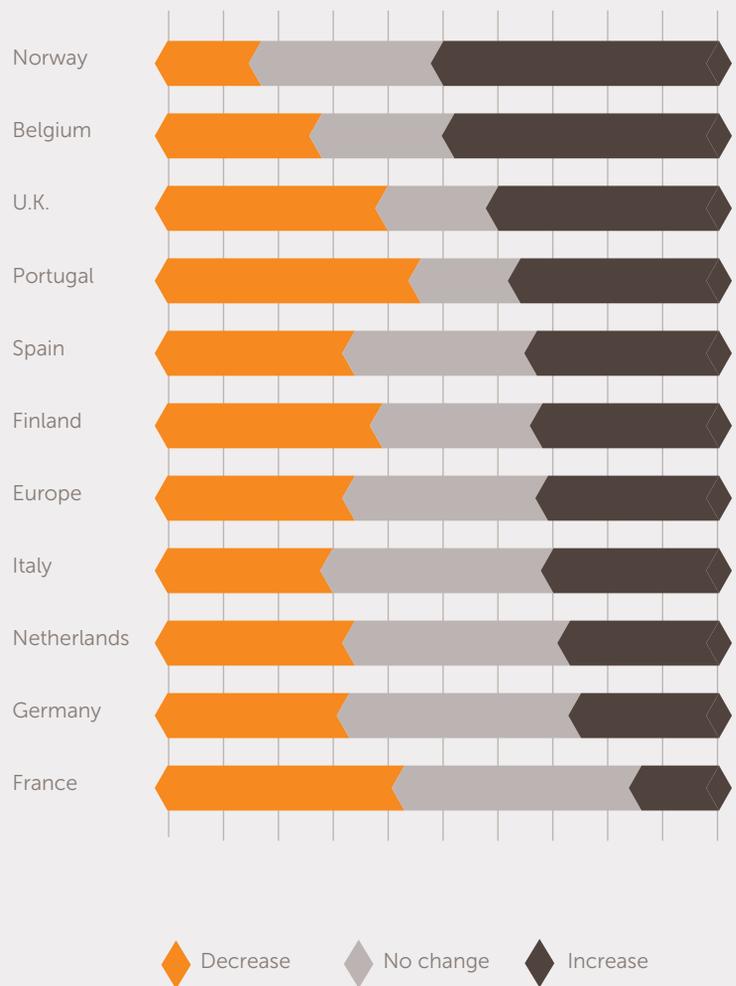
This section discusses the survey findings related to the overall allocation of IT budgets with a further discussion on staffing and compensation considerations.

1. Overall Budget Allocation Considerations

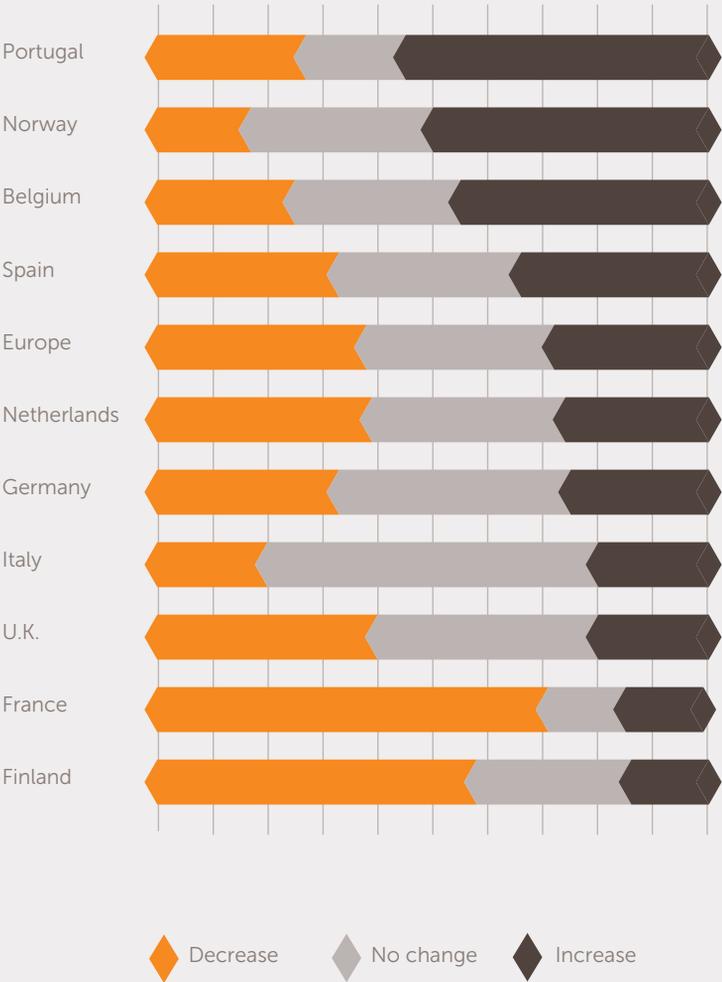
The first indications of the economic recession ending seem to be occurring as budgets are on the rise. European CIOs reported increased IT budgets in 2013 compared to 2012 with 31% of the companies in Europe (28% previous research) and 61% in the U.S. indicating increases (48% in 2012). Over 38% of Europe and 23% of U.S. respondents indicated that their IT budgets will decrease in 2014. 34% of the European companies will keep the same IT budget in 2014 as used in 2013 whereas this is just 12% for the U.S. organizations. The IT budget forecasts are better for U.S. companies in comparison with the European organizations for the third year in a row. The other continents are also more optimistic and forecasts larger increase of IT budget. In Asia/Australia 51% of the companies report increased budgets in 2014 and in Latin America, 65% of the companies did.

When looking at the European IT budget changes in 2013 Norway showed the highest increase with 50%, and France the lowest with just 14%. In Portugal 36% of the organizations had their IT budget increased where 45% reported an IT budget decrease. Within Portugal 9.1% of the organizations reported a decrease of 10% or more of the IT budget. In Norway 16.67% of the researched organizations reported a 10% or more IT budget increase.

IT budget compare: 2013 compared to 2012



IT budget compare:
2014 compared to 2013

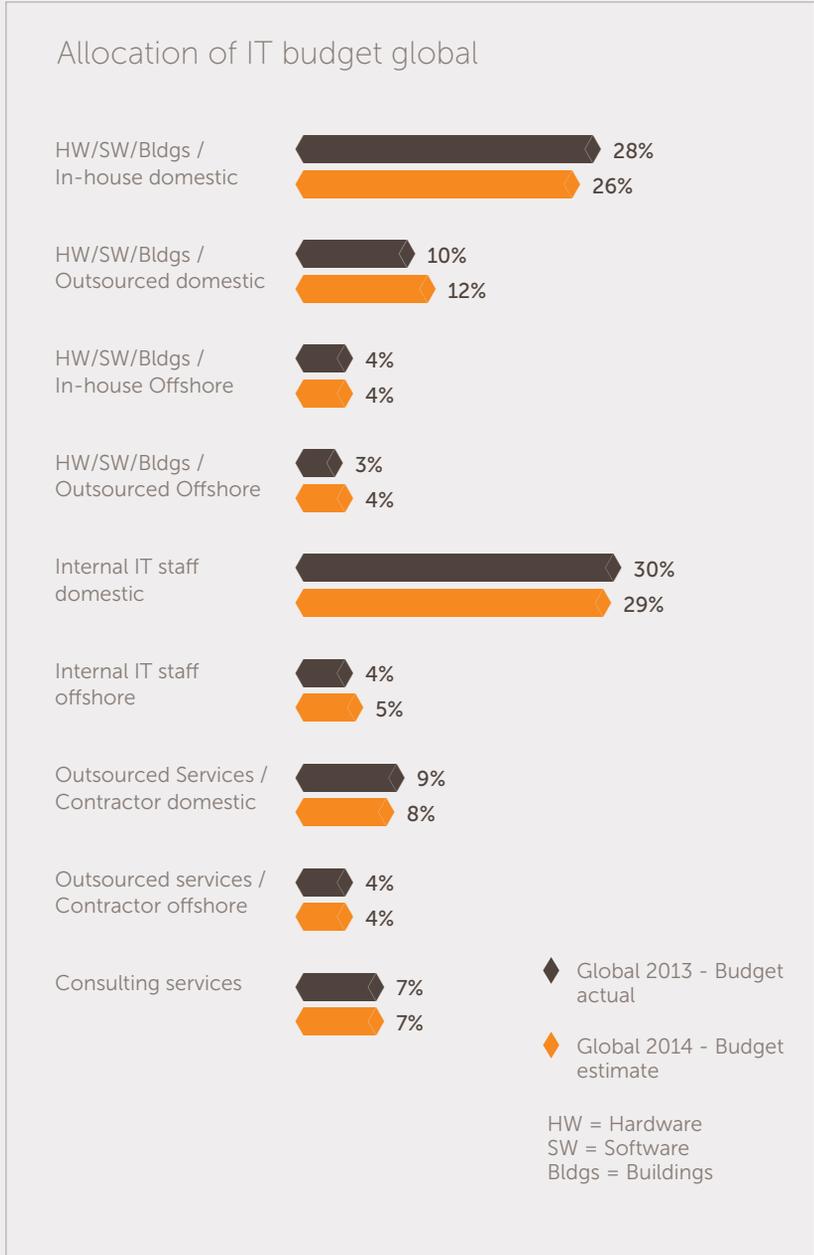


For this year's budget Portugal is most optimistic; 55% of the organizations expect an increase in IT budget. Alternatively, France and Finland are reducing the IT budgets dramatically with France being negative for two years. 28.57% of the French organizations are reporting 8% or more cuts in IT budgets. In the Netherlands 11.57% of the organizations reported IT budget cuts of at least 10%. Although most Portuguese organizations are optimistic, their budget increases are limited with 36.4% of all Portuguese organizations having their IT budgets increased in 2014 just 2%. 9.1% of the Portuguese organizations report an increase of 8% or more.

2. Allocation of IT budget

The trends for allocating the IT budget also consider the sourcing of IT resources. In this year's survey the allocation of the IT budget was addressed and the global figure is presented in the figures on the right.

For 2014 it is estimated that outsourced IT services will increase both domestically as well as offshore. This is a trend visible since 2009. In 2009 in-house domestic internal staff was 39% of the IT budget; but it is now projected to be 29.1% in 2014. The 2013 figure was 30.4%. Also the hardware/software/buildings in-house domestic started at a higher percent of 33% in 2009 and was 28.3% in 2013 and projected to be 26.3% in 2014.



3. IT Budget as a Percent of Revenues

While the often-benchmarked average IT budget as a percentage of revenue for the U.S. was 3.87 in 2010 (relatively the same as in the previous SIM surveys), it was 3.31 in Europe. In 2011 the European IT budget as percent of revenues increased to 6.36 whereas the U.S. decreased to 3.55. In 2012 the European budget decreased to 6.1% and the U.S. increased to 4.9%. The global percentage of revenue allocated to IT budget was 5.8% in 2012 which decreased to 5.6% in 2013. This year's survey showed a decreased figure of 5.4% for Europe and increased figure for the U.S. with 5.0%. An examination by industry reveals that some sectors, such as Information Technology business services, banking/finance, government and education, have IT budgets of more than 5% of their revenue. On the other hand, sectors with IT budgets which are less than 5% of their revenue are manufacturing, printing / publishing, real estate, Transportation and Pharmaceutical/Healthcare. Finance/Banking/Insurance and not-for-profit/Public Sector invest over 9% of revenue on IT. The Finance/Banking/Insurance is the number one IT budget as percentage of revenue for multiple years. The industry breakdown is comparatively consistent across geographies implicating that the IT support is mostly industry based instead of geographic or organization specific. This also implies that usage of benchmark for IT budget as percent of revenues is globally valid but industry specific (Table 3). It is important to note that this relationship is also driven by the decrease in revenues that occurred during the economic downturn.

4. IT Staffing and Compensation Considerations

It is clear that staffing (internal and external) remains the largest component of IT budgets (53.5% globally). But since 2009 the part of the IT budget for IT staffing is decreasing from 67.0% in 2009 to 53.5% projected for 2014.

The domestic sourcing budgets for internal staff is 30.8% in Europe compared with 29.1% in the U.S. and 30.4% globally. Offshore internal staff accounts for around 4.7% of the IT budget in the U.S., 4.2% globally, and 4.6% in Europe. Europe has a relatively high percent of their staff outsourced domestically (10.1%) when compared globally (8.7%). The European outsourced staff domestic is projected to increase to 11.04% in 2014 and the European outsourced staff offshore to increase to 5.8% (currently 4.2%).

When it comes to the allocated percentage of the IT budget for training/education, growth is anticipated for 2014. The percentage of budget allocated for training/education declined in 2011 from 2.8 in 2010 to 2.65 in 2011 and 2.34% in 2012, but was 3.44% in 2013, while 2.57 was expected a year earlier. Despite this growth the European continent spends less on training and education than U.S. spending 3.48 in 2010, 3.23 in 2011, 2.87 in 2012, and 4.68% in 2013. Globally 4.87% of the IT budget was spend on education/training in 2013. Over the measured years 2011-2013 4.78% was spend globally.

Regarding IT staff salaries, 50% of the European IT employees earned more in 2013 in comparison with 2012, 14% earned less. The increase in IT staff salaries is less than the U.S. where 83%

earned more in 2013 in comparison to 2012 as well as globally where 67% earned more. 2013 was a better year with regards to actual IT staff salaries in comparison with 2010, where 62% of the European IT staff salaries were either fixed or less. 2014 is projected to be a good year as well in which 43% of the IT staff can expect to have an increase in salary and 43% can expect no change (the expectation previous year was 34% increase and 66% no change (51%) or decrease (15%)).

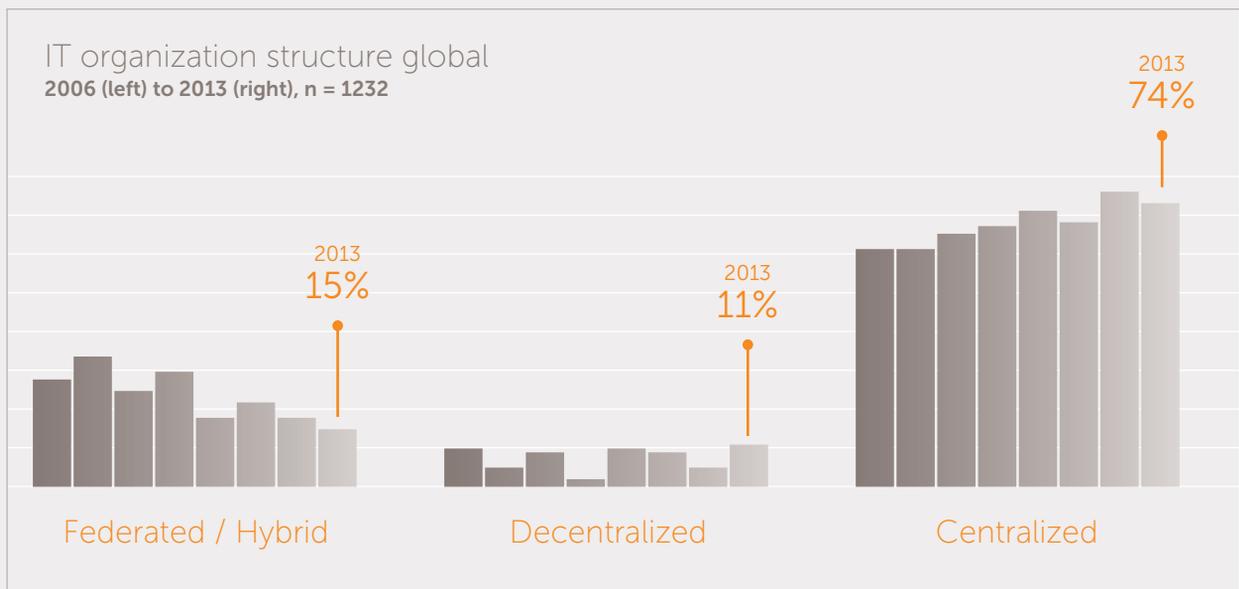
Lastly, with regards to the rate of IT staff turnover there are surprisingly good staff retention rates across the globe during the economic downturn. In Europe staff turnover in 2012 was 4.66; in 2011 it was 5.56% in comparison with 5.82% in 2010. In the U.S. staff turnover was 5.5% in both 2011 and 2010; this year's turnover rate was 5.23. This staff retention rate was likely due to the recession making it difficult for staff to find more lucrative positions elsewhere, as well as the difficulty many boomers are having in retiring. This thought is acknowledged when looking at the 2013 IT Staff Turnover Rate which is 6.63% globally. That the economic crisis seemed to be stronger within the European countries can also be seen in the further decreased IT Staff Turnover rate for 2013 which was 3.77%. For 2014 we expect a higher turnover rate.

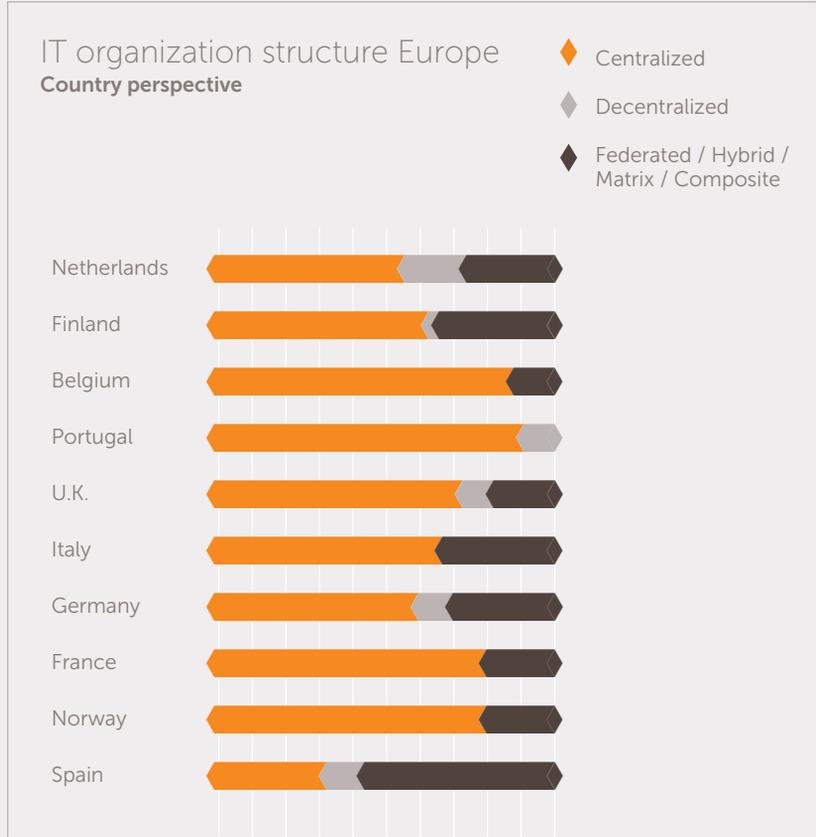
5. IT Organization Considerations

This section discusses the survey findings related to IT organizational structure and CIOs.

1. IT Organization Structure

The organization structure of IT can have a major impact on the performance of the company. IT organization structure is the degree to which it is centralized, decentralized, or federated. 65.6% (see figure below) of European and 61% of the U.S. respondents indicated centralized in 2012. In 2013 this was 63% for European companies and 65% for U.S. companies. A centralized IT organization structure is a structure, where all IT reports to a single IT executive (the CIO). Centralized IT organization structure can better attain more IT standardization across the organization; for example, a centralized email system ensures the same email features across the enterprise (same look and feel, same capabilities, centralized archive and back up policies, etc.). Often costs are a major reason to centralize IT aiming for scale of economics.





On the other end of the spectrum, there are decentralized organizational structures where each business unit has its own IT organization without much coordination or integration across business units (for example, each unit having their own email system, or their own standards for database administration). There is not much economy of scale in the decentralized structure, but each business unit has the full flexibility to focus on the unit's particular IT needs (applications and infrastructure). This can be of most value in large organizations where IT needs across some business units vary greatly. Some universities, for example, can benefit from decentralized IT structure, as each school or department might have vastly different IT requirements. 9% of the investigated European companies indicated a decentralized IT structure (same as in 2012). 8% of U.S. respondents indicated a decentralized IT structure and 10% global (Luftman and Ben-Zvi, 2010a). European companies seem

to favor centralized IT organizations in order to gain efficiency, standardization, re-use of best practices and economy of scale.

A federated (or hybrid) structure can realize the benefits of both centralized and decentralized structures. Corporate-wide standards are enforced in an effort to maximize the benefits of economies of scale, while providing flexibility to business units to maximize unique application opportunities at the business unit level. 26% (23% in 2012) of the European companies and 27% (33% in 2012) of the U.S. companies were reported as federated in 2013. Globally 28% of the organizations are using a federated organizational structure. Organizations with a federated structure tend to have a higher alignment maturity assessment than those that are centralized or decentralize (Luftman et al., 2010), (Derksen, 2013). With both the economic crisis as well as the opportunity to gain a higher level

of alignment, it should not come as a surprise to see these numbers increase over the last few years, given that alignment remains the number one thing keeping the CIO awake at night.

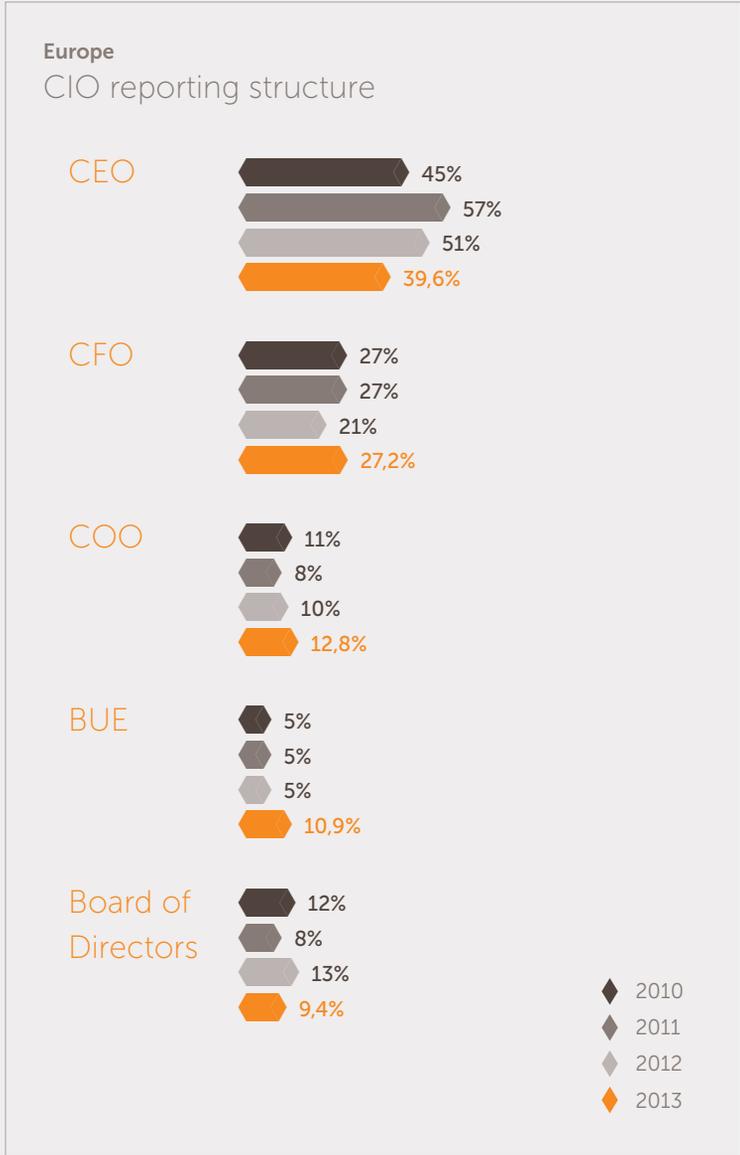
The IT organizational structures currently used per country are displayed as well. Interesting is that NL, UK, Germany, and Spain have a high level of centralization. In Norway a federated IT organization is dominant, which possibly, makes IT and business alignment a lower ranked IT management concern (ranked 5th); U.K. ranked IT and business alignment 6th. All other countries placed IT and business alignment in the top 5 management concerns. Looking at the increasing centralized and decentralized organizational structures it is to be expected that alignment will be a top 5 management concern for a number of years.

6. CIO Trends

1. CIO Reporting Structure and Role of CIO

As CIOs spend most of their time in dealing with non-technical issues, the roles of CIOs vary between the geographies surveyed.

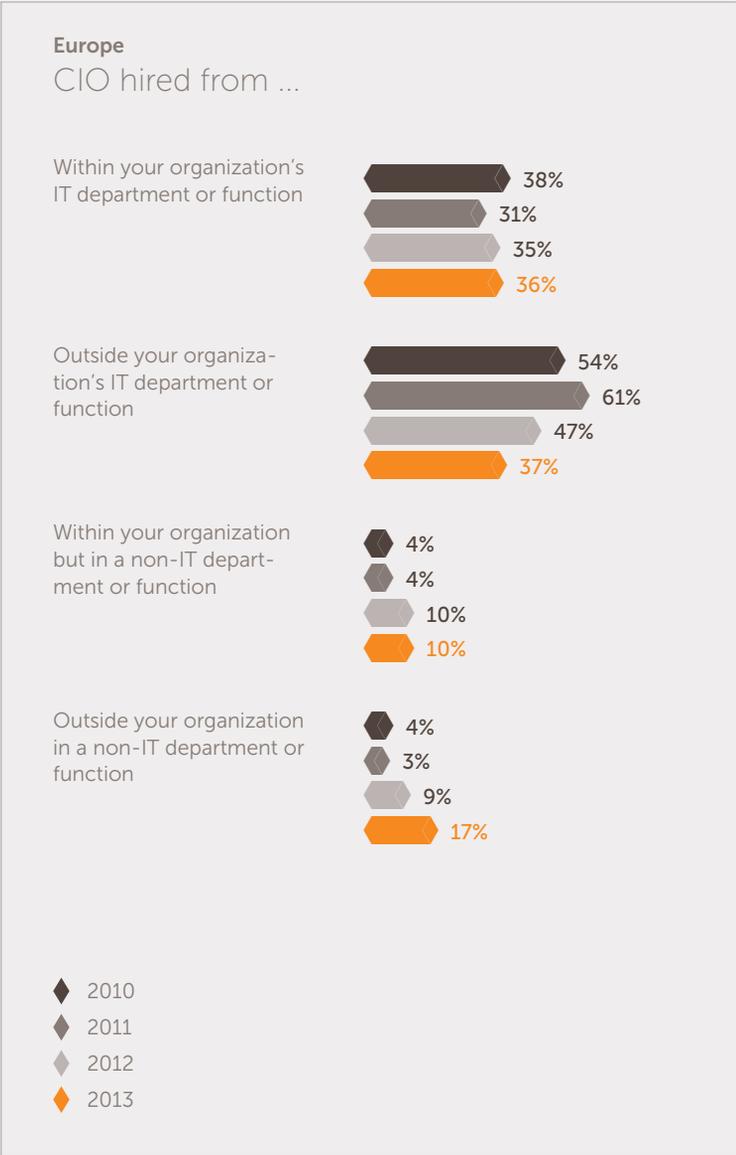
The figures on the right show to whom CIOs (or senior IT executives) report. Previous research has shown that, on average, organizations in which CIOs report to CEOs have a higher alignment maturity than those reporting to non-CEO executives (Luftman et al, 2013, Derksen and Luftman, 2013, Luftman and Ben-Zvi, 2010b, Luftman et al., 2010, Derksen, 2013). CIO reporting to the CEO is the highest in Asia/Australia (59% in 2013 but was 68%-2010). Europe is currently decreasing the direct reporting to CEOs (40% in 2013, 51% in 2012 but was 57% in 2011) which implies the CEO focuses on other priorities for the organization and trusting the COO and board of directors for the IT part. Interestingly in 2013 a new swift came. The Board of Directors became less responsible for IT but the CFO responsibility with regard to IT increased rapidly. Historically IT was seen as a cost center and more often the CIO reported to the CFO. This reporting structure increased which indicates that IT organizations are seen as a cost center in this last part of the current recession. It is expected that this will change in the next few research years.



2. CIO Tenure

The average CIO tenure is on the rise in Europe as well as abroad. This trend has been clearly illustrated in previous trends surveys with the average CIO tenure of 4.6 years in 2009, 4.3 years in 2008, 4.1 years in 2007, and 3.6 years in 2006. In 2013, the respondents reported in Europe that CIOs held their positions on average 5.28 years and 5.99 years in 2012 in comparison with 4.3 years in 2010 and 5.04 in 2011. Even though it is believed that a high CIO turnover (short tenure) makes it difficult for CIOs to address any long-term changes to the business or IT organization (Luftman and Ben-Zvi, 2010b), other research shows executive performance peaks between four and five years of tenure, after which the performance is likely to dip before another performance increase for executives with tenure of more than eight years (O'Shannassy, 2011). The same research shows the optimum executive tenure to be either between four to six years, or tenures longer than eight years (O'Shannassy, 2011). It is noted that this recent study was for CEOs and board of directors, with an average tenure of 8 years, and not specifically for CIOs. A similar study focusing on IT executives would be an interesting and welcome addition to the body of literature in this area.

The survey also asked respondents to indicate where CIOs were hired from.



The figure on the previous page shows a significant change in hiring the CIO from within the companies IT organization to hiring from an external non IT organization/function. This change might be a consequence of the economic downturn as well. For 2012 this was likely because an externally hired CIO is more willingly to implement more dramatic changes during the economic downturn. In 2013 another change can be seen using more people outside the organization from a non IT department/function. The differences per country are displayed in the following figure.



3. CIO's Time on Activities

Predictably CIOs spend most of their time dealing with non-technical issues; 77% in 2013, 78% in 2012 in comparison to 83% in 2011. Interestingly, CIO-time spent on software development issues is around 2%-9% across all geographies. Relationship management is most time consuming for the U.S. (43.7%) and European CIO's where they spend 34.7% of their time; of which 17% is with business and 10% with IT staff. However this is a drastic reduction of the CIO's time when compared to 2011 where 37% of the time was spent in relationship management. This might be a direct result of the reduced IT budgets and the well-known assignment of

doing more with less. Within Europe the time allocated for Human Resource Management & Strategy was consistent in 2012 in comparison to 2011 and 2010, but decreased to 8.8% in 2013. The global comparison is added in the figure below.

U.S. CIOs spend 23.8% of their time on operations and architecture; the European CIOs spend even less time, only 18.1% in 2013 (17% in 2012). The time spent is significantly lower in both Europe and the U.S. in comparison with other regions. The time spend on operations and architecture might be a good indicator of the maturity of this

area where it is expected that U.S. and Europe have a high level of maturity as a result of implementing ITIL / ISO 20,000.

Also interesting is the decrease of CIO time spent in both IT governance and vendor relationship management compared to last year. This might indicate that a first shift to other IT governance structures using cloud computing is performed. In the past years IT governance CIO time from 11% in 2012 to 10.2% in 2013 and Relationship management with vendors decreased to 7.8% in 2013 from 9% in 2012.



7. IT Outsourcing

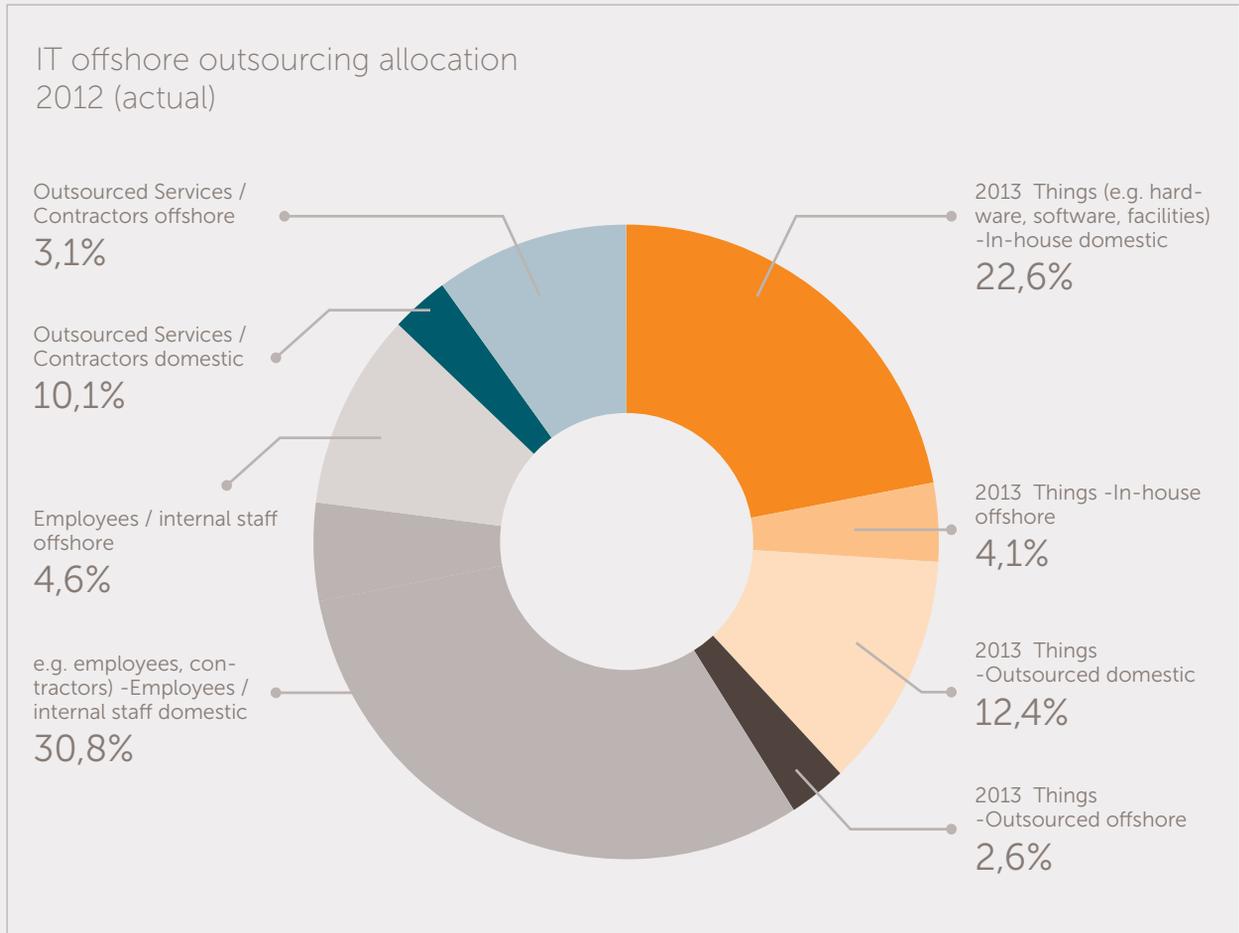
IT outsourcing has been defined as "handing over the management of some or all of an organization's IT assets, resources and related services to a third party" (Willcocks et al., 1995). Over the last two decades, IT outsourcing has not only been an attractive option for many corporations, but also subject of significant academic research.

IT leaders globally have long been looking to outsourcing as a mean to reduce costs as well as to fill skills gaps. The recent recession has fueled this even further; the overall increase in outsourcing in all of the areas is a testimony to that, when considering total outsource-

ing, which includes offshoring, nearshoring, and consulting of non-internal staff.

The offshore outsourcing in Europe is 14.4% in 2013. For all activities except helpdesk (e.g., running existing systems applications, building new systems applications and running infrastructure) the IT offshore outsourcing allocation is expected to be lower in 2014 than in 2013. This indicates that building and running systems applications as well as running infrastructure are activities that a growing number of organizations are looking to source domestically.

2013 European outsourcing is largely nearshore with 85.6% (64% in 2012) of the outsourcing budget allocated within Europe. India is the most popular offshore country receiving 27% of the European offshore outsourcing budget, which was measured in 2012. The other offshore countries are far less (China, Brazil and Mexico). From the total IT budget Europe outsourced 35.3% which is more than the other continents, Asia/Australia 33.3%, Latin America 29.9% and the U.S. 32.0%.



8. IT Metrics

The IT metrics question on this year's survey was about how IT is being measured/assessed. Respondents were invited to prioritize their current use of 14 different IT metrics and to project their IT metrics for 2014. As shown in the table below, the prioritized IT metrics are similar around the globe. The top rated IT analytic (by a significant margin) was projects delivered on time. Given that this is a traditional application project measure, this is not surprising. The next two IT metrics most frequently used is another project metrics (on budget), followed by increased customer / client satisfaction. Interestingly this is different from last year where project ROI ranked 3rd and SLA targets 4th.

Internal IT metric most used
2013 (n=1232)

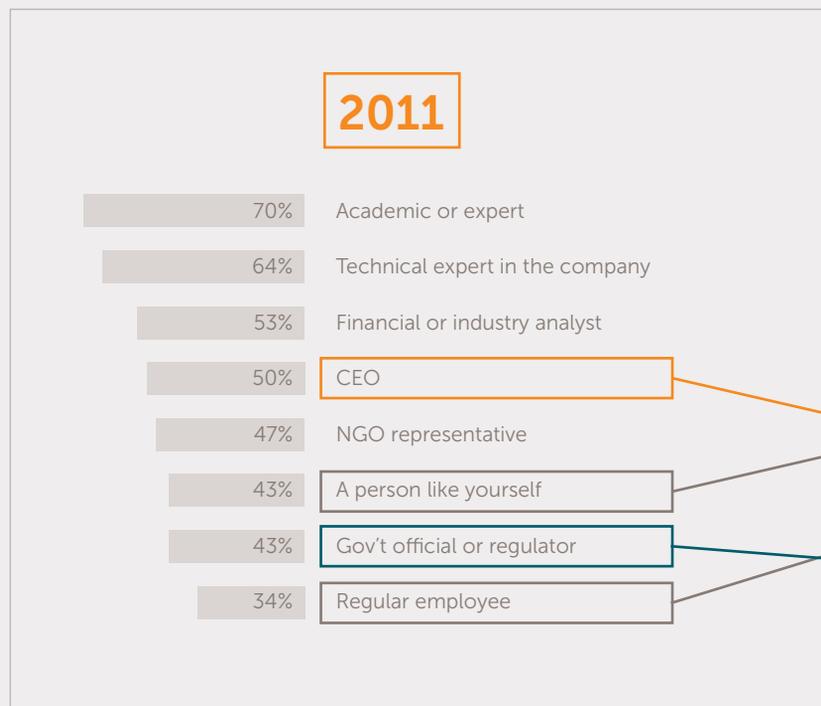
	Europe	Global	Europe	Asia/ Australia	Latin America
Projects delivered on time	1	1	1	1	1
Projects delivered on budget	2	2	2	2	3
Increased customer / client satisfaction	3	3	3	10	4
SLA targets	4	5	4	4	5
Productivity improvement	5	4	5	6	2
Project ROI	6	6	6	3	8
Increases in new products / services	7	7	7	7	7
Innovative ideas	8	8	8	8	6
Lower error rates	9	10	9	9	9
Improved decision making	10	9	10	7	10

9. Possible Megatrends

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Having management concerns and top applications and technology investments reported over multiple years makes it possible to identify larger movements. This section presents megatrends that are identified based on the research performed in the last decade.

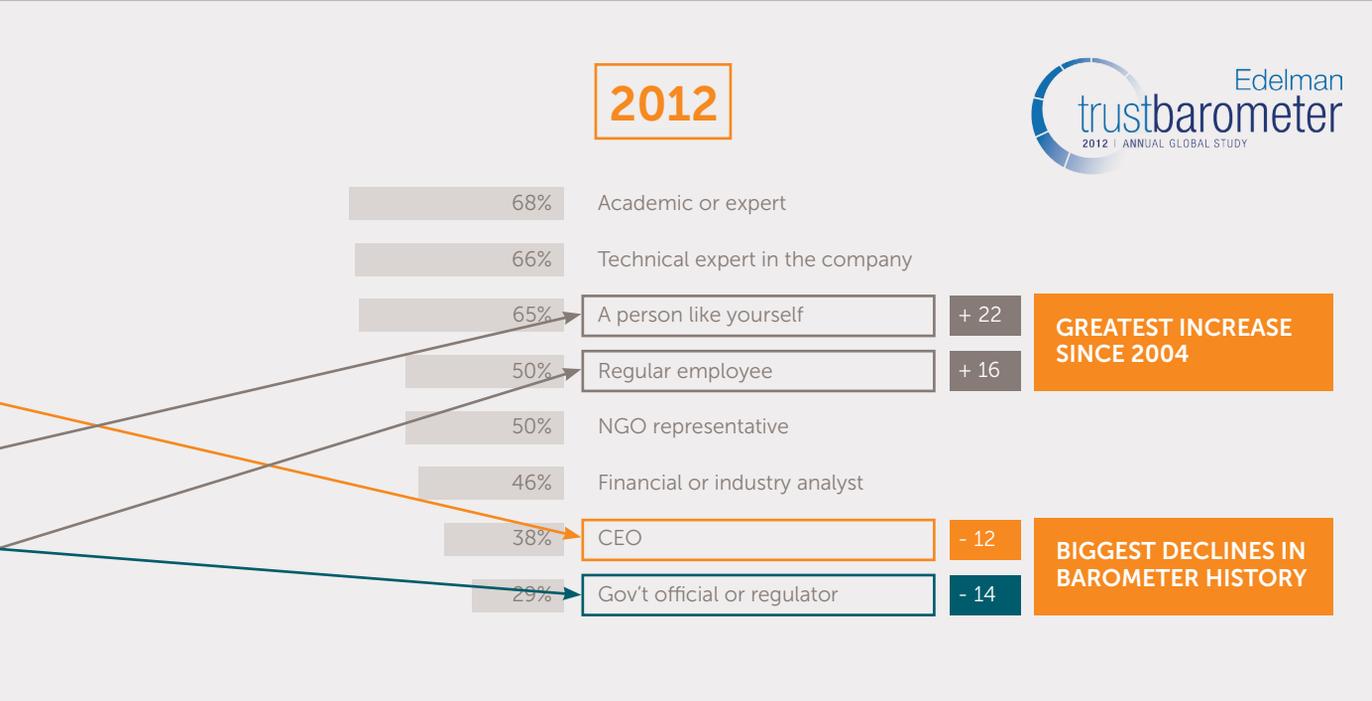
New technologies such as social media, Cloud, analytics/big data, smart devices (phone, tablet, watch, glasses), and cyber security form the foundation of the major transformation that organizations are experiencing.



Megatrend 1: Centralized control/power will disappear

Partly due to the economic crisis, but mainly due to the introduction of new technologies (especially Cloud and mobility), people are choosing to “work for themselves” and offer their services to multiple companies or start a business of their own; the “wiki style” virtual organization is on the rise. On top of that, social media is facilitating the growing disapproval of the high salaries of large-cap executives (e.g., CEO’s); do their contributions merit their income? Today many CEO’s are less trusted by people than in the past, whereas subject matter experts (SMEs; including academics) are trusted and more valued. The real power is more often found with these SMEs than with CEO’s or government officials (see Figure 13).

The worldwide insights and transparency brought by technologies such as business analytics, mobile, Cloud, and social media is very high. Knowledge and knowhow are increasingly more important (and accessible, especially via the Cloud), whereas organizational hierarchies are becoming less important. SMEs are the ones benefiting from these technology developments that form a megatrend in which centralized power (hierarchy) is declining. These changes are exemplified in the IT trends research which indicates that through growth in outsourcing, increase in time CIOs devote to partnerships with other business and service providers, and use of IT, that organizations are becoming more federated.



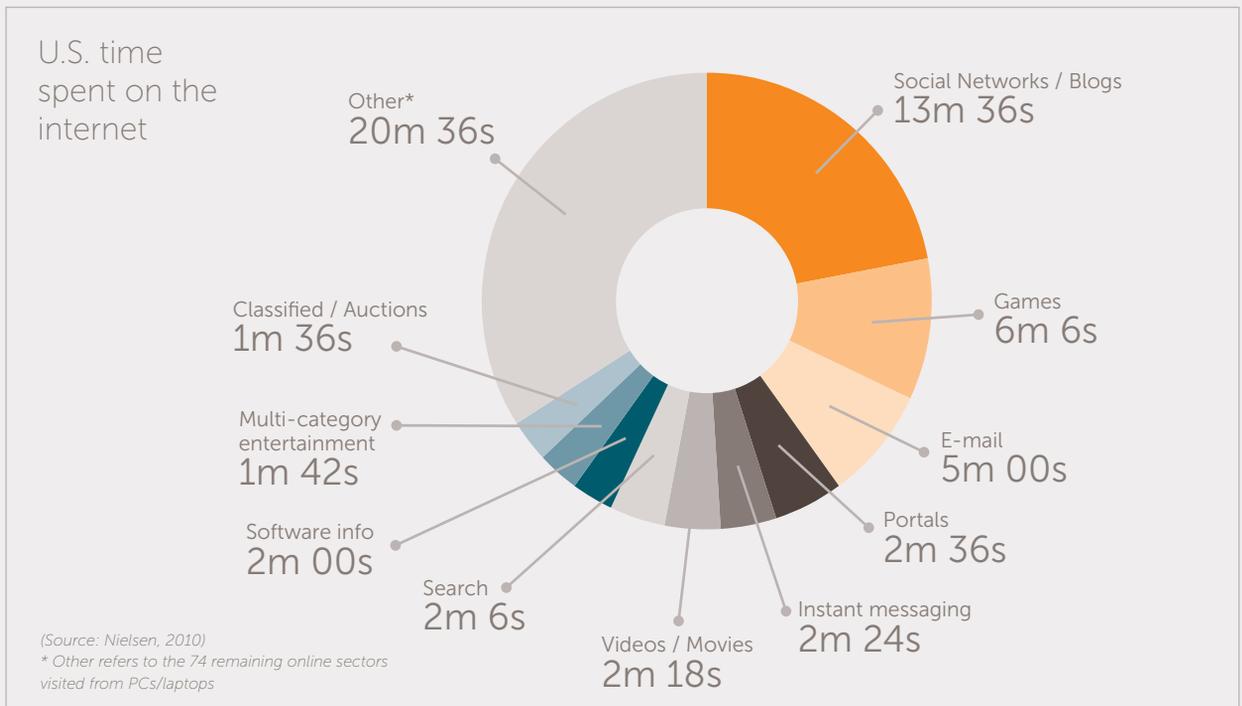
Megatrend 2: The number and quality of connections grow in importance

Metcalfe's law whereby "the value of a network is determined by the number of participants" continues to drive megatrend 1. With the transparency of Cloud and social media, and the growing accessibility of knowledge, the number and quality of individual and organizational connections will continue to gain importance. The thought that "knowledge is power" (Figure 14) is becoming less important; the number of connections multiplied by the quality of the connections is the driver of power.

In the trends research (see the top five technology IT Trends) the growth of Cloud, social media, business analytics, and "App development" supporting smart/mobile devices are indicative of this megatrend. Social media running on Clouds has become increasingly more important for managing these connections. Social media channels such as LinkedIn, Twitter, Facebook and Instagram are being used around the clock. There are currently 140 million tweets posted daily and six billion



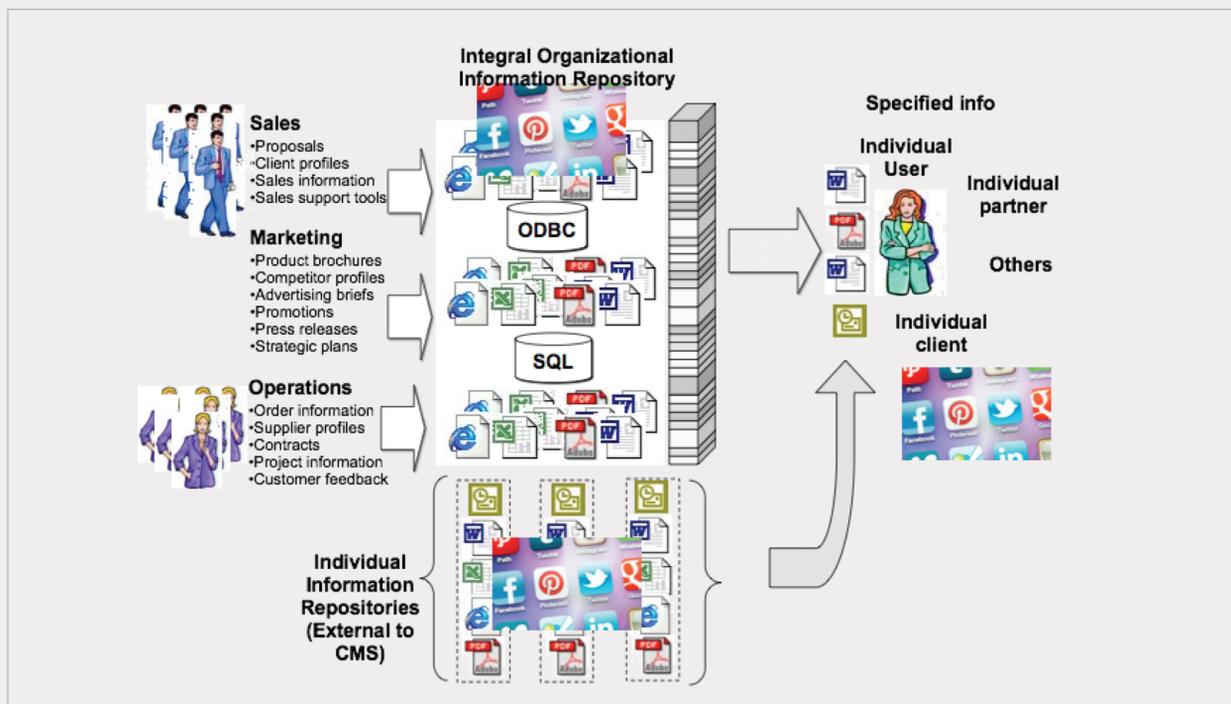
"Knowledge is power!" is outdated (source: Wilkinson, 2008)



Megatrend 3: Learn how to leverage Big Data and Business Analytics

Does big data enable/drive big decisions? The current business analytics trend is fundamental considering the enormous amounts of data gathered via existing and emerging technologies; but it is also a challenge for how to work with and leverage these large amounts of data and if having too much data inhibits organizations and people from focusing on realizing their goals. Organizations are getting lost in the enormous amount of data (that continues to grow) that continues to be available/accessible. Frequently, less is more and the need to focus is most important (either on the bigger picture or on the details). More (big) data can mean less insight. For organizations it is the question of how to work effectively with the enormous amount of data,

and the ability to leverage analytics tools has become fundamental. Getting this information (see Figure 14) is an important question for business and IT, however, how to extract the insights is the challenge and possibly one of the major alignment obstacles. IT and business must work together as they leverage these emerging analytics tools to quickly provide the important insights. Business Intelligence/Analytics has been ranked the number one technology for the last 10 years; organizations continue to struggle with how to obtain real value from this critical asset.



Megatrend 5: business predictability is decreasing while business impact is increasing

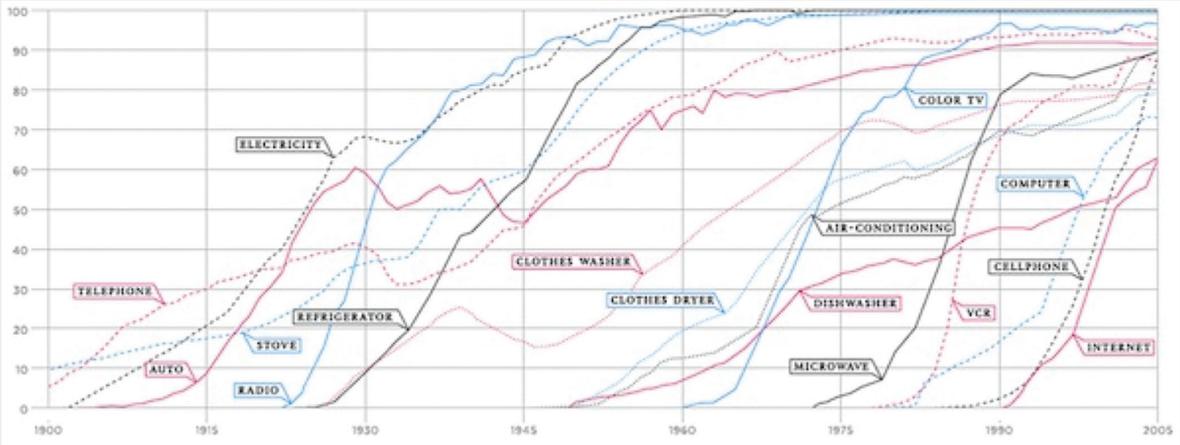
Just a few years ago Microsoft and Nokia were the most influential companies for software and mobile phones worldwide; today the big influencers are Apple, Google, Facebook and Samsung. In 2007 not many people would have predicted that Apple would grow to become the largest company (based on stock value), but it did, as a result of the iPhone and iPad. Predictability is becoming more complex, while competitors emerge from unexpected areas, especially as smaller companies leverage new technologies via the Cloud. For example, Spotify.com in just five years transformed the music industry significantly, not by owning the music but just by listening to it. Considering the speed in which new technologies are introduced and

adopted, this is but one example. The speed of introducing new technologies is increasing (Figure 18). Smartphones have only been within our grasp for scant years, and soon today's tablet will be replaced by smart watches and glasses. Organizations need to watch and integrate new technologies when considering that companies have been moving down the ranks of success or even going out of business because of their lack of responding towards new developments.

The impact of these new technologies is driving corporate and personal changes; albeit how these emerging technologies will be used and how they will evolve is often difficult to anticipate/predict. What is clear is that the

message of Carr (2003) that "IT doesn't matter" is passé; albeit how organizations deploy IT is transformational. IT does matter, and it is determining the way organizations are doing business today and in the future. There is no end in sight.

Consumption Spreads Faster Today



(New York Times, Nicholas Felton, 2005)

Concluding remarks

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The rather slow recovery from the relatively persistent recession poses new challenges to IT executives around the globe. The pervasive persistent top managerial concerns cannot simply be addressed through identical responses in different geographies; each area has its own set of characteristics, and appropriate response to management concerns. In other words, unique characteristics of the local markets and culture influence management responses to enterprises operating in a globally-linked environment. While the expected recovery from the recession presents new challenges and opportunities for IT executives in 2014 and 2015, IT executives are set to leverage both global and local IT opportunities (such as increased spending and hiring, business intelligence, virtualization, and outsourcing) to overcome not only global challenges but also local IT and business challenges.

By comparing and contrasting Europe and the other continents, this research has identified the many similarities and dissimilarities that confront managers. Clearly there are regional influences that are powerful enough to reduce the influence of global trends such as nearshore versus offshore and the investments in applications and technologies with regards to IT reliability and efficiency.

In closing, it is important to point out that IT managers are working in a highly dynamic inter-connected world, and therefore certain patterns in different geographic locations are evident. However, this research found that while there are many similarities there are also important local trends that managers must be sensitive to.

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The top five IT management concerns within Europe

- Alignment of IT and/with the Business
- Business Agility
- Business Cost Reduction/Controls
- Business Productivity
- IT Cost Reduction/Controls

The five most influential technologies for Europe

- Analytics / Business intelligence
- Cloud Computing
- Customer Relationship Management (CRM)
- Enterprise resource planning (ERP)
- (Mobile) Apps development

The significance of the impact of IT on organizations around the world, especially in light of a prolonged recovery from the global financial crisis and the introduction of significant new technologies, has amplified the need to provide a better understanding of IT managerial and technical trends. Identifying these influential factors is one thing; this paper also looks at the challenges in addressing them, taking into account both local responsiveness and global pressures. By comparing and contrasting IT trends from different continents, this paper also presents important local (European) and international considerations for both IT and non-IT executives. In addition to discussing these important managerial and technical factors, five mega-trends have been identified that will help prepare IT and non-IT leaders for the challenges that await them.

This paper is based on 35 years of surveys by the Society for Information Management (SIM) (U.S.), 19 years of IT Trends surveys by Business & IT Trends Institute (E.U.) and now 4 years of Global IT management concerns and IT trends research. The research is based on data from five geographic regions: the United States, Europe, Asia, Australia, and Latin America.

Overall, while the economic climate is improving at different rates around the globe, albeit at a slower pace than anticipated, IT's role continues to evolve as it provides organizations with a fundamental vehicle for reducing business expenses, and new opportunities for increasing revenues.



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