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Key Information Technology and Management Issues: 2011-12 Americas Study

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ABSTRACT

The importance of the impact of IT for organizations around the world, especially in light of a sluggish recovery from the global financial crisis, has amplified the need to provide a better understanding of the specific geographic similarities and differences of IT managerial and technical trends. Going beyond identifying these influential factors is also the need to understand the considerations for addressing them. This helps in recognizing the respective local characteristics, especially when operating in a globally-linked environment. By comparing and contrasting IT trends from different geographies in the Americas, this paper presents important local and international factors necessary to prepare IT leaders for the challenges that await them. It can also serve as an indicator as the respective geographies evolve from the economic conundrum.

The same questionnaire (albeit translated for the respective respondents), based on the long-running Society for Information Management (SIM) survey, was applied across the geographies and the results are analyzed and presented in this paper.

Keywords

IT Trends, Management Concerns, Top Applications and Technologies, CIO Tenure, IT Budget, IT Organization Structure, Alignment

INTRODUCTION

In the summer of 2011, a survey of Senior IT Executives from over 461 respondents located in the United States, and Latin America was conducted. The SIM survey has been conducted in the U.S. since 1980. A significant strength of this research is in its ability to identify important trends by comparing survey data from previous years. Beginning in 2008 the survey has been extended to IT executives from around the globe. Table 1 provides a breakdown of respondents from the Americas and Table 2 provides a breakdown of the respondents by industry. The 2011 survey was similar to previous ones in methodology and process. The four categories focused on in the 2011 survey were:

- A. Top IT Management Concerns

- B. Top Application and Technology Investments
- C. IT Budget Allocation
- D. IT Organizational Considerations

Participants were asked to rate the importance of 39 managerial concerns, 52 application and technology investments, budgetary considerations, staffing and remuneration matters, and 18 organizational considerations.

Geography	Total
United States	275
Latin America	186
TOTAL	461

Table 1 – Number of Respondents by Geography

Industry Classification	Percentage	
	U.S.	Latin America
Manufacturing/Process	15%	14%
Finance/Banking/Insurance	16%	13%
I.T.	14%	7%
Construction/utilities/engineering	3%	
Government	3%	14%
Consulting	9%	19%
Pharmaceutical/Healthcare	15%	
Transportation	1%	
Wholesale/Retail/Distribution	4%	7%
Publishing	1%	
Real Estate/Legal	2%	
Entertainment/Sports	1%	
Education	7%	3%
Research and Development (R&D)	3%	
External Service Provider/Data processing services	2%	
Executive Placement/search aerospace	2%	
Mining		6%
Food/Agriculture/Fishery		4%
Trade		2%
Other		4%

Table 2 - Percentage of Respondents by Industry

TOP TEN IT MANAGEMENT CONCERNS

The global top ten management concerns along with the respective ranking for each of the items are presented in Table 3.

IT Management Concern	Geography	
	U.S.	Latin America
IT and business alignment	1	2
Business agility and speed to market	2	3
Business process management and reengineering	3	1
Business productivity and cost reduction	4	4
IT strategic planning	5	6
IT reliability and efficiency	6	5
Enterprise architecture/infrastructure capability	7	11
Security and privacy	8	7
Revenue generating IT innovations	9	8
IT cost reduction	10	20

Table 3 - Top IT Management Concerns

IT and business alignment

Alignment of IT and business remains an ultimate but elusive goal, and it has increased its global ranking from the 2nd place last year (Luftman and Zadeh, 2011) to the top spot this year. In Americas, IT and business alignment ranks in the top two management concerns; ranking 1st in the U.S. and 2nd in Latin America.

IT and business leaders continue to see IT as an integral driver of efficiency/effectiveness throughout the business and therefore focus on initiatives that enhance the maturity of alignment between IT and business. For instance, since the economic transformation of the 1990s in Latin America, alignment of IT and business has become a primary focus for organizations in the region. They have introduced a number of technologies to cope with technological evolution, accelerated innovation in business services, and high levels of competition. These conditions have increased the need for adoption of methods to align IT and management needs to demonstrate the business value of IT (Leaver, 2011).

Business agility and speed to market

Business agility and speed to market is ranked 2nd in the U.S. and 3rd in Latin America. This is one position higher over last year's global ranking. Over the past years, this concern has moved up from the mid-teens to within the top five management concerns. Between 2010 and 2011 it has moved to the top three management concerns in the Americas. Agility and speed are essential for business growth in a competitive and post-recession economy.

Latin American organizations are increasingly participating in global markets. A 2011 ranking elaborated by America Economia business magazine shows important Chilean, Mexican and Brazilian companies which are successfully expanding their operations internationally (America Economia, 2012). Global markets are unpredictable and durability of operational best practices tends to be shorter, driving more-frequent adjustments to operational processes and business transactions.

Agility contributes to better respond to the dynamics of the changing market and customer requirements; this can explain business agility being ranked as one of the top three concerns in Latin America (Dixon and Jones, 2011).

Business process management and reengineering

Business process management (BPM) and business process reengineering (BPR) are ranked in the list of top ten concerns in the Americas (ranked 3rd in the U.S. and 1st in Latin America). The ranking of BPM/BPR has improved in since last year, when it ranked 5th in the U.S. and 4th in Latin America.

Since the 90s large European and American corporations leveraged BPR tools that analyze, design, and automate workflows and processes within an organization. As a result, BPM and BPR have appeared every year in the list of top twenty concerns. Latin American companies are catching up and hence BPM and BPR ranking higher in that geography.

The results in Latin America may be associated in part with the creation of more developed and efficient organizations across the regions, which have substantially decreased their vulnerabilities to the impact of the global financial crisis through structural changes, production specialization and improved resource efficiency (Dutta and Mia, 2011).

As the economic recovery gets underway in a very uncertain and volatile regional and global economy, and as corporations' large and small need to compete in a globally-linked market place, it was predicted and it is still expected that BPM and BPR remain a top management concern globally. The very high ranking of ERP as an important application and technology in Americas provides further support for this important consideration.

Business productivity and cost reduction

Business productivity and cost reduction was universally ranked as the top management concern in 2010, and in 2011 it comes in at the 4th spot in the Americas.

There is a general consensus on the importance of business productivity and cost reduction using IT, but IT itself is still somehow perceived to be an expense within many companies. This is demonstrated by the continued appearance of IT cost reduction as one of the top ten management concerns and the total cost of ownership and IT budgets as percentage of revenues and/or turnover (discussed below). However, this economic downturn has had successful organizations considering the opportunity to leverage IT to reduce business expense rather than merely considering IT costs as an expense. It seems business productivity and cost reduction has remained a major management concern as economies are slowly moving into a post-recession phase. As in 2010, it is noted that this trend is not limited to the Americas, as reported for example, by Luftman and Zadeh (2011).

IT strategic planning

IT strategic planning was the top ranking concern in the U.S. in 1980, and has remained in the top ten ever since, improving its ranking to 5th place in the U.S. in 2011, and 6th in Latin America (Luftman and Zadeh, 2011). IT strategic planning is an important consideration in the medium to long term, especially as America is turning its attention to post-recession activities.

An upcoming trend is not to have a separate IT strategy plan but incorporate it as an essential part of the enterprise business strategic plan (Hinssen, 2008).

Important investments in technologies such as cloud computing, 'big data', infrastructure and smart phones (AETecno, 2012), demand alignment of IT with enterprise strategic plan. These investments as percentage of revenue could be higher in Latin America than in the U.S. due to relatively less mature infrastructure.

IT reliability and efficiency

The growing complexities of IT systems along with the ever-increasing reliance of business operations on IT have amplified the importance of IT reliability and efficiency, which is ranked 6th in the U.S. and Latin America.

This management concern has risen in the U.S. since 2008, but this year IT strategic planning has pushed it just outside of the top five management concerns in the U.S.

Due to a number of high profile cases, including the migration of WikiLeaks website as well as cyber-attacks against E-commerce sites such as PayPal and Mastercard, and the resulting effect on the reliability of the said eCommerce sites, it was predicted to have an improved ranking for IT reliability and efficiency (Luftman and Zadeh, 2011); the prediction has come to fruition in Latin America.

In Latin America, reliability is no longer an option, it is an essential component of business operations infrastructure (CIOtoCIO Perspectives, 2011). E-commerce in Peru, for example, is expecting to grow by as much as 30% in the next three years and businesses need to show their clients they can rely on their transaction platforms (Trujillo, 2010).

Enterprise architecture/infrastructure capability

Enterprise architecture (EA)/infrastructure capability is ranked 7th in the U.S. and 11th in Latin America. The fact that EA is just outside of the top ten management concerns in Latin America could mean IT leaders in the region have not yet come to appreciate the importance of developing business architectures to integrate and standardize the functions and processes of their organizations and to increase innovation culture. Developing new methods to build an “architectural vision” can contribute to better understanding of EA within Latin American organizations. Therefore we predict EA move up its ranking as a management concern in a near future in this region.

Security and privacy

Security and privacy is ranked 8th in the U.S. and 7th in Latin America. The increasing importance of security was expected due to a number of highly publicized incidents during 2010, as described above.

Investing in security, privacy and trust is not easy in Latin America, and it is even more difficult to demonstrate the return on investment. Still, security and privacy are possible and necessary (Franz, 2009). Organizations need to realize the importance of implementing more preventive processes and stronger access controls to applications and data (Aveksa, 2011).

It will be interesting to track this concern in the next 12 months, particularly in reference to APEC (region which includes Canada, the U.S., Chile, Mexico, and Peru), where it will certainly increase in importance. One of the priorities of the 19th APEC Economic Leaders Honolulu Forum in November 2011 was the ‘implementation of APEC Cross Border Privacy Rules System’ as one of 8 key steps to strengthen regional integration and expand trade (APEC, 2011).

Revenue generating IT innovations

Revenue generating IT innovations come in at 9th in the U.S and 8th in Latin America. In the U.S., revenue-generating IT innovations have reversed its upward trends in recent years.

Innovation is important in Latin America as it allows organizations to compete, increase production, and respond to requirements of the global market. For example, initiatives in Peru demonstrate that IT investments in organizations have increased by 11.9% in 2011 compared to 2010 (Gestion, 2011). These IT initiatives have contributed to make the Peruvian economy more dynamic, generating incomes that represent about 1.2% of Peruvian GDP in 2011.

IT cost reduction

IT cost reduction remains a concern for all IT managers, albeit with a direct correlation to the local economic outlook. The importance of IT cost reduction is more or less similar in developed economies (including the U.S., at 10th), but it falls outside of the top twenty management concerns in Latin America. With the Americas looking ahead at the post-recession era, budget restrictions might be easing, and infrastructure improvements and utilization of technologies such as cloud computing (discussed in Top Technologies section) are being used by IT leaders to increase productivity and to curb spending.

Our prognosis is that in Americas where the local currency remains at or near record lows, there is little pressure on IT managers to cut IT costs to retain their global competitiveness. However, in the event of unexpected appreciation of USD against other major currencies, IT cost cutting can become a major issue for Americas IT managers.

TOP FIVE APPLICATIONS AND TECHNOLOGY INVESTMENTS

Survey respondents were asked to rank the importance of applications and technology developments by selecting their top five from a list of 52. Table 4 lists the top five application and technology rankings for 2011 in Americas.

Top Applications and Technologies	Geography	
	U.S.	Latin America
Business intelligence	1	2
Cloud computing	2	5
Enterprise resource planning (ERP) systems	3	1
Mobile and wireless applications	4	8
Customer relationship management (CRM)	5	10

Table 4 - Top Applications and Technologies

Business intelligence

Business Intelligence (BI) remains one of the top technology investments in 2011. It has been ranked the highest in the U.S. every year since 2009, and this year comes in at the 2nd spot in Latin America.

Since BI leverages data mining to identify valuable insight, this high ranking across geographies suggests that IT leaders continue to believe their organizations are data rich and insight poor (Luftman and Ben-Zvi, 2011).

Latin American organizations are reacting to the effect of accelerated information growth (almost 50% every year), opening a new US\$370 million market of 'big data' management according to the study "IDC Latin America Predictions 2012" (AETecno, 2012). This is in line with Gartner's analysts that the increasing volume of unstructured information currently available to organizations (e.g., images, videos, and social media files) will make it even harder to ensure the consistency and effectiveness of data, the type of information that is currently difficult to understand and analyze. As businesses seek to obtain value from this data it is expected to see more business intelligence tools, in order to more closely integrate this data with analytics technologies (Eschen, 2011).

Cloud computing

Cloud computing ranked in the 2nd place in the U.S. (improved from the previous year) and 5th in Latin America (declined from the previous year). The implications of cloud computing are yet to be fully understood, and economic volatility forces IT managers to look in their immediate organizational vicinity for certainty, where applications and technologies such as business intelligence, ERP, CRM, business process management and collaborative and workflow tools rank high.

Lack of easy access to inexpensive and clean electricity continues to be another driving factor behind adopting cloud computing in the U.S. But availability and reliability of power in Latin America has impacted the move to cloud computing.

Enterprise resource planning (ERP) systems

As expected the high ranking of BPM/BPR as a management concern drives the associated applications and technologies such as ERP and CRM. ERP ranked 3rd in the U.S. and 1st in Latin America, and CRM ranked 5th in the U.S. and 10th in Latin America. See CRM discussion below.

In Latin America, due to the presence and marketing campaign of a large Brazilian ERP provider (Totvs), many organizations keep revisiting and reevaluating their ERP solutions to identify possible areas of improvement. This exercise has obviously impacted the market, earning ERP the top spot in the applications and technologies ranking in 2011.

Mobile and wireless applications

Mobile and wireless applications cover a whole computing *platform-as-a-service* across computer networks. They go hand in hand with cloud computing and can greatly benefit from each other as shown, for example, by services such as DropBox and Apple's iCloud. Mobile and wireless applications are most useable in geographies with high penetration of smart mobile devices, hence higher ranking in the U.S. than in Latin America.

With all indicators pointing to a growing proportion of smartphones in all geographies, and with some predicting over 50% smartphone penetration in many countries (Be, 2011), and considering the profound effect this might have on accessibility and security of enterprise services, we envisage mobile and wireless applications will be one of the issues keeping many IT managers awake at night over the next couple of years.

Customer relationship management (CRM)

Customer relationship management (CRM) tools were not ranked in the top 10 applications and technologies in 2010, but this year it is ranked in the 5th place in the U.S. and 10th in Latin America. The relatively lower ranking of CRM in Latin America could be attributed to CRM being a relatively new-comer in that region, where lack of well-established data warehouses have traditionally limited mass adoption of tools, such as CRM, which require detailed historical data on individual customers.

IT BUDGET ALLOCATION

1. Overall budget allocation considerations

It seems that the different geographies are rebounding from the recession at different rates as explained by corresponding increases in IT budgets. CIOs reported increased IT budgets in 2011 compared to 2010 in 64% of companies in Latin America. IT leaders anticipate this trend to continue in 2012 with 56% of the U.S. and 67% of Latin American respondents indicating that their IT budgets would increase in 2012.

2011 infrastructure expenditures, which in the U.S. had been steadily decreasing during the recession, have increased to 44% from 37% in 2010. Latin American IT leaders spent a whopping 59.3% of their budget on infrastructure in 2011, which is slightly lower than the 59.8% spent in 2010.

It seems that Latin American companies have been (and still are) investing in their own infrastructure, perhaps to catch up, while the U.S. companies are spending a lot more on their internal domestic staff than their Latin Americans counterparts.

2. IT budget as a percent of revenues

The often-benchmarked average IT budget as a percentage of revenue for the U.S. had been relatively stable for a few years (around the 3.8% mark), but this year it is reduced slightly to around 3.5%. This can be attributed to the increase in revenues, with some cautious budgeting due to the persistent uncertain economic conditions in the U.S. A reverse pattern is evident in Latin America where IT expenditure has increased from 5.8% of enterprise revenues in 2010 to over 10.85% in 2011.

3. IT staffing and compensation matters

Staffing (internal and external) remains the largest single component of IT budgets (56% in the U.S. and 41.9% in Latin America). It is noted that staffing as a component of IT budget has shrunk in 2011 in Americas. This seems to be a direct result of increased infrastructure spending and consolidation in the face of global economic uncertainties.

The domestic sourcing budgets for internal staff are 38% in the U.S. and 23% in Latin America. Conversely, many enterprises in Latin America prefer to take their internal staff through offshoring, accounting for 7.3% of their total IT budget (compared to around only 2% for the U.S.).

When it comes to IT staff salaries, 64% of Latin American IT workers had a pay increase in 2011, and even a slightly higher percentage (67%) expects pay increases in 2012. In another sign of recovery from the recession, the U.S. market has seen a very healthy 66% increase in IT salary expenditure in 2011.

Respondents were also asked to indicate the anticipated percentage of their IT budgets allocated to education and training. This allocation is on the increase across the Americas after a slight dip in the U.S. in 2010, which can be an indication that organizations are willing to spend more money to prepare and retain their talent.

Training budget projections for 2011 was just over 3.5% in the U.S. and a staggering 12.1% in Latin America. Apparently Latin American IT leaders have decided that to utilize the latest technologies and innovations and to drive business growth, they need better infrastructure and more skillful IT workers, especially in expanding their business and interpersonal skills. In contrast, in the U.S., a much bigger proportion of IT budgets are allocated to staff salaries, which leaves less money for infrastructure expenditure and staff training.

Last, with regards to the rate of IT staff turnover there is surprisingly good staff retention rates in Americas. Staff turnover was 4.9% in Latin America, and 5.51% in the U.S. Staff turnover is a very good barometer of economic outlook, as employees are far less likely to leave during economic downturn than they are during times of high-growth.

IT ORGANIZATION CONSIDERATIONS

IT organization structure

The IT organization can have a major impact on the performance of the company. IT organization structure is the degree to which it is centralized, decentralized, or federalized. The percentage of organizations with either extreme (fully centralized or fully decentralized) has been steadily declining in all geographies. The percentage of enterprises with a centralized IT structure has gone down from 68% in 2010 to 61% in 2011 in the U.S., and also reduced very slightly, from 69% to 68%, in Latin America.

As noted above, the two extreme organizational structures (i.e. centralized and decentralized) are becoming less prevalent in enterprises in all geographies. A federated (or hybrid) structure can realize the benefits from both centralized and decentralized structures, 31% of Latin American companies are reported to have federated IT organizational structure in 2011 compared to a mere 14% in 2010. Bucking this trend was the U.S., where the percentage of enterprises with federated IT structure was slightly reduced from 28% in 2010 to 26% in 2011. Although the long term trend is on par with the general trend described above, refer Figure 1 (Luftman and Ben-Zvi 2011).

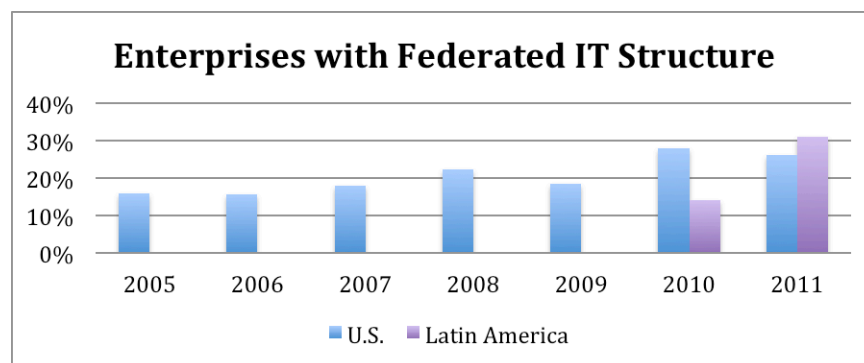


Figure 1 - Federated IT structure is on the rise.

CIO TRENDS

1. CIO Reporting Structure and Role of CIO

As the majority of CIOs time is spent in dealing with non-technical issues, the roles of CIOs vary between the geographies surveyed. Previous research has shown that, on average, organizations in which CIOs report to CEOs have higher alignment maturity than those reporting to non-CEO executives (Luftman and Ben-Zvi, 2010b, Luftman et al., 2010). CIO reporting to the CEO in Latin America shows a high increase, from 13% in 2010 to 49% in 2011 (44% to 49% in the U.S.).

2. CIO Tenure

The average CIO tenure, on the rise in the U.S. since 2006, decreased from 5.1 in 2010 to 4.45 years in 2011. In 2011, Latin America shows a reverse trend, where 60.43% of CIOs are reported to have tenure of more than three years (compared to 48% in 2010).

The survey also asked respondents to indicate where CIOs were hired from. 65% of the U.S. and 44% of Latin American respondents said their CIO was hired from outside the company.

In other words, only 35% of the U.S. (down from 42% in 2010) and 56% of Latin American CIOs (down from 64%) were hired from within the company. Hiring CIOs from within the company is down due to the perception that a new-to-organization CIO is more likely to implement major change, something that might be seen as favorable in times of economic volatility.

When asked what background CIOs had before taking up their current position, the respondent indicated that in the U.S., 97% of CIOs were recruited from IT organizations (either internal or external). In Latin America this was 96%. In other words, you will not likely become the CIO in your company, especially without an IT background.

3. CIO Time on Activities

Not only have CIOs been spending most of their time dealing with non-technical issues, but this is taking an increasing proportion of CIO times: 77% in the U.S. in 2011 compared to 75% in 2010; 63% in Latin America compared to 57% in 2010. Interestingly, CIO-time spent on software development issues remains around 4%-6% in the U.S, while in Latin America it has slightly declined from the high of 14% in 2010 to around 11% in 2011.

Because of the relatively less mature infrastructure in Latin America, it is expected that IT leaders spend more time on technical issues than their counterparts in the U.S, and it is also expected this gap to decrease. However, it now appears that the gap is in fact widening: while U.S. CIOs spent 18% of their time on operations and architecture in 2011 and 19% in 2010. The same activities took around 23% of IT leaders time in Latin America in 2010, and it was over 26% in 2011. We expect these numbers to move closer to that of the U.S. as the infrastructure in Latin America matures.

IT OUTSOURCING

IT leaders globally have long been looking to outsourcing as a vehicle to reduce costs as well as to fill skills gaps. The recession accelerated this even further; the overall increase in outsourcing in all geographies is indicative of that. Budget allocations on outsourcing are 19% in Latin America and 18% in the U.S.

In the U.S., outsourced offshore staff increased from 5% of IT budget in 2010 to 8% in 2011, but is set to decrease to 6% in 2012. The same pattern is seen Latin America (1% in 2010, 7.3% in 2011, and 7.2% in 2012). Outsourcing of offshore staff in Asia remains relatively lower than the other geographies due to the number of high profile offshoring failures in the early 2000s (for example see (Gray, 2003)).

Outsourced domestic staff also mostly follows the same pattern (increasing) as the offshore staff.

Consulting service providers seem to be in for a tough year in the U.S. They peaked in 2010 at 10% (Luftman and Zadeh, 2011) before shrinking to 8% in 2011 and is set to decrease to 6% in 2012. But in Latin America, consulting services increased from a 4% in 2010 to 11.6% in 2011, but is set to decrease slightly to 10.7% in 2012.

CONCLUSION

In another indication that firms are moving towards post-recession mode, for the first time since the start of the recession, IT cost reduction has been pushed towards the back of the top ten global management concerns. Furthermore, 'business productivity and cost reduction' remains an important focus in Americas, signifying that organizations are more interested in utilizing IT to increase productivity and reduce the cost of doing business as oppose to focusing on the reduction of IT costs.

Each targeted geography has its own set of characteristics, and therefore has varying management concerns and responses. Unique characteristics of the local markets influence management responses of enterprises operating in a globally-linked environment. By comparing and contrasting different geographies, 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. Although, in Americas, local considerations are highly influenced by what is happening up North, and therefore local considerations, even though important, not very often do they take precedent over global influences and interconnectedness.

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

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