

Win in the flat world

Enterprise Architecture Expands its Role in Strategic Business Transformation

Infosys Enterprise Architecture Survey 2008/2009

Survey



1. Introduction	4
1.1 Enterprise Architecture expands its role in strategic transformation	4
1.2 Enterprise Architecture in a challenging economic environment	4
1.3 An outlook for Enterprise Architecture	5
1.4 Summary of findings	5
2. Enterprise Architecture aims for Business-IT Alignment, Process Improvement and Flexibility	7
3. Architecture becomes an important tool for driving organizational change	8
3.1 Organizations start using architectural approaches beyond IT	8
3.2 Enterprise Architects are accepted advisors - even outside IT	9
3.3 The influence of EA in strategic business planning continues to expand	9
3.4 This role change starts reflecting in reporting lines	10
3.5 A separate budget gives independence	10
4. EA focusses on business and information, and is a key contributor to IT Strategy	11
4.1 Significant resources are allocated to Business, Information and Integration Architecture	11
4.2 IT Strategy becomes the most important deliverable of Enterprise Architecture	12
4.3 EA focusses on Integration, SOA, Security and Information	13
4.4 Infrastructure decisions are taken at enterprise level - beyond that, decision levels are varying	13
5. Enterprise Architects do not need to do everything themselves	14
5.1 Most organizations by far have a full time architecture function	15
5.2 Enterprise Architecture teams are 2 - 4% of IT staff	15
5.3 The roles of Chief Architect and EA Programme Manager are often segregated	16
5.4 EA Teams spend significant resources on project support and administration	17
5.5 There is some interest in sourcing elements of EA externally	17
6. Frameworks and Tools are helping to professionalize the EA function	19
6.1 TOGAF is the EA Framework with the widest adoption	19
6.2 Most organizations customize frameworks to adopt them to their needs	20
6.3 EA Tools have increased adoption, but there is no product which has managed to dominate the market	21
6.4 Only a minority ensures up-to-date data by processes or technology	23
7. Justifying and enforcing EA continues to be a challenge	24
7.1 Only 61% of all EA teams can justify EA investment	24
7.2 Justifying EA requires collecting appropriate metrics	26
7.3 Implementation suffers if there is neither carrot nor stick	27
8. Recommendations for Architecture Teams	29
9. Survey Methodology	30
9.1 Approach	30
9.2 Timing of Survey	30
9.3 Survey Participant Profiles	30
9.4 Company Size	30
9.5 Geographical Distribution	31
9.6 Industries	31

Table of Figures

Figure 1	Alignment, Standardization and Agility are the top priorities for Enterprise Architecture	7
Figure 2	EA has a growing role in organizational transformation	8
Figure 3	Enterprise Architects are in demand as advisors - both within and outside IT	9
Figure 4	Enterprise Architects are at the table for strategic planning	10
Figure 5	Enterprise Architecture starts moving away from the IT organization	10
Figure 6	Most EA Teams have an independent budget	11
Figure 7	Business and Information Architecture are important activities of EA teams	12
Figure 8	EA yields a major contribution to EA strategy	12
Figure 9	Integration and SOA are key focus areas for EA	13
Figure 10	Infrastructure decisions are centralized	14
Figure 11	Most organizations have full-time architecture teams	15
Figure 12	The number of Enterprise Architects depends on total IT staff	16
Figure 13	Large organizations most commonly have 10-50 employees in Enterprise Architecture	16
Figure 14	Not all Chief Architects are also running the EA programme	17
Figure 15	Only a fraction of the time of EA teams is spent on EA specific activities	17
Figure 16	There are elements of EA where outsourcing is an option	18
Figure 17	TOGAF has become the most popular EA framework	20
Figure 18	Most organizations customize their EA framework	20
Figure 19	Frameworks need to be adjusted to the organization and to the scope of EA within	21
Figure 20	60% of Architecture Teams rely on specialized tools	21
Figure 21	Licensing cost is still an adoption hurdle - but it is less quoted	22
Figure 22	The EA Tools Market is fragmented	23
Figure 23	Only 21% of organizations manage their architecture data effectively	24
Figure 24	The ability to justify EA is declining	25
Figure 25	Building the case for Enterprise Architecture requires looking outside IT	25
Figure 26	Metrics collection has increased significantly	26
Figure 27	Collecting metrics helps justifying architecture	27
Figure 28	Only 45% collect metrics on a regular basis	27
Figure 29	57% link personal incentives to architecture compliance	28
Figure 30	EA compliance is tracked in various ways	28
Figure 31	Distribution of company size	30
Figure 32	Distribution of participants by geography	31
Figure 33	Distribution of participants by industry	31

1. Introduction

For the past three years, Infosys has conducted an annual survey of EA among CIOs, Chief Architects, and Business and IT Managers. This survey aims at understanding why and how Enterprise Architecture is done in organizations, what benefit it yields, and how it integrates with other organizational activities like strategic business planning, enterprise and IT governance. It reviews various trends in the field and yields insights into the future course of EA.

In 2008, Infosys again invited IT leaders both from its client base and the global IT community to participate. 173 completed a detailed web questionnaire on 24 topics. The responses draw a picture of Enterprise Architecture for a cross-section of industry verticals, geographies and organizational sizes.

1.1 Enterprise Architecture expands its role in strategic transformation

The role of Enterprise Architecture (EA) continues to evolve. When it started off in the 1980s (marked by John Zachman's path-breaking work), EA was an IT-centric function. Today, most companies use it to align IT with business.

In our 2007 survey, Infosys found indications that EA was moving into its next stage of evolution - a tool to implement business strategy¹. The 2008 survey indicates that Enterprise Architecture will be redefined to break out of its IT-centric role to govern the interaction of all units and assets in an organization. It aims at creating value through effective collaboration and co-creation with business partners and customers.

This year, we obtained further data supporting this trend. 22% of all survey respondents state that their organizations are starting to use architectural approaches to implement its strategy (Figure 2).

1.2 Enterprise Architecture in a challenging economic environment

Starting with the collapse of the US real estate and mortgage market and - linked to that - major losses in credit derivatives, 2007 and 2008 saw a major financial crisis unfold. Most major Western economies are in or on the verge of a recession.

Our data indicates that despite this challenging environment, Enterprise Architecture will continue expanding its role, rather than being pushed aside by short-term needs and cost cutting efforts.

Reasons include

- Insight into the critical role of architecture in sustainable cost reduction both within and outside IT²
- Past experience on the contribution of EA towards IT cost reduction³
- Increasing pressure on organizations to transform at an accelerating pace

The last topic - enterprise transformation - has been boosted by the global financial crisis. This is exemplified by indicators such as the volume of M&A activity in the Financial Services industry, which increased by 90% in the third quarter of 2008 compared to the quarter before⁴ - despite a dramatic drop in valuation of firms.

¹ Infosys Enterprise Architecture Survey 2007, <http://www.infosys.com/ea>

² Ross, Weill and Robertson claim that increasing architectural maturity from decision making in business silos to a modular business model can reduce the overall IT spend by 25% at average (Ross/Weill/Robertson, Enterprise Architecture as Strategy, 2006)

³ Our 2007 survey showed that at that time, IT cost reduction was the #1 benefit perceived from Enterprise Architecture. Infosys Enterprise Architecture

1.3 An outlook for Enterprise Architecture

As indicated by its role in strategic business planning⁵ and in change initiatives⁶, Enterprise Architecture will continue to morph into a tool for strategic business transformation. It will become a discipline distinct from Enterprise IT architecture, which continues to exist.

Transformation is implemented in multiple streams within multiple units and functions of the firm. Today's approach of architecture - looking at everything outside IT as the "business", and trying to access it through fairly generic, coarse-grained models - is bound to fail. A future enterprise architecture will be the "architecture of the enterprise". It will need to address the whole organization and each of its functions through appropriate models which are meaningful to the specialists of each area, and help them drive transformation. That means that it will have to provide structured models to represent architectures for production, research, finance and HR - as much as it has for IT.

There also needs to be a paradigm shift in the practice of architecture. Instead of designing a target state with unclear and limited traceability to the as-is situation, it needs to evolve into the issue driven approach of management consulting. This ensures that on the one hand, efforts are well defined and time boxed in scope, and on the other hand, that they are part of a broader integrated, holistic solution.

All these shifts mean that architecture teams need to introduce a step change in their functional and management skills. As of today, most Enterprise Architects are from the IT function, and therefore they either have to acquire these crucial capabilities or the architecture teams as a whole need to integrate these skill sets through adding resources with a different background - primarily from business operations.

1.4 Summary of findings

The results of the 2008 EA survey indicate that Enterprise Architecture has progressed on its way to becoming a tool for business transformation. In addition, they show that

- The key objectives of Enterprise Architecture are Business-IT Alignment, Process Improvement and Flexibility
- Architecture becomes an important tool for driving organizational change
- EA is a key contributor to IT Strategy
- Architects spending two thirds of their time on activities which are not core EA
- TOGAF, ITIL and COBIT are the core frameworks the IT function revolves around
- Justifying and enforcing EA continues to be a challenge - in particular in organizations not collecting sufficient metrics around EA

Yes, business-IT alignment is the most quoted objective for doing EA - however, it is hardly a value lever in itself. Process standardization and improvement and the flexibility of the business are next in rank, and this is where we see the major opportunity for EA: enabling the organization to be more adaptive, while still working effectively.

Survey 2007, <http://www.infosys.com/ea>.

⁴ Thomson Reuters Global M&A Financial Advisory 3Q08, http://www.thomsonreuters.com/content/PDF/financial/league_tables/ma/2008/3Q08_ma_finl_adv.pdf

⁵ Chapter 3.1

⁶ Chapter 3.2

Architecture steps out of the scope of IT and becomes part of planning and implementing strategy. In 22% of responding organizations, architectural approaches are already being used for general business transformation. In 18%, enterprise architects are advisors both on business and IT change. They are involved in the strategic planning process in almost 60% of the organizations we surveyed, and finally 16% of these EA teams are not reporting into the IT function.

The deliverables of enterprise architecture move away from technology. IT strategy is now the most common deliverable of EA, and Information and Business Architecture together account for 42% of the effort spent by EA teams.

EA has become mainstream. 77% of the participants have full-time architecture teams. They tend to be 2 - 4% of IT staff, up to a maximum of about 50 people in large companies (>1000 employees in IT). They spend two thirds of their time on project support and administration, and some are interested in handing over specific activities to vendor partners.

The architecture function continues to become more professional. Architects are using structured methodologies and frameworks, most prominently TOGAF. A majority use specialized tools to support their activities. However, only 21% of the respondents have implemented processes or automated interfaces to keep architecture documentation up-to-date.

EA needs to become more focused on metrics. Despite the general acceptance of EA, architects find it increasingly challenging to justify EA investment - 61% claim to do so, the lowest number since we initiated this survey. However, the number of organizations that justify EA increases to 85% in organizations collecting appropriate metrics. In addition, 57% of organizations are linking HR incentives of roles such as Programme Managers and IT Directors to architectural compliance.

To get ready for future expectations of organizations, we recommend that EA teams:

- Improve interaction and communication with Senior Management. In order to make an impact, EA benefits need to be presented with sufficient data demonstrating value realized.
- Focus on metrics. Architecture teams with a broad spectrum of measurements are more successful in justifying their efforts and obtaining buy-in to their suggestions.
- Build an architecture team with the right mix of skill sets. For the core architecture team, that means building business and management skills, either within existing staff, or through inclusion of contributors from functions outside IT.
- Run architecture 'as a business' and get work done more effectively, by moving responsibility for artifact maintenance to project teams (through processes), and evaluating opportunities to execute non-core activities through strategic vendor partners.



2. Enterprise Architecture aims for Business-IT Alignment, Process Improvement and Flexibility

Alignment of the business and IT organization is the #1 objective of enterprise architecture - which is not really a surprise, as it has been the mantra of the EA community for several years. It's fourth in terms of benefits achieved, so organizations have made quite a bit of progress achieving it.

More interesting, however, are the ranks 2, 3 and 5: Business process standardization; business and process flexibility; and business transformation. These are tasks which demonstrate that Enterprise Architecture has grown well beyond the realm of IT. Organizations start leveraging it as a tool for driving the same kind of flexibility into their operations, as they expect from IT. This is a topic underpinned by the role of EA in strategic planning and general transformation initiatives (see 3.1 and 3.2).

The simplification of the technology and application portfolio, rank 4, is an important enabler of these agility factors. The fact that this is mentioned also reflects the pain resulting from an ever-increasing collection of technologies, kept alive by staff who see their livelihood linked to legacy platforms. The long-term technology strategies provided by EA can not only help reduce these complexities; they also enable HR to retrain staff in a timely manner, reducing resistance to change.

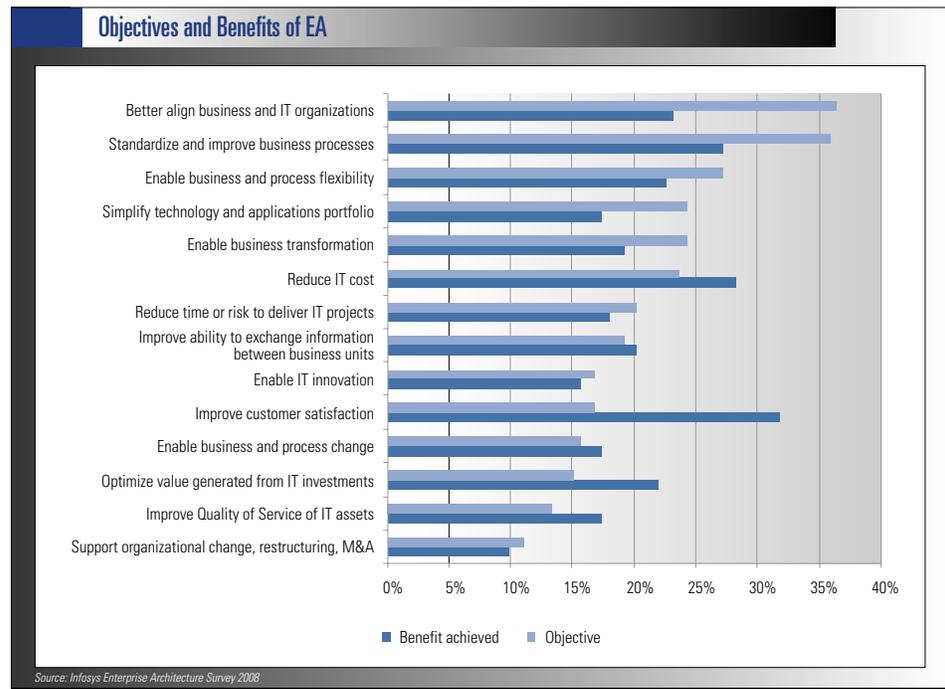


Figure 1: Alignment, Standardization and Agility are the top priorities for Enterprise Architecture

The #1 benefit quoted is increased customer satisfaction - most likely related to the issues created by incorrect data. The benefit ranked second - IT cost reduction - demonstrates that EA keeps its promise.

3. Architecture becomes an important tool for driving organizational change

For several years now, architecture teams state that EA is more than IT. But what does that "more" mean?

The survey found that architecture teams are getting a broad exposure to the strategic business planning process of the organization. They are accepted as advisors - not only within, but also outside IT. A key contributor to this development is that architectural approaches gather acceptance as a tool for transformation even outside IT.

3.1 Organizations start using architectural approaches beyond IT

Nothing surprised us more than the reply to the question on the role of Architecture in transforming the corporation: 22% of the respondents stated that the organization uses a structured, capabilities driven, architectural approach for strategy implementation and organizational development.

Wondering whether these numbers reflected corporate reality, or rather the aspirations of the enterprise architects who were the target group of this survey, we went into informal discussions with architects. They told us that architectural approaches do not necessarily relate to the work of enterprise architects: organizational design and business re-engineering leverage similar concepts.

In another 55% of organizations, Enterprise Architecture focuses on its "traditional" role of driving IT transformation as part of organizational change, or defines the broad landscape independently of that.

We found 24% of organizations with an architecture function in a slightly precarious situation. They do not control the impact of large change initiatives onto the organization, or they are just focusing on technology, and are not getting involved with organizational change. This is risky. Cut-off from the activities which prepare the organization for its future, EA is irrelevant for senior management - and this is the group which develops the real architecture of the enterprise. In addition EA may also be pushed into a reactive mode where it tries to influence activities after the event, rather than providing guidelines beforehand. The result is that architecture is perceived as a hindrance, rather than as an enabler.

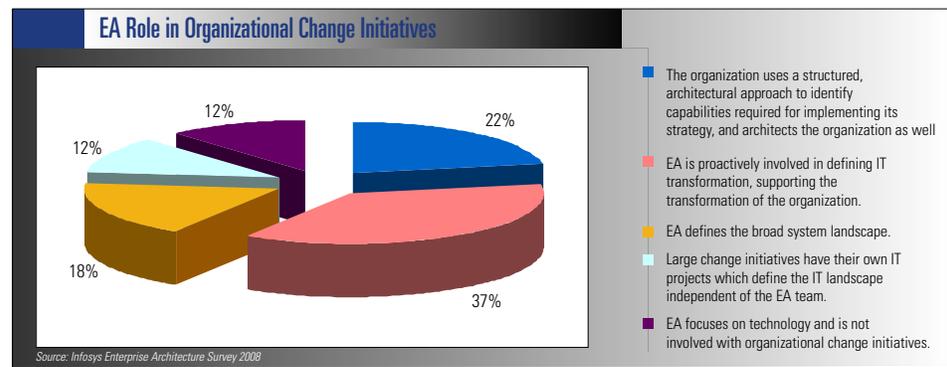


Figure 2: EA has a growing role in organizational transformation

3.2 Enterprise Architects are accepted advisors - even outside IT

In 58% of the organizations, enterprise architecture teams are trusted advisors for all architectural decisions of IT projects. In one third of these organizations (18% of the overall sample), they even advise on change which is not IT related. This is great, as they can help build a shared vision of the future capabilities required by the organization. It also enables a more holistic approach to change, which runs transformation in parallel streams in multiple areas of the organization.

In another 24% of organizations, architects are involved in project milestone reviews. This helps them to enact the architecture to a certain degree. However, there is a risk that corrective measures are taken only after the fact - potentially impacting project deadlines.

The remaining 18% of organizations have a major governance issue: Their EA teams are involved either only at an informal level, or not at all. While informal, "soft" ties into major initiatives are essential to influence decision making processes, they are usually not good enough in cases of conflict. Furthermore, a lack of formal process involvement also tends to indicate that no other governance mechanisms for enterprise architecture are in place.

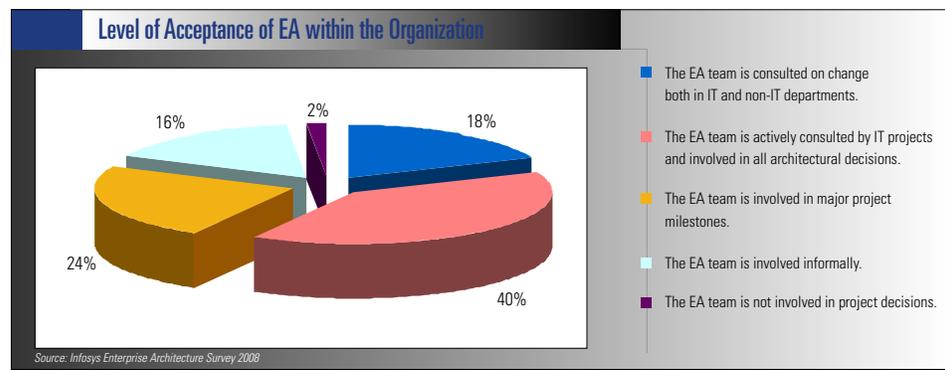


Figure 3: Enterprise Architects are in demand as advisors - both within and outside IT

3.3 The influence of EA in strategic business planning continues to expand

The involvement of enterprise architects in strategic business planning emphasizes the move of this function from an IT based function to a broader corporate transformation function. We started observing this last year, and it has gained momentum since. In 59% of all organizations (previous year: 49%), Enterprise Architects are at the table for the strategic planning process, either in an active or passive role. In another 38%, they are informed about or have access to the results.

Hardly anybody is still left in the dark on the organization's strategy: The number of enterprise architecture groups without access to strategy and planning dropped from 11% to 3% this year. The few which remain urgently need to work on improving their network within the company, and reassessing the objectives they are focusing on - before the company decides to start with a clean slate.

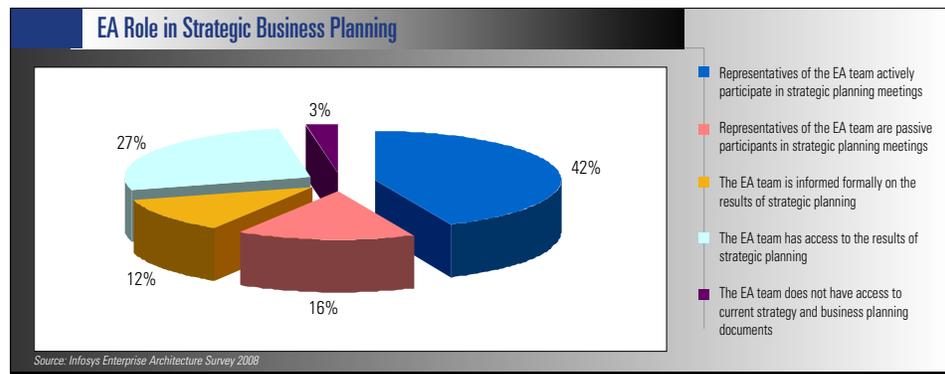


Figure 4: Enterprise Architects are at the table for strategic planning

3.4 This role change starts reflecting in reporting lines

The increasing relevance of EA across the organization is reflected in its position within the corporate structure. 16% of all architecture teams already report to a person outside of IT - the CEO, the head of strategy, the CFO or even the board of directors.

The most common - and probably most natural - line, however, is still the CIO. On the other hand, the reporting into lower level IT functions has slightly decreased.

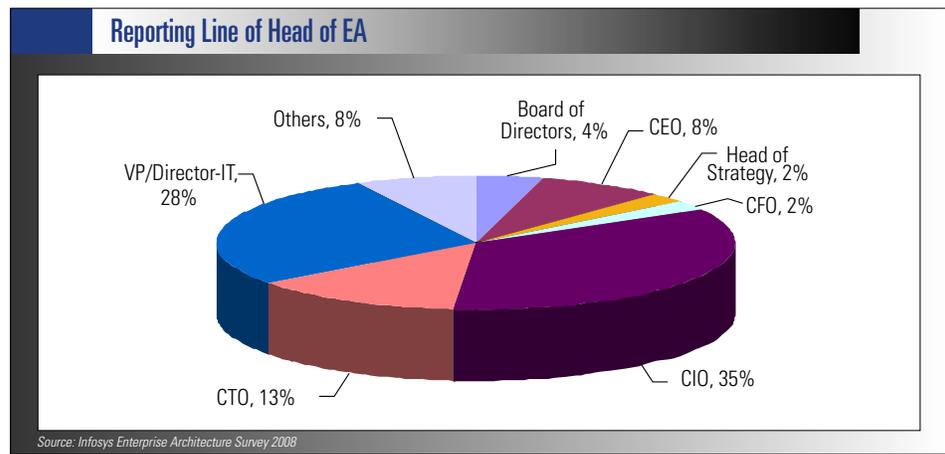


Figure 5: Enterprise Architecture starts moving away from the IT organization

3.5 A separate budget gives independence

59% of all organizations fund Enterprise Architecture from a separate budget, 12% impose a corporate tax onto all units, and 29% charge their architects to projects. All models have advantages as well as disadvantages. The charge-back model ensures prudent use of architectural resources. On the other hand, the involvement of the EA team is in the interest of the corporation rather than the project. A separate budget or a fixed corporate tax therefore may be more consistent with the

objectives of the organization as a whole. It also gives independence for a function which performs a long-term "city planning" function.

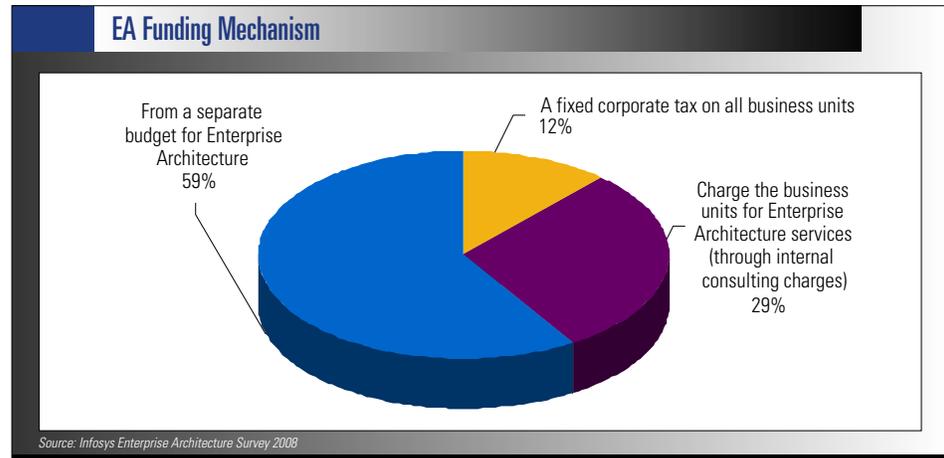


Figure 6: Most EA Teams have an independent budget

4. EA focusses on business and information, and is a key contributor to IT Strategy

Changing expectations require Enterprise Architecture to adapt its approach. It moves its attention from technology standards and applications to business, information and integration architecture to enable agility. Its contribution to IT strategy becomes its most important deliverable.

4.1 Significant resources are allocated to Business, Information and Integration Architecture

This year's survey indicated a major shift of resources to information architecture. Teams spend 26% of their effort in this area, compared to 16% in the previous year⁷. A potential explanation is that information architecture - in particular the management of data semantics - is key to successful integration and consistent reporting. It is a condition sine qua non for adapting service oriented architectures successfully.

16% of effort was invested into business architecture, directly matching the expectations that architecture should drive process standardization and business flexibility.

A major loss of attention can be registered for technical architecture (26% in 2007/ 17% now). It is a base competency, which enterprise architects have to master, but it is not sufficient to justify the existence of a practice.

⁷ This year's numbers are not directly comparable with those printed in last year's survey. Last year, we showed which percentage of teams spent most of their effort in each of the architecture disciplines. This year, we decided to show the average proportion of effort itself, as we deemed this parameter more understandable. We re-evaluated the 2007 survey data on this methodology. The historical data quoted here is the result of this re-calculation.

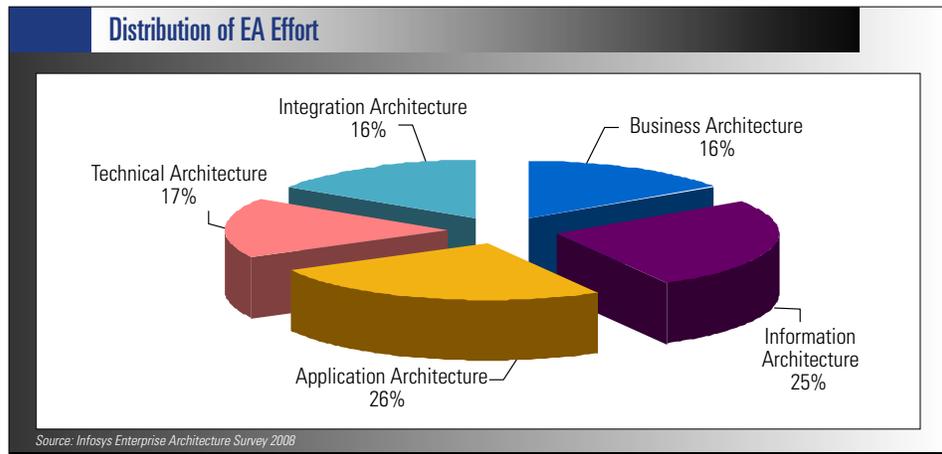


Figure 7: Business and Information Architecture are important activities of EA teams

4.2 IT Strategy becomes the most important deliverable of Enterprise Architecture

The survey found that the most common deliverable now of EA is its contribution to IT Strategy. This is indicative of the key role of EA in making IT an organizational enabler.

Other outputs of increasing importance are business architecture and a shared view of the capabilities the organization needs to provide in the future. These artifacts are key in coordinating organizational transformation programmes by establishing a shared vision.

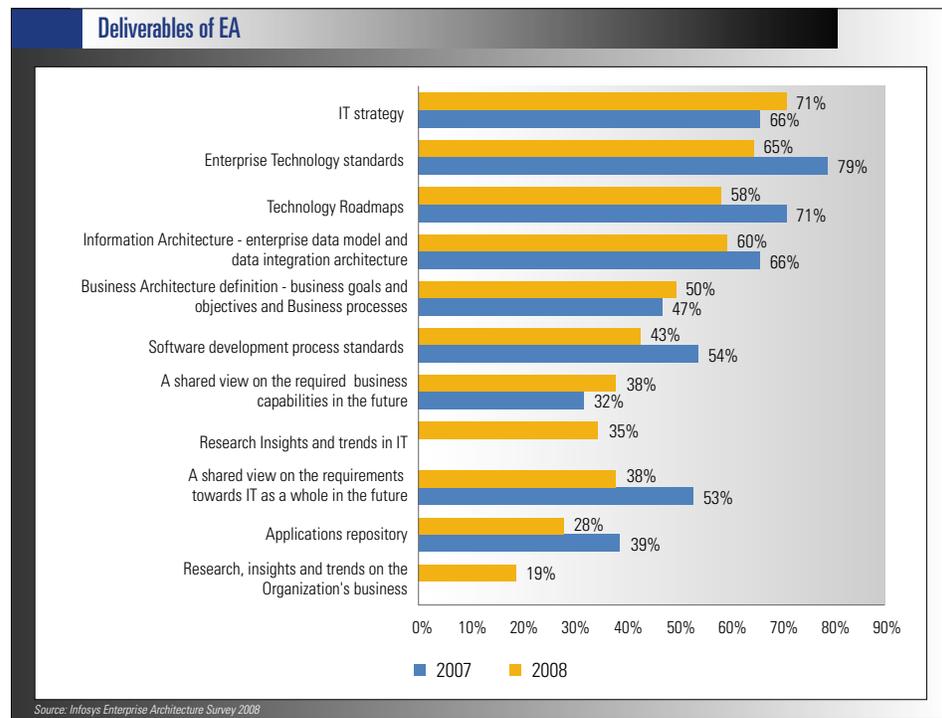


Figure 8: EA yields a major contribution to EA strategy

Last year's top deliverables, enterprise technology standards and technology roadmaps, have both been demoted. These represent the legacy of the EA function; nevertheless, they are still required for an efficient IT environment.

4.3 EA focusses on Integration, SOA, Security and Information

Integrating disparate systems while enabling business agility and flexibility continues to be a key task of Enterprise Architects. Both Integration and Service Oriented Architecture were ranked a "critical" or "high" (on a five step scale) by 67% of the participants.

Identity management and security continue to be among the top concerns of organizations. Enterprise Data Architectures stay in focus - aligned with the activities of EA mentioned above. This is not the old corporate data model with large, monolithic databases which often stifled change in IT. It is a federated approach to managing the semantic integrity of the organization's information assets. Rather than aiming at instantiation in one behemoth of a database, it coordinates the flow of information. This makes it a key enabler of a service oriented architecture.

Remarkable is the drop in importance of customer data integration and master data management since last year. This may be the result of successful projects in these areas within the past years.

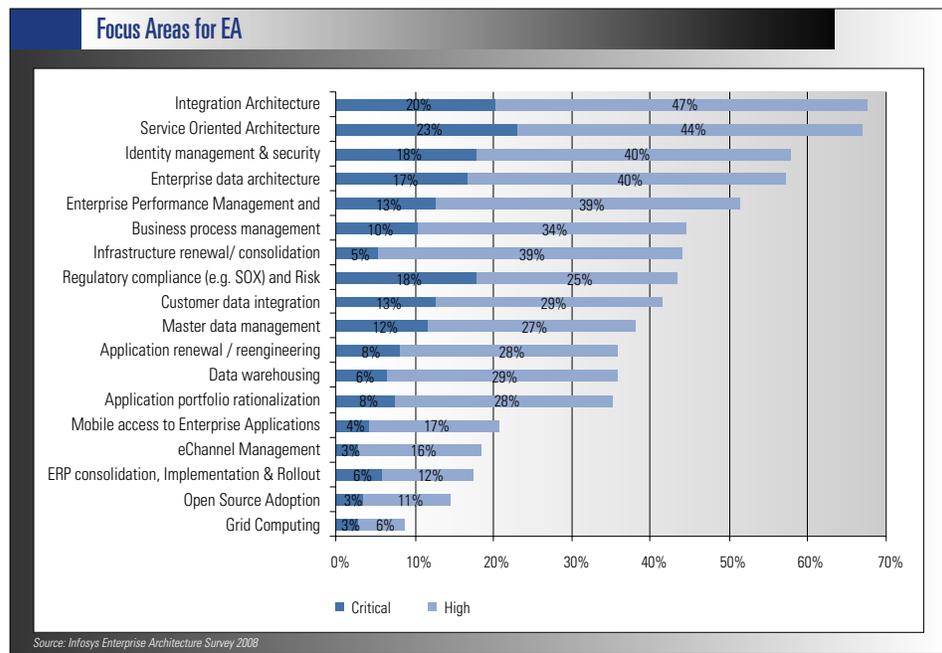


Figure 9: Integration and SOA are key focus areas for EA

4.4 Infrastructure decisions are taken at enterprise level - beyond that, decision levels are varying

To understand how enterprise technology architecture is implemented, we asked which technology decisions are taken at which level of the company hierarchy - at enterprise level, in the major business

units, at line of business or project level. We found that key influencers are the "infrastructure-ness" and the maturity of technology.

In summary, the more infrastructure there is, the greater the drive for and achievement of standardization. Networks, servers, operating systems, storage etc are decided centrally in most of the organizations.

Low maturity of technologies pushes decisions to the project level, as shown in the case of grid computing. In such areas, organizations often do not have sufficient data to mandate a common platform.

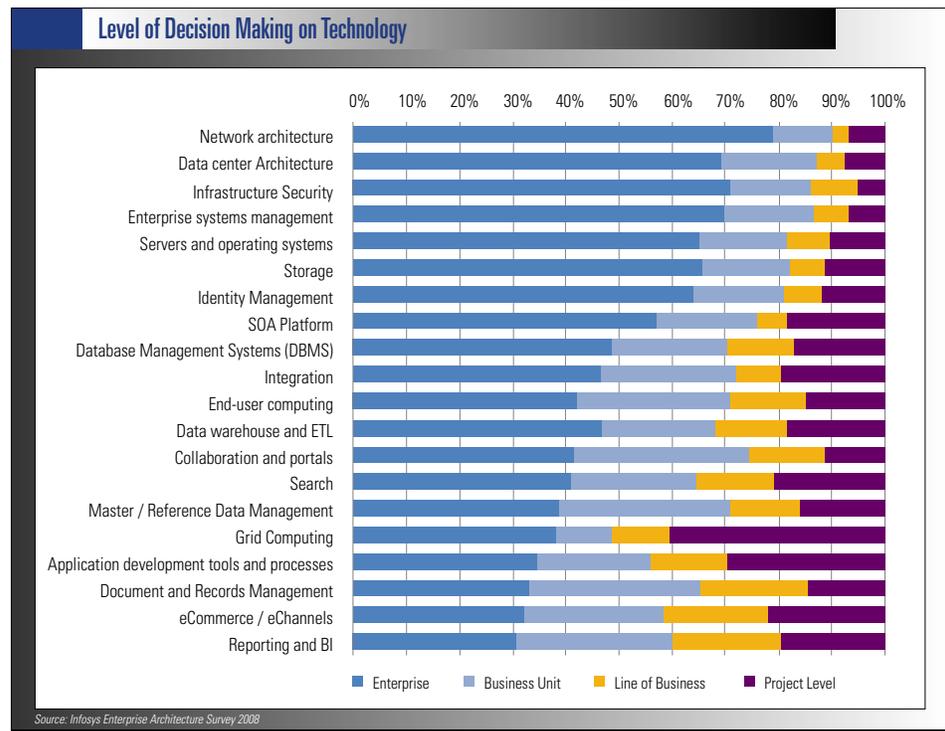


Figure 10: Infrastructure decisions are centralized

5. Enterprise Architects do not need to do everything themselves

Over the last years, Enterprise Architecture has become an accepted core element of the organization's capability of managing IT, and most organization have established this function.

However, the wide set of skills required in business functions, technology, general management and soft skills make Enterprise Architects one of the scarcest resources in the organization. The need to leverage them effectively raises questions about the potential to push tasks down to the project level, or to source them externally.

5.1 Most organizations by far have a full time architecture function

77% of the organizations in our sample have a full-time architecture function now - after only 59% in 2007. It is important progress, as the development of an organization's overall IT capabilities really is not a part-time job.

In many cases, the architecture function is federated (i.e. a central architecture group makes the decisions which need to be coordinated across the organization, and teams in the business lines specialize the architecture for their needs), or the central architecture team is supported by an extended team from the lines of business.

23% responded that their architecture function is part time or does not exist. This percentage has dropped massively since last year (from 41%). A part time or non-existent EA function will not be sustainable for any but the smallest organizations.

Outsourcing of the entire EA function does not play a significant role. Enterprise Architecture is a critical function in managing the IT function. Therefore, it is difficult to see how an organization can give up this critical lever, unless it has decided to outsource IT as a whole (which also has not necessarily proven successful in most environments).

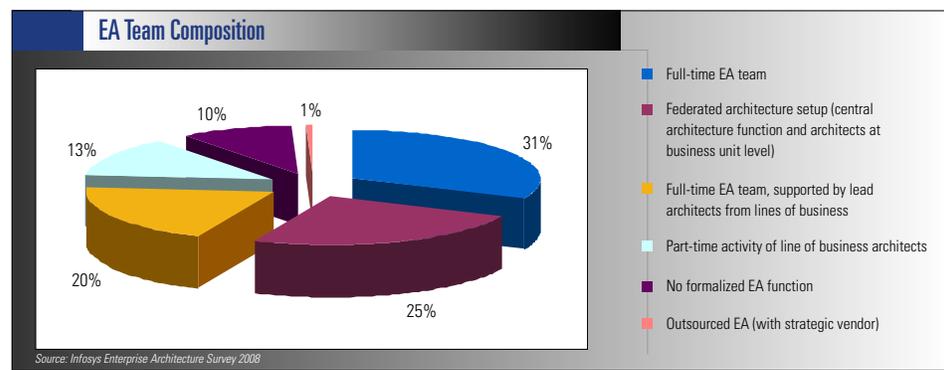


Figure 11: Most organizations have full-time architecture teams

5.2 Enterprise Architecture teams are 2 - 4% of IT staff

It is difficult to compare the size of enterprise architecture teams across corporate boundaries, as both decisions about the organization of the EA team (centralized vs federated) as well of the structure of IT as a whole (in particular on the proportion of outsourced IT activities) influence the numbers. In a federated setup or with virtual teams, it is difficult to define what to count, and getting a detailed picture would require research beyond the scope of this survey.

We have asked how many FTEs are working in IT, and how many are Enterprise Architects (Figure 12). We limited the sample to clients with at least 50 employees in IT. The ratio ranged from 0.07% to more than 30%. The median was 2.4%. The arithmetical average (excluding the top and bottom 10%) was 3.5%. The average weighted by number of IT employees 1.7% and the geometrical average 2.6%. (Feel free to choose your number!).

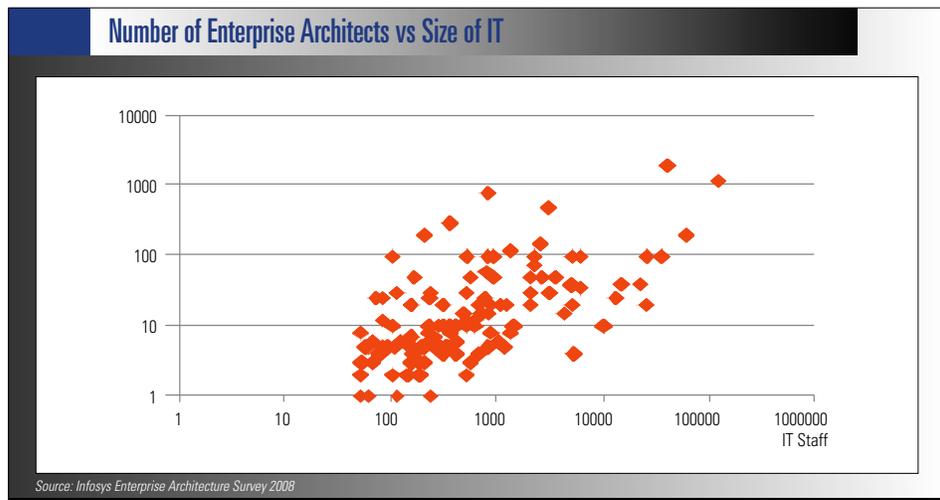


Figure 12: The number of Enterprise Architects depends on total IT staff

While large firms do tend to have larger enterprise architecture teams, they do not grow proportionally with the size of the IT department or the company size. Most of the largest companies with more than 1000 employees in IT have 10 - 50 people working in Enterprise Architecture (Figure 13).

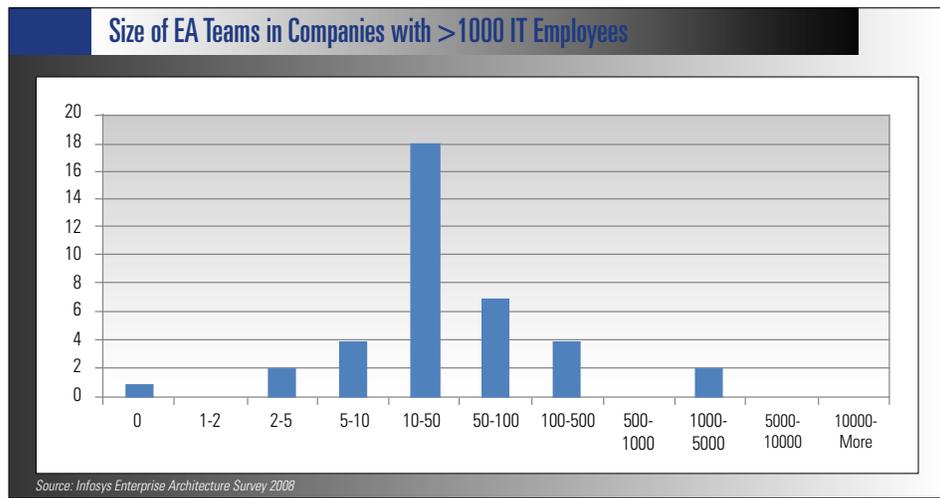


Figure 13: Large organizations most commonly have 10-50 employees in Enterprise Architecture

5.3 The roles of Chief Architect and EA Programme Manager are often segregated

The roles of architects and project managers require some very different character traits. And, therefore, not every chief architect is the ideal person to run the EA programme. Half of the organizations split these roles.

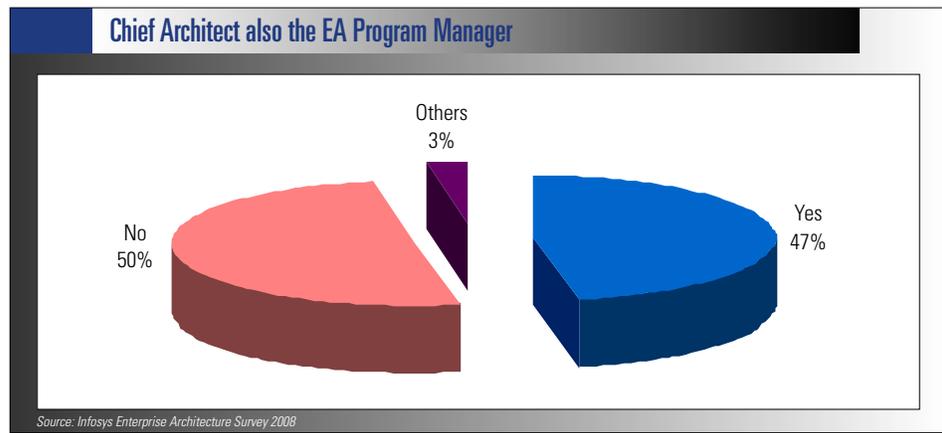


Figure 14: Not all Chief Architects are also running the EA programme

5.4 EA Teams spend significant resources on project support and administration

Only 36% of the time of Enterprise Architecture teams is spent on EA specific activities such as EA planning and standards definition. 45% of the time is consumed by project specific activities like project architecture definition, and 19% sunk on administration. Given the shortage of EA resources, this is an unfortunate situation.

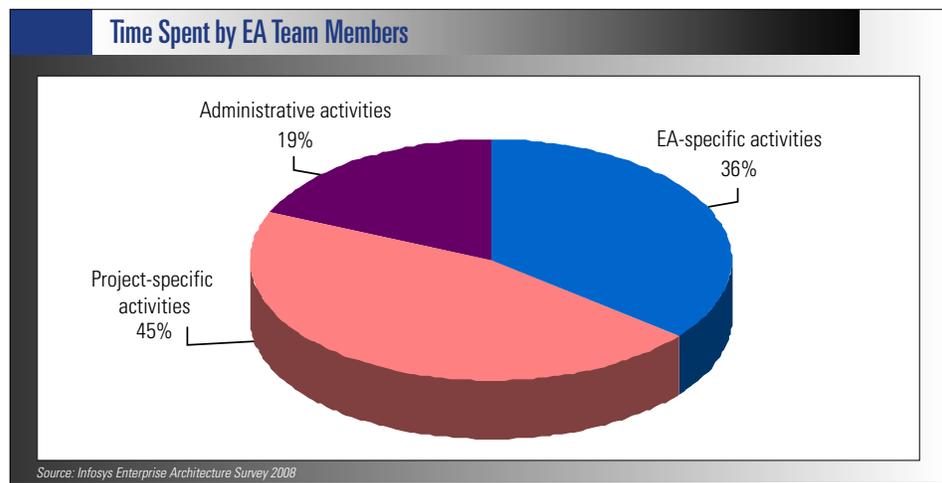


Figure 15: Only a fraction of the time of EA teams is spent on EA specific activities

5.5 There is some interest in sourcing elements of EA externally

Enterprise architecture teams face a significant challenge hiring suitable staff. Demand is increasing from various sides in the organization - they are involved with strategy discussions as well as project reviews. Resources are stretched. And hardly any team manages to keep track of all the projects in the organization.

Therefore, in many organizations, the architectural integrity of the organization is at risk of being compromised by "submarine projects" - activities big enough to change the landscape, but too small to show up on the radar of the architecture teams.

In the past, organizations have approached this issue by staff augmentation, leveraging their system integrators or contractors. While it is a flexible and straightforward approach, it imposes some challenges - most importantly a lack of control on the scope of activity that the individual performs. More than once, such a person became critical for the organization, imposing issues for the client (which were often solved by hiring the person). On top of that, in case of system integrators providing the individual, it becomes difficult to move the employee to other activities.

We believe that organizations should consider a different approach - outsourcing well-defined work packages (of suitable granularity) to a service provider. This way, for example, an enterprise can send non-critical projects to an external reviewer, while doing the reviews of critical transformation projects with its core architecture team.

We asked survey participants to rank the potential for outsourcing certain activities of Enterprise Architecture teams on a scale from 0 (no potential to outsource) to 4 (strong potential).

As expected, the interest in such an offering varies greatly. 19% of the respondents rate the potential to outsource project architecture reviews as strong or medium to strong (3 or 4). On the other hand, only 5% judged architecture planning a task to give away - not a surprise.

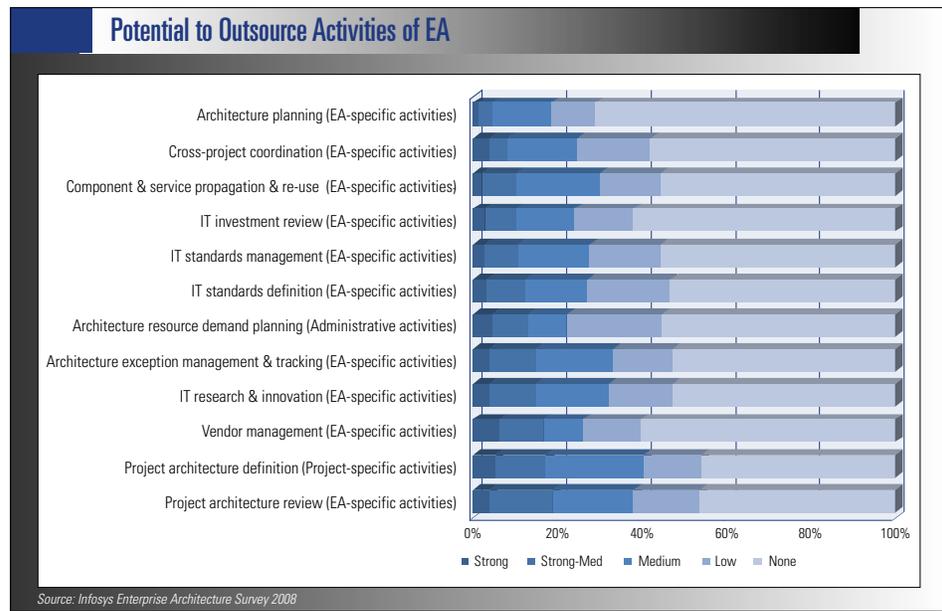


Figure 16: There are elements of EA where outsourcing is an option

Outsourcing certain elements of the Enterprise Architecture function has the potential to grow in line with outsourcing of other IT services. The results are illustrative of the trend where EA teams, involved in larger initiatives, supplement teams by engaging with trusted partners to enhance capacity. By outsourcing non-core tasks, Enterprise Architects can focus on other strategic activities.

6. Frameworks and Tools are helping to professionalize the EA function

6.1 TOGAF is the EA Framework with the widest adoption

TOGAF has become the market leader as a general EA framework. In telecommunications and insurance, eTOM and ACORD have significant adoption rates. ITIL and COBIT are non-architectural IT frameworks with strong adoption.

We have asked about the adoption of three classes of frameworks:

1. General Purpose Enterprise Architecture Frameworks
2. Specialized industry architecture frameworks
3. Other IT frameworks.

This year, TOGAF has passed Zachman in terms of overall adoption ratio (32% vs 25%). This is good news - as TOGAF is an action oriented framework which helps architects actually drive change. It came as a surprise to see that TOGAF is used more frequently than its competitor FEAF even in the government sector (44% vs 12%).

Among industry specific frameworks, eTOM achieves 33% in telecommunications, and ACORD 31% in insurance.

On the operations side, ITIL has an enormous adoption ratio of 47%.

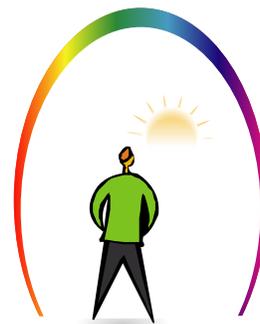
IT governance is influenced more and more by COBIT, which is used by a quarter of the organizations.

In the future, we expect that:

Organizations adopt a standard process like TOGAF for creating architectures, as there is little value in creating a home-grown process, and because the work of architecture teams becomes too complex to run it artistically.

Industry frameworks will become available for more and more industries, and will provide a template for architectural content.

Industry frameworks will be populated using general purpose process frameworks like TOGAF.



The leading frameworks will focus on interoperability, rather than expansion of scope into areas covered by other framework categories.

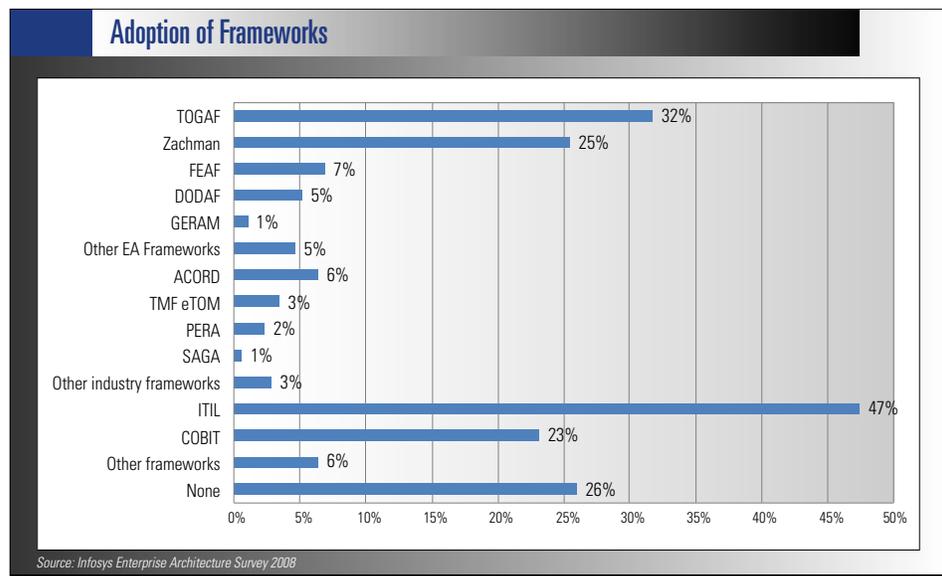


Figure 17: TOGAF has become the most popular EA framework

6.2 Most organizations customize frameworks to adopt them to their needs

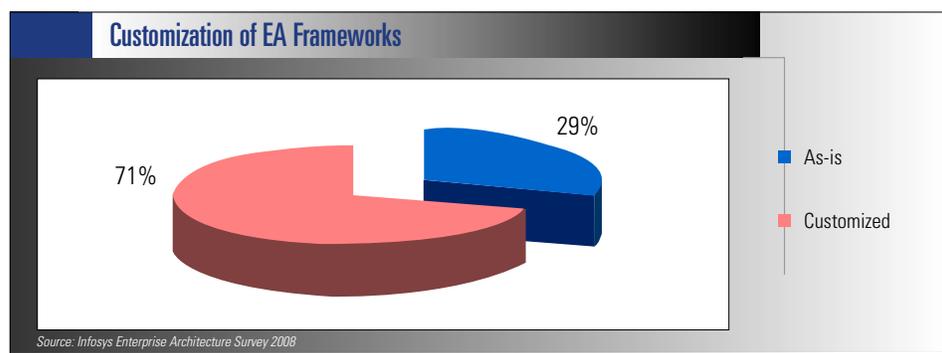


Figure 18: Most organizations customize their EA framework

Most organizations (about 71%) customize EA frameworks they use - most commonly to adopt them to the structure of and the processes within their organization. This work is inevitable to ensure effectiveness of the EA team.

The desire to reduce the scope of a complex framework to the needs of the organization points to the same direction; i.e. it is good practice to do enterprise architecture with an end in mind, rather than blindly filling in a framework. There is no way of capturing everything that might be relevant in the future.

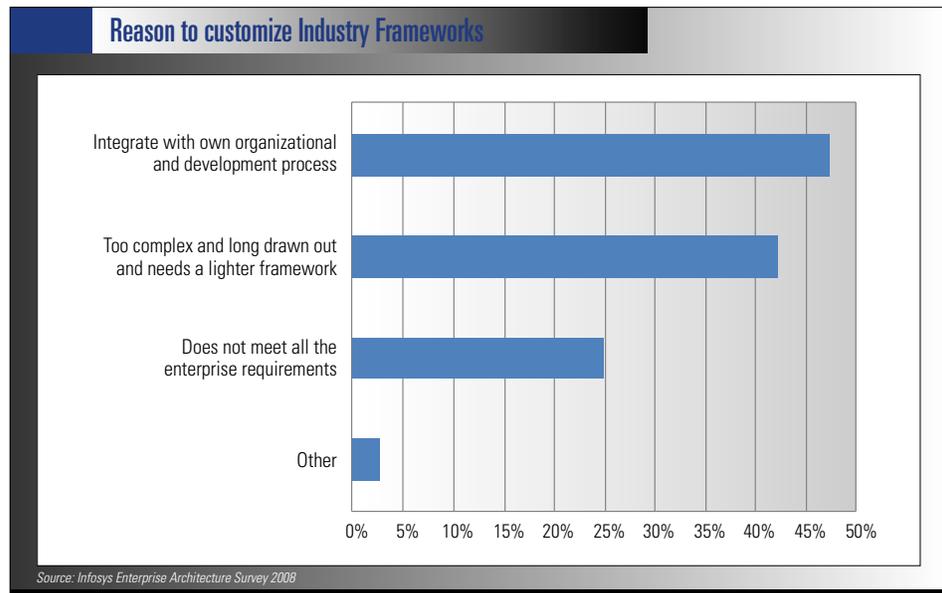


Figure 19: Frameworks need to be adjusted to the organization and to the scope of EA within

6.3 EA Tools have increased adoption, but there is no product which has managed to dominate the market

No doubt - Microsoft Visio and Office are important tools for Enterprise Architects, and that's hardly a surprise. A graphical architecture definition language may be a great tool for the architect's workbench, but will rarely present an adequate means of communication to top management.

Nevertheless, not only the sheer volume of information, but even more their interdependencies make it a fairly daunting endeavor to maintain architecture documentation just with general purpose drawing and text processing tools. A significant number of architecture teams - 60% by now - have understood this, and use at least one such tool in their practice.

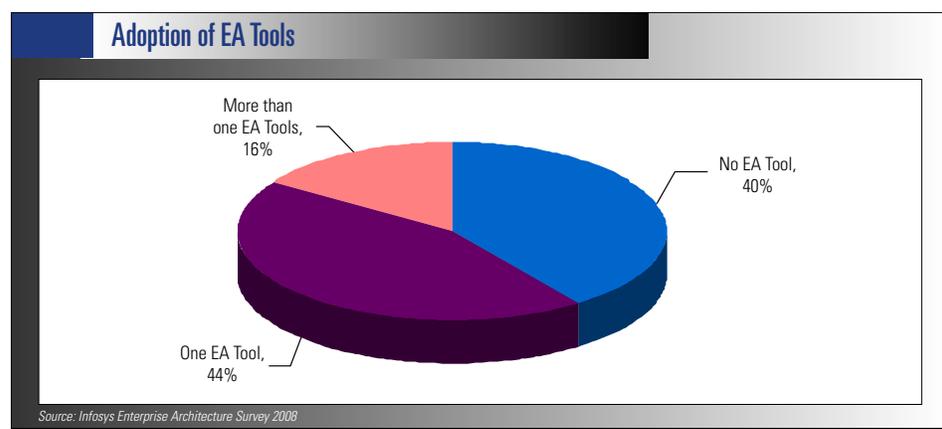


Figure 20: 60% of Architecture Teams rely on specialized tools

The reasons for not leveraging such an instrument have shifted. Fewer than 20% of EA teams still believe that the portfolio is not large enough to warrant it. Concerns about licensing cost have diminished, although this still forms a considerable entry barrier.

This leaves the group which already uses software design tools to model their EA, and is relatively comfortable with them. That may have historical reasons, for example the EA group existed before reasonable tools were on the market (an indicator is that this is quoted by 50% of the organizations with more than 100,000 employees).

Modeling information at the enterprise level can look very similar to doing it at a project level. However, the danger of using software design tools for EA is to be locked into a very technology centric approach. Software design tools lack the ability to manage strategic drivers and their implications. They also lack the capability of serving as a communication tool for the architecture to the rest of the organization, and lack functionality to manage a portfolio as a whole.

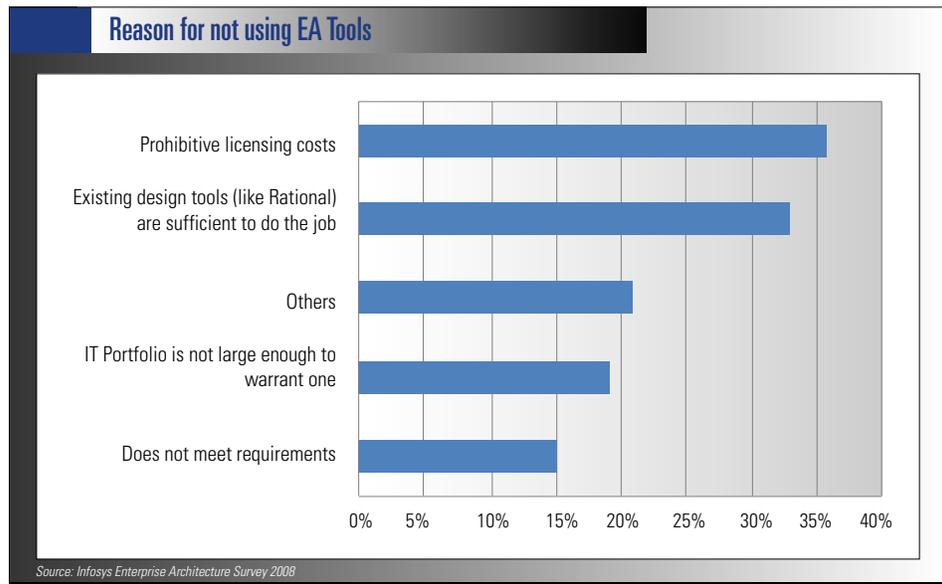


Figure 21: Licensing cost is still an adoption hurdle - but it is less quoted

None of the tools dominates the market; leaders are Framework Software with 20% and IBM/ Telelogic System Architect with 15% of the organizations using tools. Surprisingly, home-grown tools are still used by a significant number of organizations - more often than the market leader.

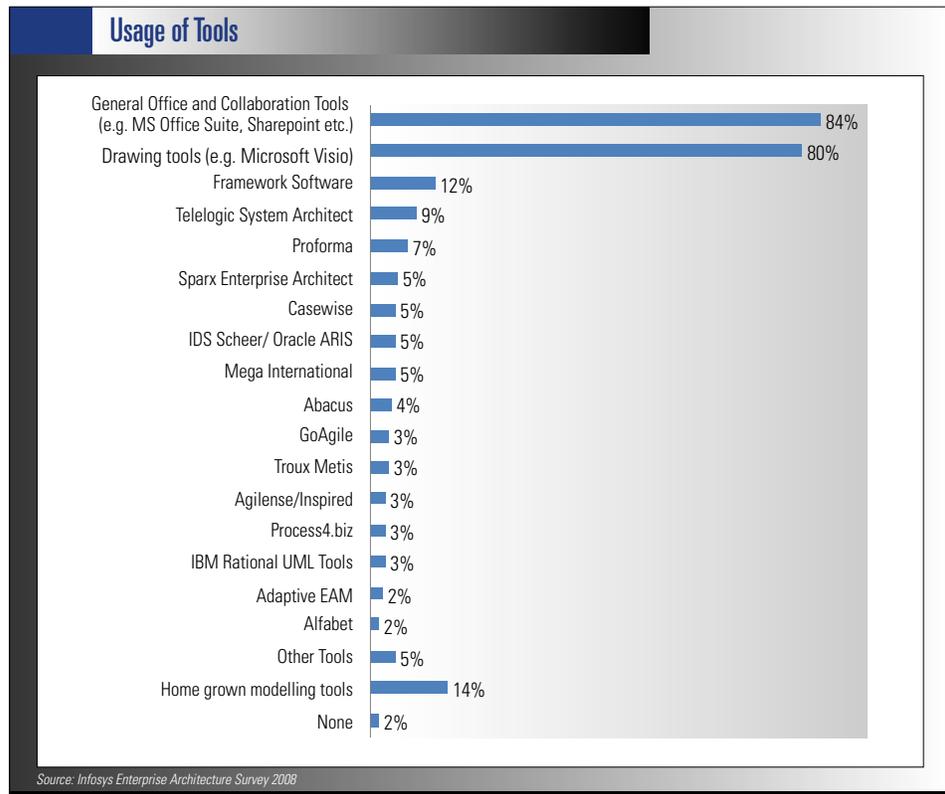


Figure 22: The EA Tools Market is fragmented

6.4 Only a minority ensures up-to-date data by processes or technology

79% of the respondents have no adequate mechanisms to keep architecture documentation up to date. This figure is alarming, and endangers the credibility of the architecture function.

Only 21% of all organizations either have integrated the management of EA artifacts with EA and SDLC processes, or have technical approaches in place to keep the data up to date.

A "periodic" update of artifacts forces the EA team to reconcile the documentation with reality after the fact - a Sisyphus work for a small architecture team, trying to keep up with an IT function 30 - 50 times as big. Managing the data when it is required is a friendly paraphrase for the fact that each attempt to use it reveals its unreliability, and forces the architects to capture it anew. And 12% openly admit that they do no management of information at all, leaving it to deterioration.

These results are highly concerning. Enterprise Architects need to start governing the architecture and its descriptions more actively. Unreliable data has the potential of impacting their trustworthiness within the organization and, therefore, needs to be avoided.

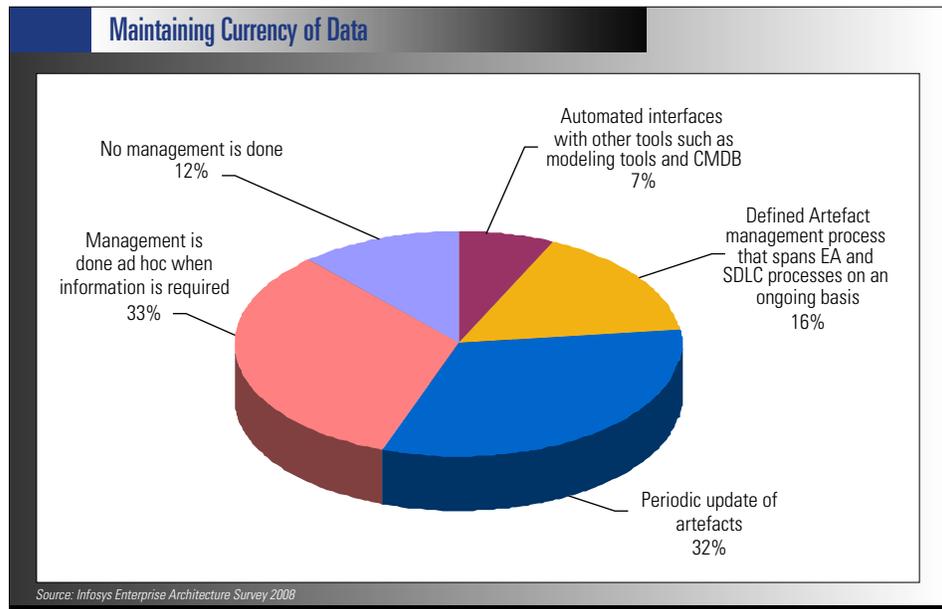


Figure 23: Only 21% of organizations manage their architecture data effectively

7. Justifying and enforcing EA continues to be a challenge

Architects find it more and more difficult to justify the investment into EA. This not a surprise in organizations which do not collect metrics on EA (still 29%). Those which do can benefit from cost savings and reduced risk in several areas. Most organizations have understood that HR incentives are a powerful tool for enforcing architecture compliance.

7.1 Only 61% of all EA teams can justify EA investment

Since our first survey in 2005, the number of organizations able to justify their investment in Enterprise Architecture is in a constant decline. This is worrying, to say the least. Either organizations have become more demanding in the quality of business cases, or they are losing patience with the EA function, which has been around for years, and is supposed to deliver tangible results.

We analysed the reasons why organizations see issues. While the IT internal issues have reduced significantly since 2007, communication with non-IT stakeholders still is a significant issue.

The statement that "business simply does not understand the value of EA" may indicate that Enterprise architects are not able to package their message in an adequate form for non-IT stakeholders. It may also mean that they do not measure their success in a way which is acceptable to the rest of the organization. They should assess and understand the reason for these issues swiftly, and fix them.

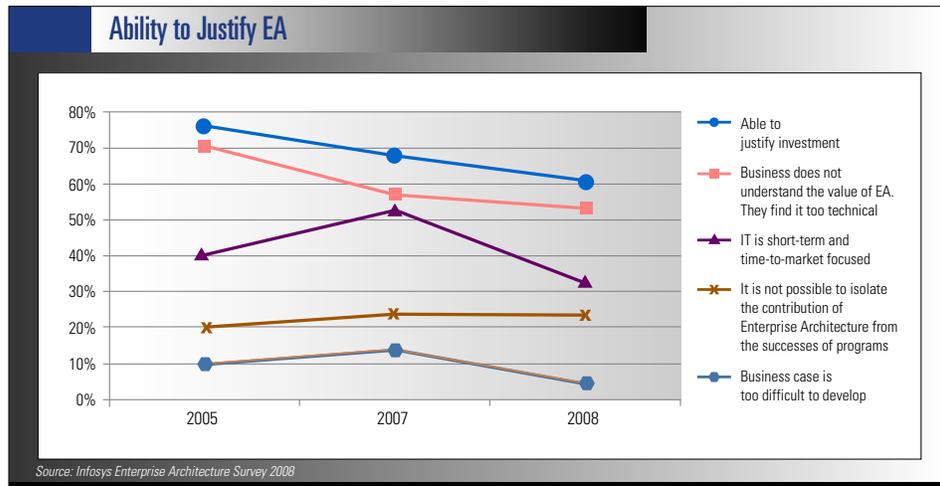


Figure 24: The ability to justify EA is declining

It is subject to further research to understand how the shrinking ability to justify EA investment matches the increasing span of influence documented above.

On the other hand, it should not be ignored that 61% of the organizations are able to justify the expenditure. They have built business cases which are not necessarily based only on benefits internal to the IT function; rather, they very often stem from optimizations in other functions which are supported by IT.

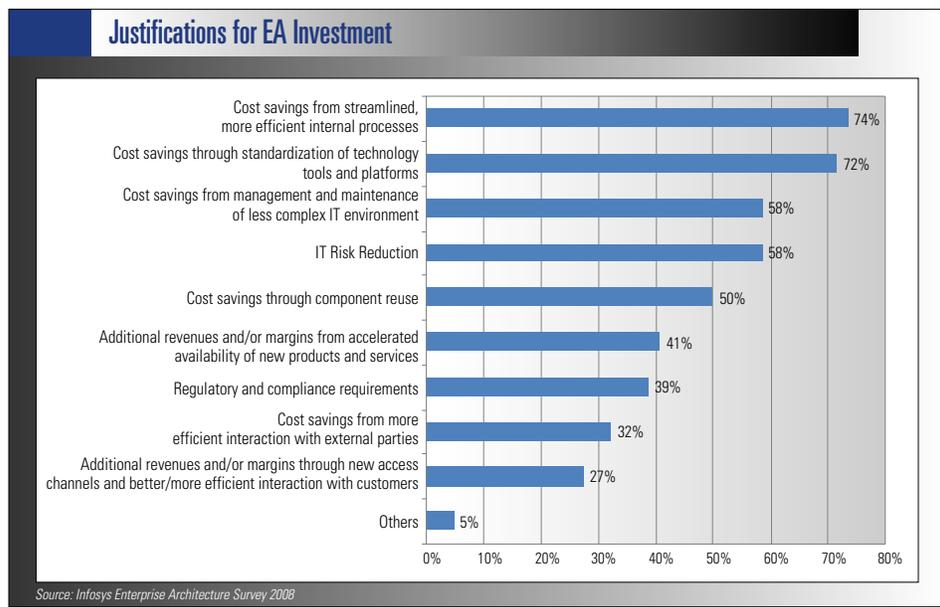


Figure 25: Building the case for Enterprise Architecture requires looking outside IT

We recommend that all enterprise architects take the communication issues around architecture very seriously. They should:

- Analyse who their key stakeholders are - this is a function of architectural maturity within the organization
- Assess the satisfaction of these stakeholders, and which levers influence it
- Take the discipline of collecting, tracking and presenting hard data (appropriate metrics) regularly

7.2 Justifying EA requires collecting appropriate metrics

71% of all organizations are collecting some kind of metrics on the Enterprise Architecture function - a massive improvement compared to the 56% of the last survey.

Infosys categorizes metrics in three broad classes:

- Activity oriented metrics report what the enterprise architecture team does, how many reviews it performs, how many deliverables it produces etc.
- Acceptance oriented metrics assess if architects are accepted advisors within the organization, and whether their work is leveraged by others
- Value oriented metrics document the benefit generated by the architecture function

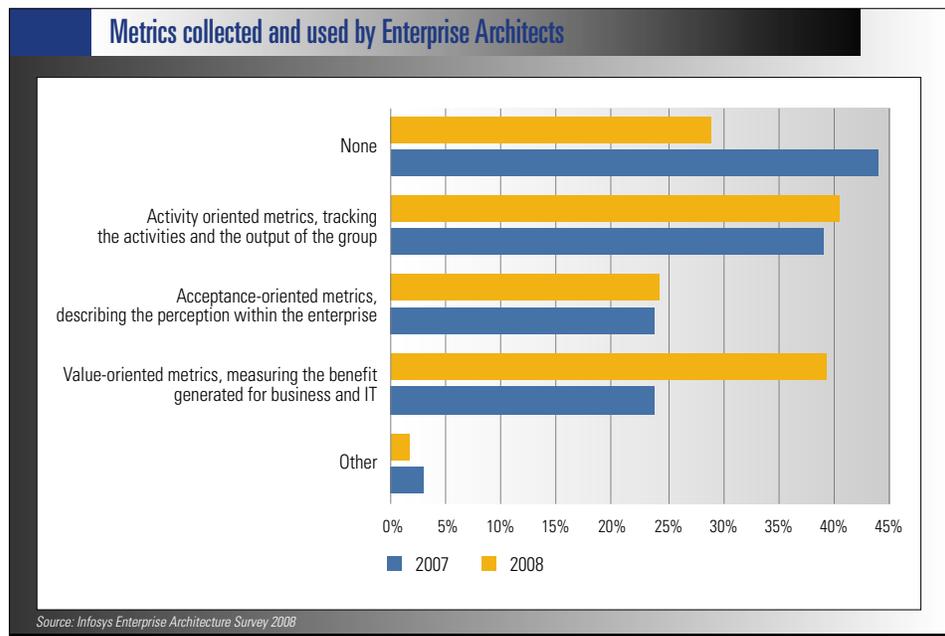


Figure 26: Metrics collection has increased significantly

Compared to last year, we found a large increase in the collection of value oriented metrics.

Not to our surprise, we found a strong correlation between the collection of metrics and the ability to justify architectural effort. Only 42% of the organizations not collecting metrics could justify

architectural effort compared to 69% of those collecting metrics. For enterprise architecture teams collecting all three classes of metrics, 87% managed to justify their existence.

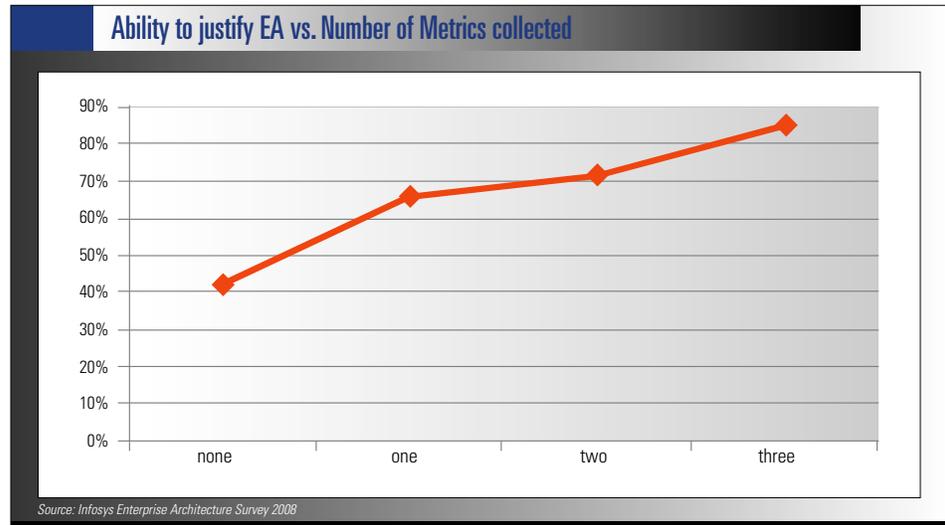


Figure 27: Collecting metrics helps justifying architecture

Not every organization collects metrics on a regular basis: 55% only do so when asked, or never. There is clearly significant room for improving the use of architecture metrics as part of a dashboard for managing the IT landscape.

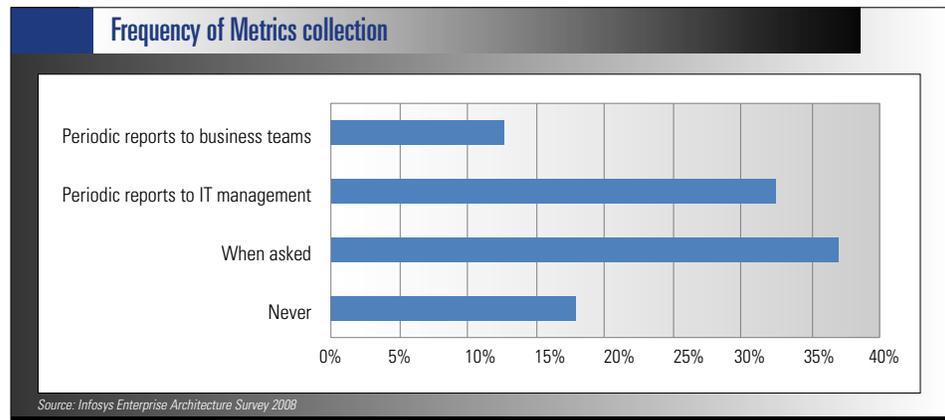


Figure 28: Only 45% collect metrics on a regular basis

7.3 Implementation suffers if there is neither carrot nor stick

You get what you incentivize. Organizations are starting to realize that it is crucial to align each single individual with the goals of EA.

They do so by linking the performance goals of architects, project managers, IT directors or portfolio managers to architectural compliance. Such a connection is established in 57% of all organizations, vs 49% the year before.

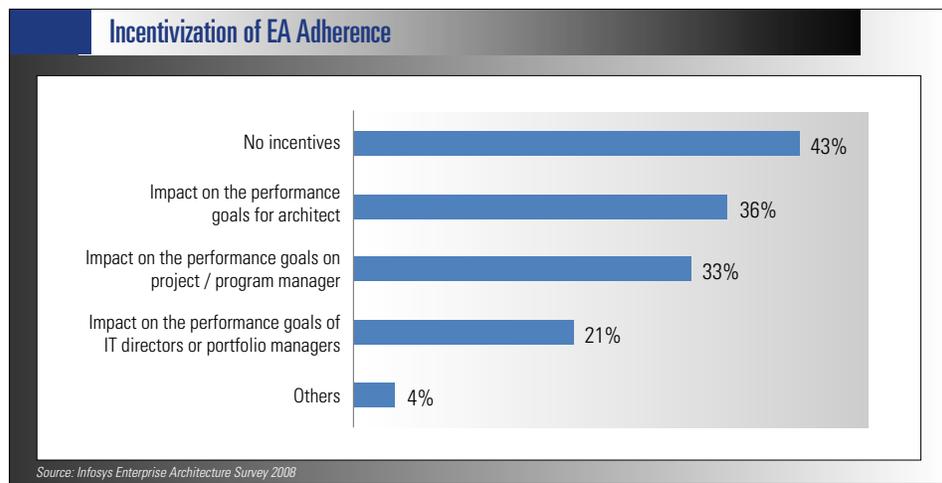


Figure 29: 57% link personal incentives to architecture compliance

Part of an architecture enforcement process is the active management of exceptions. 58% of organisations have this in place.

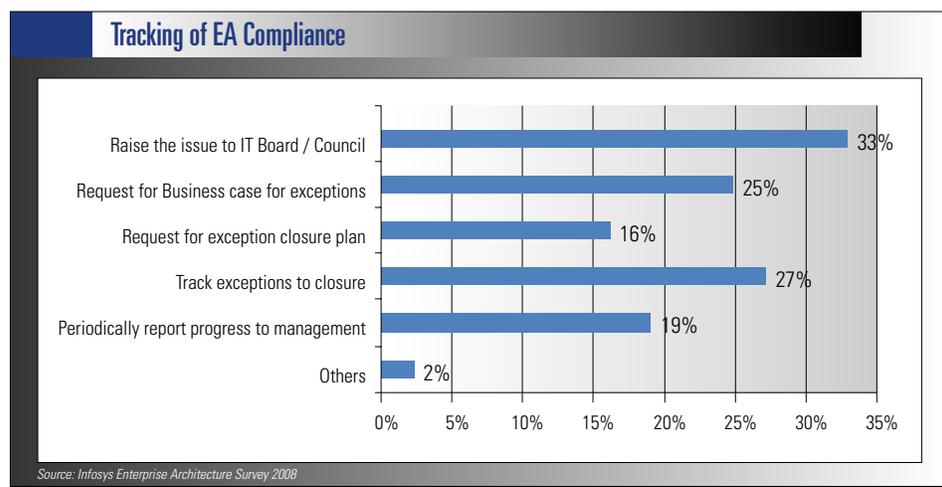


Figure 30: EA compliance is tracked in various ways

8. Recommendations for Architecture Teams

There is no doubt that Architecture has expanded its scope. Organizations expect Enterprise Architects to contribute to organizational transformation in a variety of scenarios, such as the restructuring of operational processes or mergers and acquisitions.

At the same time, the number of teams which believe they can justify the EA effort is declining; and the key issue seems to be communication to non-IT stakeholders.

This is a potentially dangerous situation which may end up with senior management being disappointed with their new partners.

What can architects do to avoid this and to build on their achievements so far? We believe that the most important approach is appropriate, targeted stakeholder communication.

In the past, IT has focused on understanding and analyzing business at an operational level - starting with terminology and key processes. But communicating with, and as part of, senior management means more than knowing what the company does. It requires more than analyzing strategies and value propositions.

Architects need to understand the mechanics of senior management and how facts are collated to drive corporate decision making.

On this background, we would like to give architecture teams five recommendations to get ready for the future:

1

Measure, measure, measure! To change organizational behavior, you need to be able to describe this behavior in a quantitative way, and present clear data on benefits aspired and achieved.

2

Get the CFO organization on board. They are the experts when measuring financial benefits. Also, having a finance person take ownership of EA benefits is like having an ambassador in the unit which has significant influence on corporate budgets.

3

Figure out who are your stakeholders, and build adequate communication with them. Find out how they make decisions, and what data they need to take them in your favour. This will help you achieve your objectives. And, it will give you a new perspective on architectural work and its value.

4

Build an architecture team with the right mix of skill sets. For the core architecture team, that means building business and management skills. This can either happen through training, or by bringing on board people with a background in Operations and line management. And when building your virtual architecture team and your architecture community, try to engage with managers and strategists outside IT.

5

Run architecture as a business. Look for ways of doing your work in a structured and efficient way. If your resources are tight (and they will be tight in the following years with scope expanding and budgets being flat at best), figure out ways of getting work done outside your core team, either through a virtual team, or by sourcing selected tasks externally.

9. Survey Methodology

9.1 Approach

This research was conducted as a web survey. The participants were IT decision-makers and enterprise architects of large end-user companies. They were identified by Infosys from its customers and by a web publishing agency.

Participants were asked to fill in a questionnaire of 24 questions which was hosted on the agency web site. The number of questions was limited to achieve wide participation. The time to fill in the questionnaire was estimated at 15-20 minutes.

A total number of 207 responses were received and reviewed. In case of inconsistent or incomplete answers, the entire response from the participant was discarded from the analysis.

The remaining 173 replies were analyzed and these form the basis of the survey results.

9.2 Timing of Survey

The survey was prepared in May and June 2008 and conducted in July and August 2008.

9.3 Survey Participant Profiles

The respondents were selected from two groups:

1. Infosys customers with EA teams that we have access to.
2. Participants with EA-related functions identified from the database of a web publishing agency.

9.4 Company Size

67% of the organizations considered for this survey have 1000 or more employees.

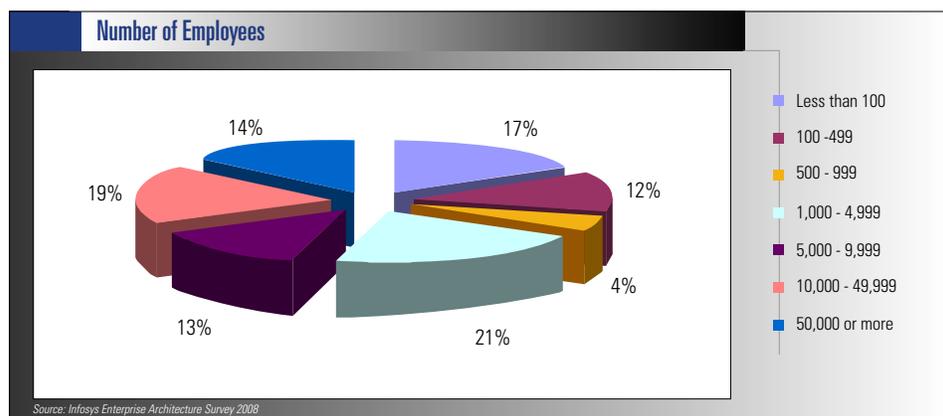


Figure 31: Distribution of company size

9.5 Geographical Distribution

The greatest number of respondents are from North America, followed by Europe. This distribution broadly follows the size of the global IT markets.

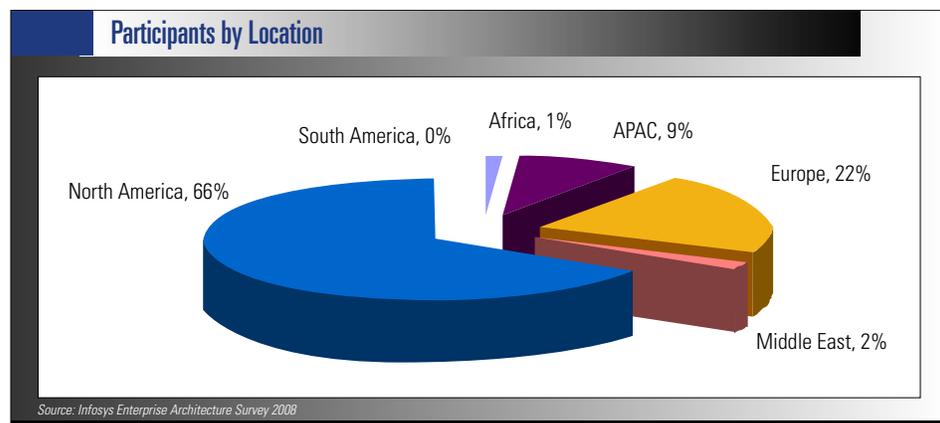


Figure 32: Distribution of participants by geography

9.6 Industries

The respondent organizations are distributed across industry sectors, with strong representation from the Professional services firms, Banking and Capital markets and Government & education sectors. This concentration corresponds with a certain focus within the Infosys client base, as well as the relatively high importance and maturity of the EA function within these business areas.

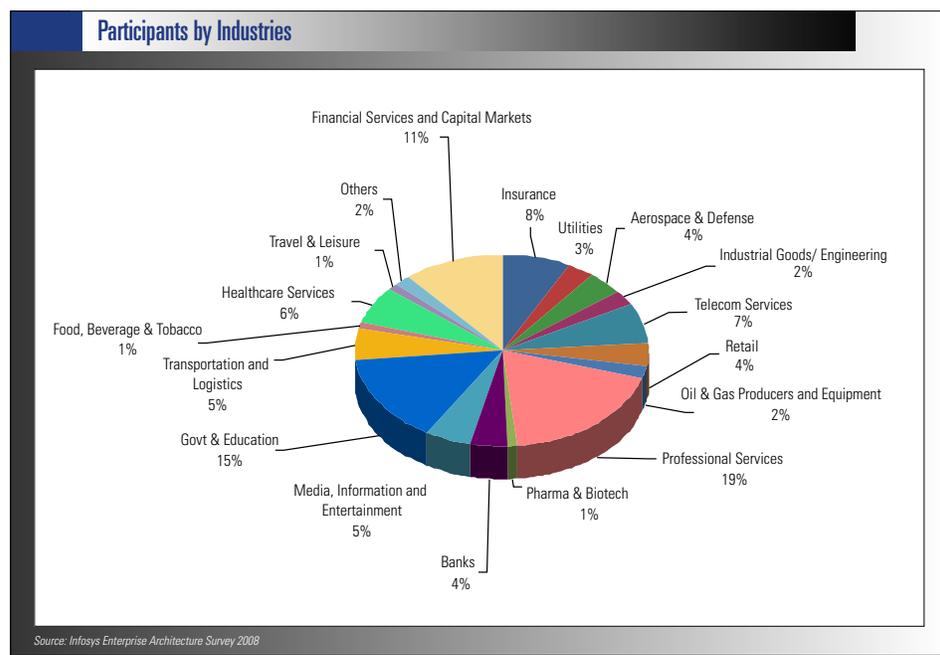


Figure 33: Distribution of participants by industry

About the Authors

Thomas Obitz is Principal Architect with the Enterprise Architecture Practice at Infosys Technologies. He has more than 16 years of experience in software development. He has vast experience in conceptualizing and designing large-scale distributed systems, especially in investment banking and capital markets. Thomas has been working with Enterprise Architecture groups, reviewing application landscapes and adopting them for improved support of corporate processes and value propositions.

Mohan Babu K is a Principal Architect with the Enterprise Architecture Practice at Infosys Technologies. He has been working in the IT industry since 1994. He is a technocrat and IT executive and has extensive experience in globalized application development, services and consulting. He is a certified PMP from the Project Management Institute (PMI) and a TOGAF certified Enterprise Architect.

The authors wish to acknowledge the significant contributions of their colleagues **Andrew Manning**, **Nicholas Hill** and **Sohel Aziz** whose help aided in the completion of this report.

Infosys Technologies Ltd. (NASDAQ: INFY) defines, designs and delivers IT-enabled business solutions that help Global 2000 companies win in a flat world. These solutions focus on providing strategic differentiation and operational superiority to clients. Infosys creates these solutions for its clients by leveraging its domain and business expertise along with a complete range of services.

With Infosys, clients are assured of a transparent business partner, world-class processes, speed of execution and the power to stretch their IT budget by leveraging the Global Delivery Model that Infosys pioneered.

Infosys[®]

POWERED BY INTELLECT
DRIVEN BY VALUES

For more information, contact askus@infosys.com

www.infosys.com

© 2009 Infosys Technologies Limited, Bangalore, India. Infosys believes the information in this publication is accurate as of its publication date; such information is subject to change without notice. Infosys acknowledges the proprietary rights of the trademarks and product names of other companies mentioned in this document.