

The 5th Annual Gartner Enterprise Architecture Summit 2010

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ARCHITECTING INNOVATION
Next-Generation EA
 Business Architecture
 Business/IT Alignment Governance

The Vanguard of Enterprise Architecture Transformation

For many organizations, traditional approaches to EA are no longer relevant. And those at the vanguard are taking entirely new approaches to harmonize business and IT. The problem isn't about architecting IT alone. It's about architecting the business within a larger business ecosystem.

At this year's **Gartner Enterprise Architecture Summit** delegates were able to participate in an enlightening series of analyst-led sessions, case studies and workshops. The aim was to allow them to acquire the tools and techniques to differentiate EA from just another IT discipline, focus on redefining the relationship between IT and business, and get their bearings on how EA is changing and where its transformation can lead them and their organization. For the better.

No other conference covers so many dimensions of EA, including the latest advances -- from hybrid thinking and pattern-based strategy to architecting the hyperconnected enterprise from the "outside in."



Summit Highlights

KEYNOTES



René Doursat Director, Complex Systems Institute Paris; Researcher, CNRS and Ecole Polytechnique, Paris

Executive Guest Keynote:

Architecture and Self-Organization: Heading for the Best of Both Worlds

1 What are Complex Systems?

- a Decentralization — The system is made up of myriads of "simple" agents (local information, local rules, local interactions).
- b Emergence — Function is a bottom-up collective effect of the agents (asynchrony, balance, combinatorial creativity).
- c Self-organization — The system operates and changes on its own (autonomy, robustness, adaptation).

2 Architects Overtaken by their Architecture — Designed systems that became suddenly complex

- a Overtaken — How things turned around from top-down "architecting as usual" (at mid-scales) and went bottom-up (at large scales). Large-scale techno-social systems exhibit spontaneous collective behavior that we don't quite understand or control yet.
- b Embrace — But they also open the door to entirely new forms of enterprise characterized by increasing decentralization, emergence, and dynamic adaptation.

- c Take over — Thus it is time to design new collaborative technologies to harness and guide this natural (and unavoidable) force of self-organization. For this, try to focus on the agents' potential for self-assembly, not the system.

3 Architecture Without Architects — Self-organized systems that look like they were designed (but were not)

Certain natural complex systems, such as biological development or insect construction, strikingly demonstrate the possibility of combining pure self-organization and elaborate architectures. They have "aligned business and IT" for millions of years without any architect telling them how to. So how can we extract and transfer their principles to human artefacts, such as EA?

4 Morphogenetic Engineering (ME) — From cells and insects to robots and networks

- a Giving agents self-identifying and self-positioning abilities — Agents possess the same set of rules but execute different subsets depending on their position = "differentiation" in cells, "stigmergy" in insects.
- b ME brings a new focus on "complex systems engineering" — Exploring the artificial design and implementation of autonomous systems capable of developing sophisticated, heterogeneous

morphologies or architectures without central planning or external lead.

- c Related emerging ICT disciplines — Amorphous/Spatial Computing (MIT), Organic Computing (DFG, Germany), Pervasive Adaptation (FET, EU), Ubiquitous Computing (PARC), Programmable Matter (CMU).
- d Emerging application domains — swarm robotics, modular/reconfigurable robotics, mobile ad hoc networks, sensor-actuator networks, synthetic biology, etc.
- 5 The New Challenge of "Meta-Design" — Or how to organize spontaneity
 - a Construe systems as self-organizing building-block games — Instead of assembling a construction yourself, shape its building blocks in a way that they self-assemble for you—and come up with new solutions.
 - b Design and program the pieces — Their potential to search, connect to, interact with each other, and react to their environment.
 - c Add evolution — By variation (mutation) of the pieces' program and selection of the emerging architecture



Nicholas Gall
Vice President Distinguished
Analyst, Gartner

Gartner Opening Keynote: Introducing Hybrid Thinking

Hybrid thinking integrates the increasingly popular business concept of design thinking with other ways of thinking in order to take on “wicked problems” in business transformation, innovation and strategy. Design thinking’s fundamental emphasis on creating meaningful, human-centered experiences provides the core for hybrid thinking, which is an emerging “discipline of disciplines.” Hybrid thinking goes beyond design thinking by integrating other forms of creative thinking to take on the most ambiguous, contradictory and complex problems.

- Enterprises require a new discipline for embracing transformation, innovation and strategy in the face of accelerating change driven by a hyperconnected business environment.
- The conventional engineering mind-set focused on algorithms, analysis and quantification is ill-suited to the ambiguous and creative process of transformation, innovation and strategy.
- Most major enterprises confront wicked problems, yet few realize the special nature of such problems.



Andy Kyte
VP & Gartner Fellow, Gartner

Gartner Closing Keynote: Applications Overhaul: Rationalize, Standardize, Consolidate and Simplify

Enterprises in every industry sector are suffering from bloated application portfolios. These portfolios have too many aging applications that will become more expensive and less agile over time as more functionality is added to them and there is more integration between them. And to compound the problem, application portfolios are increasing in size as new applications are acquired by IT and business stakeholders. IT organisations must develop more detailed awareness of their application portfolios, especially

concerning cost, utilization and risk associated with every application. They must also develop effective application governance structures so as to be able to pro-actively manage the life cycle of applications — including taking tough decisions to decommission applications.

The biggest mistake that IT organisations make when faced with bloated application portfolios is to set targets about the number of applications. This leads to a focus on getting rid of large numbers of small irrelevant applications, totally failing to address the duplication and obsolescence of the large enterprise applications. Application Overhaul programs must focus on Value delivered, and need to deal with the “elephants in the room” — the large complex applications which cost a huge amount to support and maintain.

GARTNER ENTERPRISE ARCHITECTURE SUMMIT KEY FINDINGS



Scott Bittler
Research VP, Gartner

EA Foundations:

Enterprise architecture is not just about IT anymore. A holistic EA includes business, information, technical and solutions architecture. Focus on understanding and applying the EA process, not frameworks, with emphasis on the business context to drive a business-driven approach. Properly use EA principles to guide decision-making. Understand the alternative EA approaches (traditional, federated, managed diversity, middle-out) and consciously choose the proper blend of them for your environment.

Technical Architecture:

All EA programs should be working on viewpoints of EA beyond technical architecture. However, there is also great opportunity to extend the value being realized from the technical architecture. To do so, move beyond component level domain architecture into patterns and services. Patterns are pre-designed blueprints of combined components across domains that can be instantiated quickly to drive reuse at a higher level.

Services go a step further still by enabling sharing of the same instance more broadly. Teach developers to solve problems with services first, then use patterns, and finally to design/build with domain standards.

EA Road Mapping:

Having a great future state architecture is not sufficient guidance for projects because it is not all actionable right now. Developers need to know what step to take now ... the “next state” architecture. This is delivered via EA road maps. There is no single best type of road map. Find the format that resonates best with your stakeholders. Be sure to have supporting details available behind the high-level diagram. Communicate with the road maps and show progress toward executing them. Don’t dogmatically follow a static road map though as it must evolve with changing business conditions.



Philip Allegra
Research VP, Gartner

- The concept of “business-driven architecture” is just market hype. Gartner has always defined EA as “business-driven”, not just for IT alone.

- Enterprise architects must use high-level visualizations to communicate the impact of EA to senior leadership teams.
- The process of enterprise architecture supports business unification with IT as IT organizational boundaries and functions shift away from infrastructure and operations management.



Dave Aron
VP, CIO Research, Gartner

- Enterprise architects can proactively add value to their business by looking at the structure of their business, and identifying analogies from other industries, who have innovated using information and IT, in a similar context.
- Business model analogies have the potential to produce superior levels of innovation and growth, with limited risk, since they have been proved in other industries.
- The most powerful business model analogies go beyond the surface details of products, customers, and markets to the underlying strategic posture, market structure, risks and cash flows.

Gartner Enterprise Architecture Summit Key Findings *continued*

Mark Raskino
VP & Gartner Fellow, Gartner

- **'Convergence' isn't a very useful trend:**

When deciding which major supply side technology trends are impacting your organisation, to explain and discuss in business strategy meetings — 'convergence' can be a tempting pick. However, it suggests some future point at which things are all coming together. While some technologies might be converging, at any one time there is also new proliferation going on. How many social tools are there now? How many mobile devices? Now we have e-book readers to add to smartphones, laptops and mobile phones. Don't pick out convergence alone, it's an imbalanced viewpoint. For what it's worth, Gartner tracked around 1650 technologies across its published hype cycles last year.

- **In much of Europe, economic austerity will probably make a lot of Government IT feel worse before it gets better:**

Those hoping that a new drive for efficiency in government will create demand for systemic change and new IT systems may be right in the longer term, but probably not for a couple of years. European governments cannot run fiscal deficits indefinitely because the markets won't keep lending, especially in the aftermath of the Greek crisis. Already in Spain and the UK, big and urgent cuts to expenditure have started. IT spend is likely to get caught up in this for a while. I'm thinking about the UK government ID card program as I write this. Some major government change programs will

be indefinitely postponed or cancelled, and the IT projects supporting them will suffer a similar fate. Eventually, a couple of years from now, when the financial books balance a little better, government leaders will be more interested in deeper business efficiency changes, and perhaps government workforces will be a little more ready to accept process change. Put simply, the recession induced cost cutting experience seen in business over the last 2 years, is now catching up with government. The slightly better news is that commercial industry's recent IT cost cutting experience and best practice is ready for government IT leaders to pick up and use.

- **Start 'playing' with the words *cloud business*:**

'Cloud computing' places the focus on technology infrastructure and the 'how to' of IT delivery. It's a debate within IT's control domain, the business shouldn't care how you, as architects, decide to technology service will be best provided economically and effectively. If you talk about just 'cloud' the 'computing' word remains an un-stated part of the phrase in virtual parenthesis, and your discourse will end up in the same place. Try exploring the words 'cloud business' instead (like e-business). How will cloud change business models and industry models? How will cloud change the competitive landscape? What does cloud make possible, that couldn't be done before? Think about book publishers, whose industry agenda: what to do next, how to do it, and how much they will be paid is increasingly being set by Amazon, Google and Apple. Now THAT's disruption. What will happen over the coming decade as insurance, banking and retail become more cloud based? It seems unlikely they will be unchanged.



Andy Kyte
VP & Gartner Fellow, Gartner

- The Lifetime Total Cost of Ownership of Applications is determined by how critical non-functional requirements are specified when the application is initially created. Enterprise architects must take responsibility for developing a comprehensive framework for non-functional requirements.
- Managing the bloated application portfolio demands good quality data about the costs, utilization and risk of every application in the portfolio.
- Developing effective application governance structures requires the engagement of demand side stakeholders, supply side stakeholders and enterprise architects.



Bruce Robertson
VP, Chief of Research, Gartner

- **Cloud Computing Impact on EA:**

The key message for EA practitioners about cloud computing solutions and trends is that they continue the change from thinking of EA as standardizing on products to where it is explaining how to leverage services (and perhaps provide them). This shift from the provider to the consumer view of things will profoundly alter the way EA looks at its deliverables and capabilities. EA must change the emphasis from technical architecture (designing the solution) to solution architecture and sourcing (leveraging an existing solution). Moreover, EA must push not just to create services for internal customers but for external consumers, particularly for data and business process (rather than just infrastructure or platform or even full SaaS applications).

- **EA Services Workshop:**

The EA Summit workshop on EA Services (the services EA offers to its customers) developed a starter set of EA services that included education, assurance, consulting, standards management, technology watch, road map development, pre-project (aka opportunity) review, validating investment portfolio decisions and influencing business strategy. The group then defined key deliverables, consumers and providers, and service levels with metrics for success. While some attendees already had such an EA service model, others left with developing one as a new priority. Managing delivery across these different services given existing resources (people, etc.) was agreed to be easier when a more definitive EA service model was leveraged.

- **Getting Started with EA:**

Discussions with those getting started with EA at this EA Summit often touched on getting some level of EA strategizing done (developing the business context, the common requirements vision, etc.). Any start up EA has to STOP trying to solve all the problems in the world, and get prioritized on a few things they can help with. It is best if these choices are business choices, rather than just IT ones. For example, if you can work directly with the business to lower their (much greater) costs rather than just focusing on lowering IT costs, then you have a legitimate business driven starting point for EA activity. You don't have to start with technical architecture at all.

Gartner Enterprise Architecture Summit Key Findings *continued*

Nicholas Gall
Vice President Distinguished
Analyst, Gartner

- Embrace hybrid thinking to create successful outcomes to wicked problems by co-creating more meaningful, human-centered experiences.
- Seek hybrid thinkers who exhibit passionate thinking: creative, empathetic, integrative, optimistic, experimental, collaborative and comfortable with ambiguity.
- Recognize that successful outcomes must be meaningful to the people using them or working with them; otherwise, people will shirk their involvement with the outcome by delaying, minimizing or delegating it.



David Newman
Research VP, Gartner

- **Overcoming Information Silos — A Key Barrier to Effective Enterprise Change:**

Many organizations fail to realize their future vision due to a lack of information shareability. For the enterprise architect, overcoming information silos is a complex mix of cultural, organizational, procedural and technical challenges that must be addressed to enable effective enterprise change. At the 2010 EA Summit, practitioners were shown Gartner's framework for unifying information sharing principles, designs, models, processes and systems. Through information sharing environments (ISEs), organizations achieve a "network effect" for information sharing, that is, the value of their information increases the more it is willingly and easily shared. Gartner's six models for establishing an ISE is a unifying method to bridge different information disciplines across the enterprise. The first of the four models focus on designing enterprise information, the purview of the enterprise information architecture (EIA) process. The next two models focus on managing enterprise information — the domain of an enterprise information management (EIM) program.



- **How Hyperconnected Enterprises Apply Hybrid Thinking to Wicked Problem of Information Shareability:**

In today's network-centric world, organizations morph into "hyperconnected" businesses that use the web to identify new business opportunities, create new partnerships and apply different methods of interaction to bind with their customers. Yet, the hyperconnected age can also give rise to many wicked problems. One example is the paradox of information shareability. On the plus side, increasing information sharing across ecosystems supports co-creative outcomes through new, collaborative relationships. New sources of content can uncover new discoveries and spur new innovations. At the same time, widespread information sharing outside your firewall has downsides as well. Information overload, lack of context, lack of security and lack of trust can add risk and uncertainty. Delegates discovered how hybrid thinking can be applied to the wicked problem of information shareability. Through examples, attendees learned how to apply hybrid thinking by combining the techniques and practices of design thinkers with the principles and processes of enterprise architects to when taking on wicked problems, such as information shareability. Eight hybrid thinking principles were outlined that will enable enterprise architects to support transformative, innovative and strategic change across a hyperconnected business environment.

- **Roundtables on EIA and EIM:**

Two separate user roundtables, facilitated by a Gartner analyst, gave delegates opportunities to share best practices and key concerns about enterprise information architecture (EIA) and enterprise information management (EIM). Both groups determined that the phrase "enterprise information" (the information that matters most to the business) is an important scoping mechanism to guide information architecture, information design and information management efforts. During the EIA roundtable, the discussion centered on various principles, models, and requirements that architects develop to ensure enterprise information supports corporate goals for improving efficiency, differentiation and innovation. Attendees also shared the different roles associated with the EIA process and discussed the delicate balance between architecture and implementation work. During the EIM session, delegates discussed how best to overcome the technical and cultural barriers caused by proliferation of independent information management efforts. The groups recognized their goals were similarly focused on improving information shareability across the enterprise. Both groups also decided that information shareability is driven by a number of qualities. Of these, three stood out as the most important: consistency (which includes master data management and business intelligence), usability (implemented through metadata management), and extensibility (the purview of service-oriented architecture).

HAVE A SUCCESSFUL YEAR!

The **Gartner Enterprise Architecture Summit 2011** will be held on **9 – 10 May 2011** at the **Park Plaza Westminster** in London.

We hope to see you again!

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