CIOs Guide to Strategic Architecture

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The Internet of Things

- Platforms
- Smart Products
- Home IoT
- Operations Technology
- Wearables
- Smart Energy
- ‘Makers’
- Consumers
- Connected Car
- Smart Factories
- ‘Edge’
- Enterprise
- Information Technology
- Connected Health
- Smart Utilities
- ‘Users’
- Smart Analytics
- Intelligent Gateways
- Smart Transportation

The Internet Of Things
IoT Connected Device Forecast

By 2025, 1522 billion connected IoT devices per minute.
IoT Data Sources

- Classically Created
- IoT Relevant
- IoT Actionable

Growth From 2020 - 2025

ZBytes


- 1.3 X
- 3.8 X
- 8.6 X

1.3 X
3.8 X
8.6 X
Next Generation Apps – Sense, Compute, Act

Source: IDC Feb 2016 analysis of CB Insights database; IDC industry/function categorization of results of search for companies with keywords “Machine Learning” and/or “AI”
Omni-Experience Journey Example
What a Mess
What Does the Cloud Mean?

Virtualization
Hybrid
IaaS
SaaS …

Finally! I don’t need IT anymore. I can get everything myself in the cloud

to IT…
to Business…
Sustainable DX Requires Strategic Architecture

“By 2017, 60% of business lead digital transformation initiatives will not be able to scale due to a lack of strategic architecture”

<table>
<thead>
<tr>
<th>Drivers</th>
<th>Challenges</th>
<th>Benefits</th>
</tr>
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<tbody>
<tr>
<td>IT spending shift to LOB</td>
<td>Tactical imperatives versus strategic concerns</td>
<td>Improved customer experience</td>
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<tr>
<td>Independent sourcing actions increase costs and complexity</td>
<td>Culture</td>
<td>Maximum value and synergy</td>
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<tr>
<td>Need for agility and quickness</td>
<td>LoBs want to maintain local control</td>
<td>Speed and flexibility</td>
</tr>
<tr>
<td></td>
<td>Inconsistency and redundancies</td>
<td>Positioned for continual change</td>
</tr>
</tbody>
</table>
Most IT Organizations Expect to Act as Service Brokers

Most organizations expect to act as IT service brokers to retain control over workload placement while diversifying their choice of cloud providers.

By 2017, 35% of vendor sourcing relationships around 3rd platform technologies will fail.

Integration Architecture

Security
- Identity Management
- Single sign on
- Incident Management
- Event Correlation

Reporting
- Auditing
- Logging
- Compliance
- SLA

Information
- Data Model
- MDM
- Transformation
- Copies

Integration
- APIs
- Legacy and Core
- Other SaaS

Continuity
- Help Desk
- Backup
- BCP
- DR
- Them / Us
# Sample SaaS Planning Matrix

**True cost to acquire and own:** How does a specific cloud service fit into the enterprise environment?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Requirements (Describe how to meet them)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operations</strong></td>
<td></td>
</tr>
<tr>
<td>Incident Management</td>
<td><em>How are incidents reported, managed? What can I see?</em></td>
</tr>
<tr>
<td>Change Management</td>
<td><em>How are changes planned, tested, integrated, managed?</em></td>
</tr>
<tr>
<td>Monitoring</td>
<td><em>Security monitoring, operational monitoring</em></td>
</tr>
<tr>
<td>Auditing</td>
<td><em>Who did what, to what, when?</em></td>
</tr>
<tr>
<td>Logging</td>
<td><em>What will be logged, where? How is it accessed?</em></td>
</tr>
<tr>
<td>Compliance</td>
<td><em>What regulations apply? How verified?</em></td>
</tr>
<tr>
<td>DR / BCP</td>
<td><em>What are requirements? How performed?</em></td>
</tr>
<tr>
<td><strong>Architecture</strong></td>
<td></td>
</tr>
<tr>
<td>Integration</td>
<td><em>What other systems need to be connected to?</em></td>
</tr>
<tr>
<td>Security</td>
<td><em>How will service be integrated into enterprise security, SSO?</em></td>
</tr>
<tr>
<td>Information Semantics</td>
<td><em>What information does this have? Need? Schema?</em></td>
</tr>
<tr>
<td><strong>Finance</strong></td>
<td></td>
</tr>
<tr>
<td>SLA Monitoring</td>
<td><em>Are SLAs being met? How do we know?</em></td>
</tr>
<tr>
<td>Sourcing</td>
<td><em>Single point of contact for all users and services?</em></td>
</tr>
</tbody>
</table>
What is the single most important role your IT organization could play in your organization’s digital transformation?

- **Innovation**
  - Help us identify which parts of the business could be digitally transformed through the use of technology
  - 32%

- **Technology**
  - Identify emerging technologies that could accelerate our digital transformation
  - 25%

- **Project Management**
  - Manage our digital project implementations
  - 24%

Source: IDC, 2015
IDC Line of Business Sentiment Study, n=300 LOB executives.
EA Principles

- Address the entire enterprise
- Create consistency
- Control complexity
- Provide agility and flexibility
- Accommodate the future
- Communicate and specify
Fragile and Inflexible Architecture
Lack of EA results in fragile and inflexible IT systems that cannot incorporate 3rd Platform technology. Inconsistent processes and data create unnecessary costs and complexity.

Business Outcome
"Quick and dirty"
Wasted time, money, and opportunity.

Standardized Architecture
EA supports standardized platforms that enable better results for some LOB and utilizes 3rd Platform solutions. Integration issues limit end-to-end processes and 360-degree views.

Business Outcome
"Make it better"
Projects benefit from lower costs, faster time-to-market.

Enterprise Wide Architecture
EA supports enterprise-wide interoperability, improved decision making, and portfolio management. It provides timely business response based on data analysis and system flexibility. 3rd Platform solutions drive business initiatives.

Business Outcome
"Make it consistent"
Acquisition and retention of business end customer through operational excellence.

Enterprise Agility
EA supports outstanding strategy-to-execution, portfolio, and information management. Strategic deployment of transformative 3rd Platform solutions yields ongoing enterprise market leadership.

Business Outcome
"Make it differentiated"
Business has sustained competitive and game-changer advantage

Business silos
Architected business
EA Challenges

- Nobody knows what it is
- Unclear roles and responsibility
  - FUD
- Misguided EA programs
- Framework and repository traps
- Past failures and skepticism
Strategic Architecture Framework V3

Strategic DX Initiatives
- Experiential Engagement
- Information Monetization
- Digital Business at Scale

Stakeholders
- Strategy
- Finance
- Risk
- Portfolio Mgmt
- PMO
- Procurement
- App Dev
- Operations
- Dev/Ops
- LOB
- CX/UX
- Marketing

Business
- Support decisions
- Strategies, Operating Model, Outcomes

Information
- Manage Information
- Provide capabilities
- Provide infrastructure

Application

Infrastructure

Performance
- Protect assets
- Ensure outcomes

Security

Service
- Manage Services

Integration
- Provide Consistency

Enablement, Architecture Program and Team, Organization, Governance
5 S’s of Strategic Architecture Transformation

• **Scope** - Expand the scope of architectures domains to include security, performance, integration, service

• **Stakeholders** - Accommodate new stakeholders with new engagement models and deliverables

• **Scale** - Prepare for massive new scale in data, devices, communications, users, threats

• **Security** - Make security a fundamental aspect of everything, from the beginning

• **Speed** - Prioritize flexibility and speed as a primary design factor for architecture
Architecture: What do you think?
Delivering Value

- In many ways, architects have been their own worst enemy.
- Traditional architecture programs focus on creating architecture. Then, they depend on process and command & control to govern implementation.

“Creating architecture does not create value. Value is only realized when architecture is used to influence decisions.”
Success Formula

The formula for a successful Architecture is simple:

- **When you make it easier/more valuable for people to do their job by using architecture, they will;**
- **If you make it harder for them, they will fight you.**

**Architecture Checklist:**
- What are the goals?
- What decisions do you need to influence to achieve them?
- Who makes those decisions?
- What processes do they use to make them?
- Where are the opportunities within those processes to influence the decisions?
- What structure of artifact would be useful
  - At that point in the process
  - For that individual
  - From their perspective, tools, and skill set?
  - ...And consistent with architectural principles and best practices!
- How do we make one? How do we engage them to help?
- How will we measure if it is working?
Architecture Value Proposition

Enterprise Scope  Consistency  Clarity  Cost + Complexity  Risk Mitigation

Value Proposition

Strategic Architecture

IT Strategy, Innovation  Portfolio Management  Sourcing  Infrastructure and Services  Strategy to Execution

Business and IT Digital Transformation
CIO Imperative #0
Transform Your Architecture into a Influencing Tool

• **Scope** - Expand the scope of architectures domains
  • Security, performance, integration, service .... but focus efforts toward goals

• **Stakeholders** - Accommodate new stakeholders with new engagement models and deliverables
  • Marketing, UX, LOB, Risk...

• **Scale** - Prepare for massive new scale
  • Data, devices, communications, users, threats...

• **Security** - Make security a fundamental aspect of everything, from the beginning

• **Speed** - Prioritize flexibility and speed as a primary design factor for architecture

For architecture to remain relevant, it must deliver value at the speed of business
CIO Imperative #1
Articulate the Architecture Value Proposition

- Make sure you are able to answer these four questions:
  - Why are you doing architecture?
  - What are you expecting to achieve?
  - Who is sponsoring the architecture effort?
  - What will they, and you, consider as success?
- Align architecture with YOUR goals
- Tie architecture to Digital Transformation
  - Experiential Engagement requires consistency, interoperability and integration
  - Speed of competition requires robust service catalog
  - Focus on Return-on-Assets

When EA is aligned to your organization, it focuses value where it will have the biggest impact:
*Achieving goals, reducing costs, increasing return*
CIO Imperative #2
Leverage EA to Improve IT Strategy

- A good IT strategy is like EA:
  - Scope encompasses the entire enterprise
  - The context is internal and external business, environmental, and technical drivers
  - Accounts for relationships and interdependencies
  - Factors the current state and future state into a prioritized roadmap

- Use your architect’s skills to make sure these characterize your IT strategy

- Unlike most strategies, EA must be both conceptual to communicate, AND specific enough to implement.

- A major failure of strategy execution is due to ambiguous, inconsistent strategy articulation.

- Use architecture to formally / unambiguously specify strategy.

EA enables better, more actionable IT Strategy
CIO Imperative #3
Enhance Portfolio Management

- Use architecture to provide specific and objective evaluation criteria:
  - Alignment to strategy, technology, information, and other factors.

- Target architecture deliverables to support the PM process:
  - Roadmaps, target architectures, specifications, etc.

- Architecturally defined IT strategy can do double duty as objective criteria for evaluating strategic alignment.

- Apply architectural / enterprise scope to portfolio management:
  - Visibility and insight into inconsistencies, redundancies, and gaps.

- The biggest impact is likely to be obtained in project portfolio management:
  - Cost avoidance can begin early
  - Opportunities for improved ROA can be identified up front.

EA provides objectivity and scope to portfolio management
Take Away

- Enterprise Architecture is a valuable tool in enabling CIO success:
  - Better strategy and execution
  - Better clarity
  - Better decisions
  - Enable digital transformation through flexible service catalog
  - Increased consistency, reduced complexity
  - Increased ROA, reduced risks

- It’s not your father’s architecture any more
Final Thoughts
Establish the ‘Big Picture’ which sets the goals, constraints and context

In 1939, Franklin Roosevelt called the head of the highway program in his office and drew a few lines on a map that indicated where a set of national “superhighways” should go.
Incremental Implementation

- Develop a road map
- Start small, learn and refine
- Incorporate changes and expand
- Constantly deliver value

- In 1954, Dwight Eisenhower signed into law the largest construction program of all time, the U.S. Interstate Highway Program
- We’re still building it…
THANK YOU!

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