Enterprise Architecture as Strategy

Chief Architects Forum
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CISR Research Portfolio 2002–2006

Managing the IT Resource

- Effective IT Oversight
- The Future of the IT Organization
- IT Governance in Top Performing Firms
- Enterprise Architecture as Strategy
- IT Portfolio Investment Benchmarks & Links to Firm Performance
- Reducing IT-Related Risk

IT and Business Strategy

- An IT Manifesto for Business Agility
- Business Models and IT Investment and Capabilities
- IT-Enabling Business Innovation and Transformation

Managing Across Boundaries

- Effective Governance of Outsourcing
- IT Engagement Models and Business Performance

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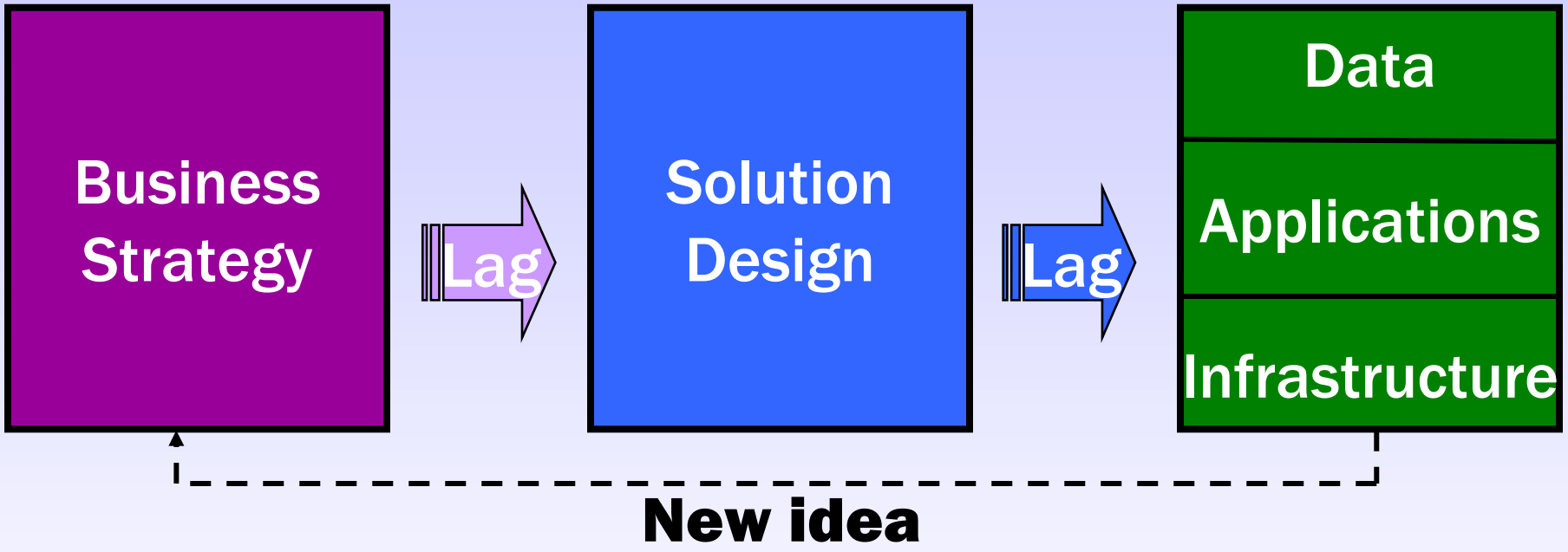
Agenda

- **Why Architecture Matters**
- **Envisioning a Foundation for Execution**
- **The Operating Model as Business Vision**
  - Declaring requirements for integration and standardization
  - Identifying “the essence of the business”
- **The Enterprise Architecture Journey**
  - IT investment patterns and capabilities
  - Strategic implications of IT
  - Organizational learning about IT
- **Critical Management Practices**
- **Key Lessons on Enterprise Architecture**

The IT-Business Alignment Problem

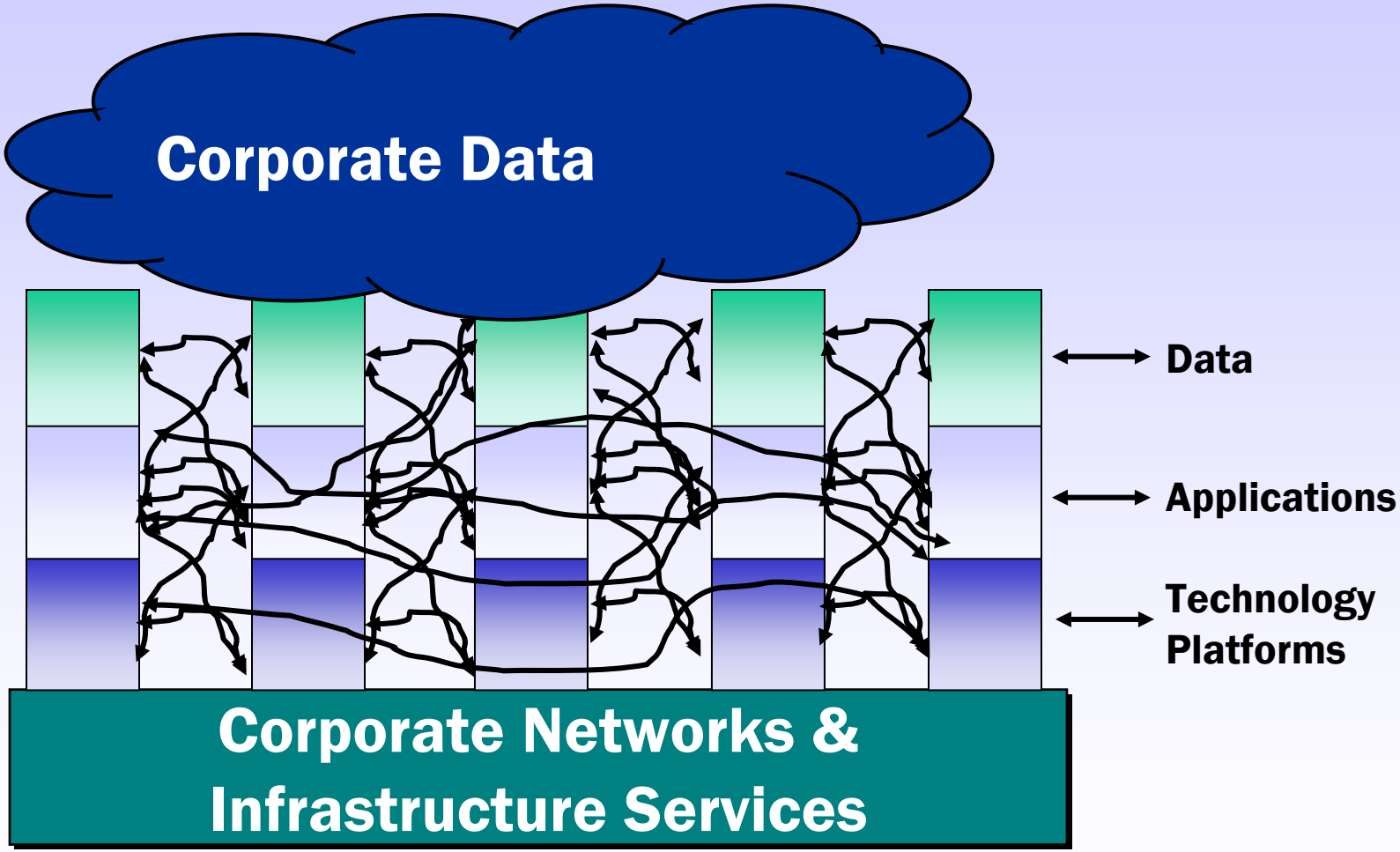


So we started working on understanding the business strategy, and what we discovered in that process is, they really didn't have a business strategy. What they had were a lot of promises. We are going to grow. We are going to use branding. We are going to run our plants more effectively. We are going to increase our volume, but they hadn't figured out exactly how they were going to do it. And what I said was: it is very difficult for me to write an IT strategy to support your business strategy when you don't have that defined.

—IT Architect, Global Manufacturing Firm

Source: *Architecture as Strategy: Creating a Foundation for Business Execution*, J. Ross, P. Weill, D. Robertson, HBS Press, June 2006.

The Result of Traditional Approaches to IT-Business Alignment



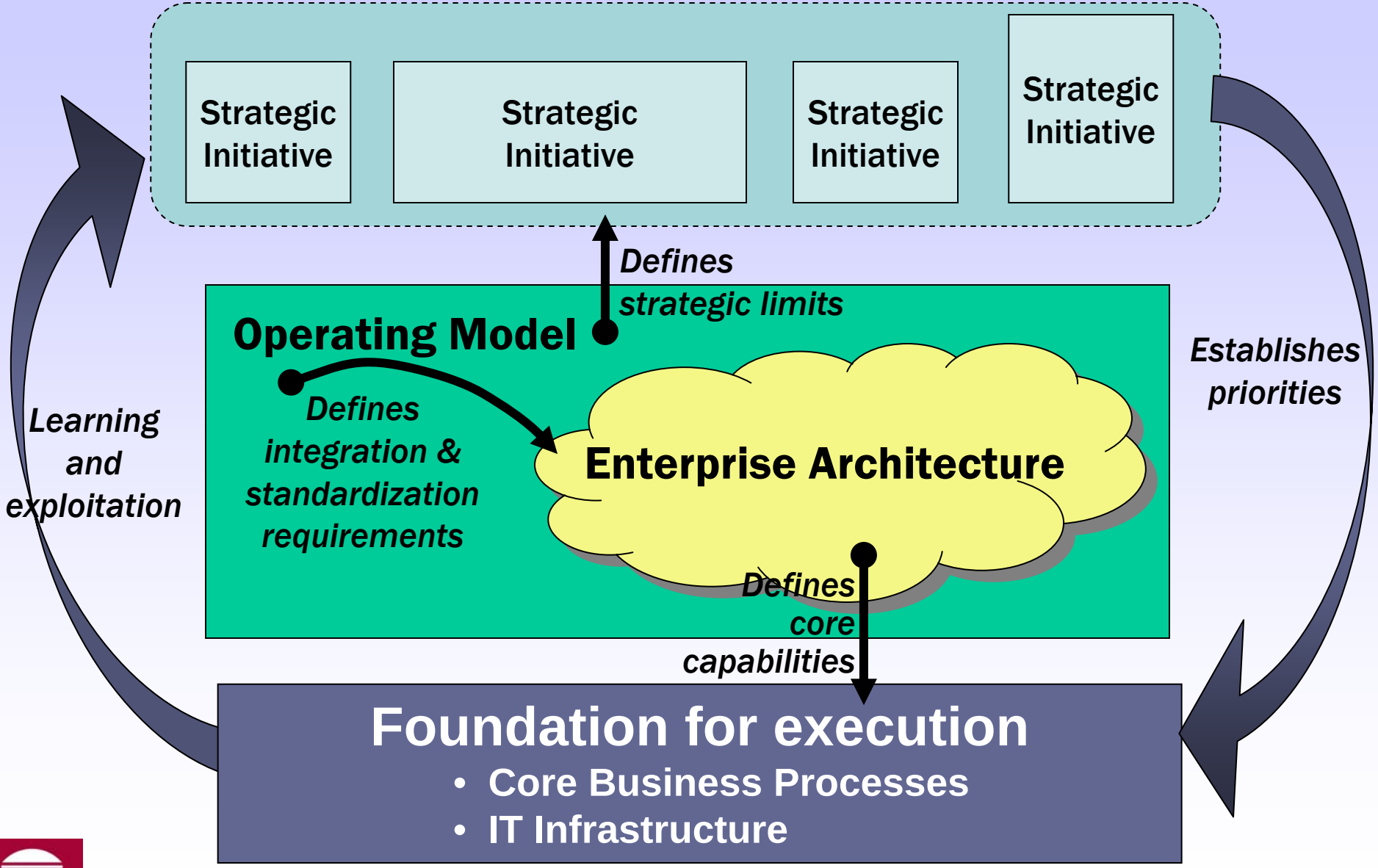
Source: *Architecture as Strategy: Creating a Foundation for Business Execution*, J. Ross, P. Weill, D. Robertson, HBS Press, June 2006.

Two Key Concepts

- **Operating Model:** *The desired level of business process integration and business process standardization for delivering goods and services to customers.*

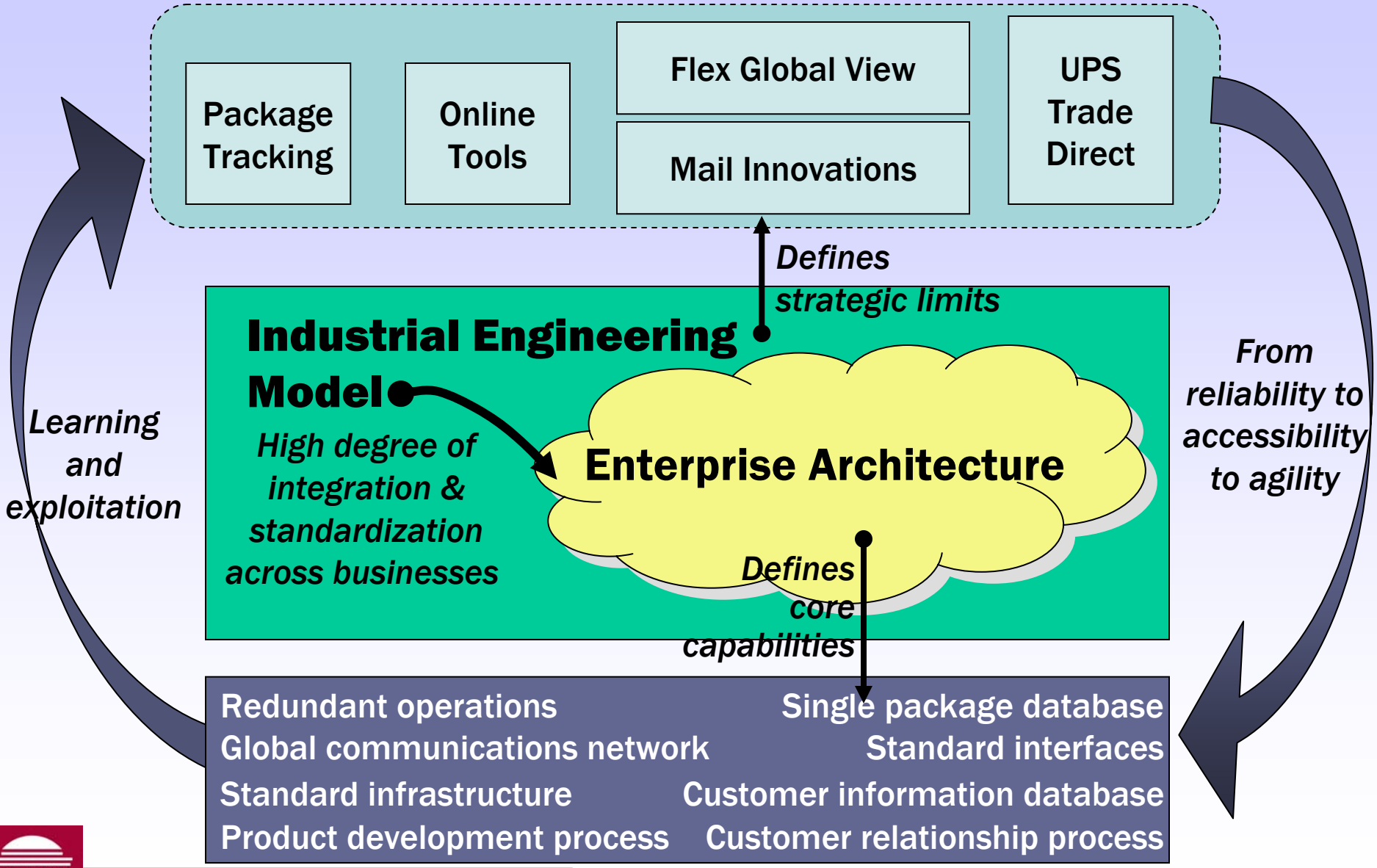
- **Enterprise Architecture:** *The organizing logic for business process and IT infrastructure capabilities reflecting the integration and standardization requirements of the firm's operating model.*

Designing a Foundation for Execution



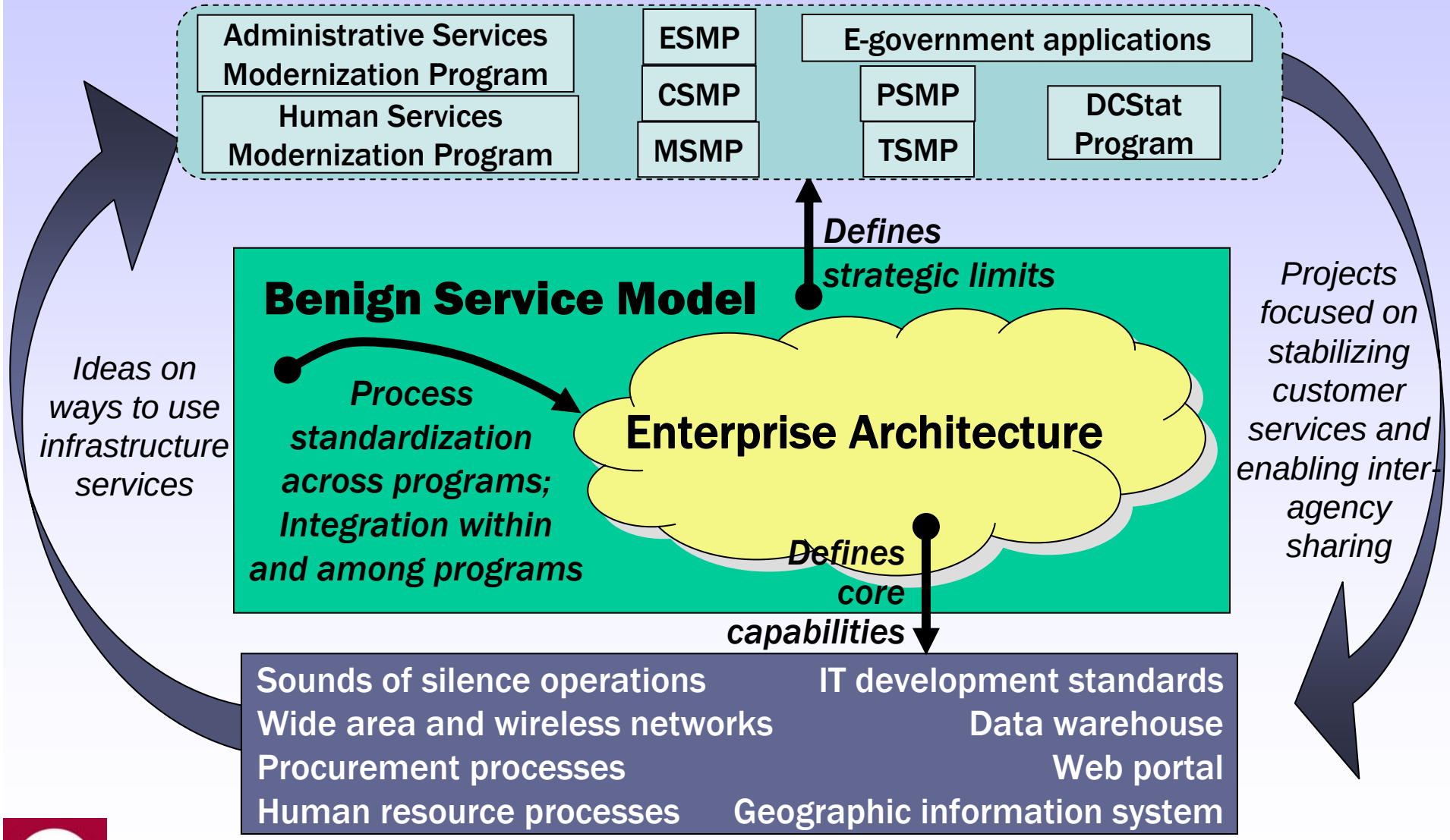
Source: *Architecture as Strategy: Creating a Foundation for Business Execution*, J. Ross, P. Weill, D. Robertson, HBS Press, June 2006.

The Foundation for Execution at UPS



Source: *Architecture as Strategy: Creating a Foundation for Business Execution*, J. Ross, P. Weill, D. Robertson, HBS Press, June 2006.

Washington, D.C.'s Foundation for Execution



Source: *Architecture as Strategy: Creating a Foundation for Business Execution*, J. Ross, P. Weill, D. Robertson, HBS Press, June 2006.

Four Operating Models

Business Process Integration	Low	High
High	***Coordination*** ■ Unique business units with a need to know each other's transactions ■ Examples: Scotland Yard, Toyota Motor Marketing Europe, MetLife ■ Key IT capability: access to shared data, through standard technology interfaces	***Unification*** ■ Single business with global process standards and global data access ■ Examples: Delta Air Lines, Dow Chemical, Washington, DC Government ■ Key IT capability: enterprise systems reinforcing standard processes and providing global data access
Low	***Diversification*** ■ Independent business units with different customers and expertise ■ Examples: Johnson & Johnson, Carlson Companies, GE ■ Key IT capability: provide economies of scale without limiting independence	***Replication*** ■ Independent but similar business units ■ Examples: Marriott, CEMEX, ING DIRECT, UNICEF ■ Key IT capability: provide standard infrastructure and application components for global efficiencies

Business Process Standardization

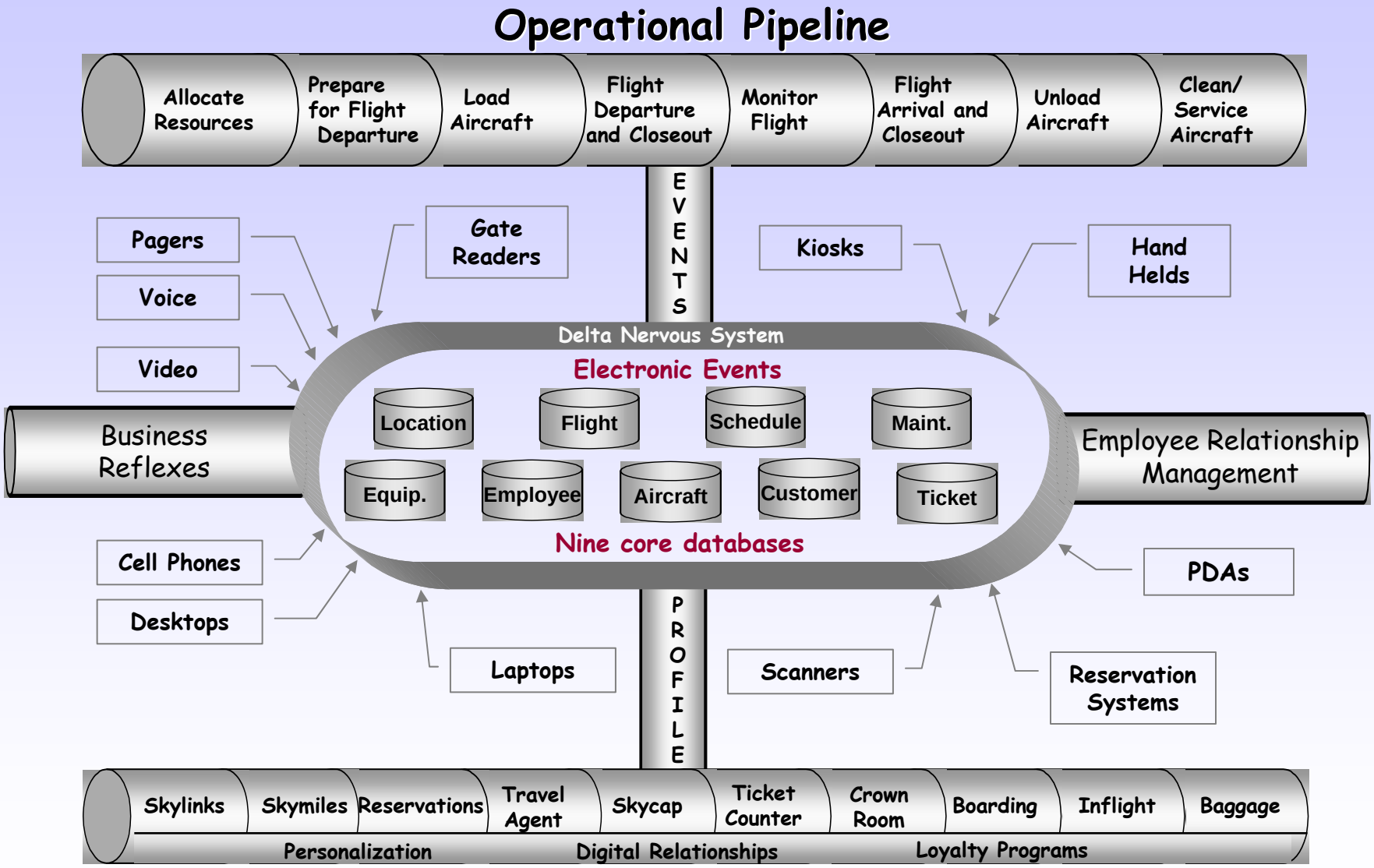
Source: *Enterprise Architecture as Strategy: Creating a Foundation for Business Execution,* J. Ross, P. Weill, and D. Robertson, Harvard Business School Press, June 2006.

Focus of Standardization Differs by Operating Model

Business Process Integration	Business Process Standardization: Low	Business Process Standardization: High
High	**Coordination** Customer and Product Data, Technology (Shared Services)	**Unification** Technology, Customer and Product Data, Shared Services, Operations, Customer Service, Logistics (R&D, Marketing/Sales)
Low	**Diversification** Technology (Shared Services)	**Replication** Technology, Operations, Customer Services, Logistics, R&D, Marketing/Sales, Shared Services

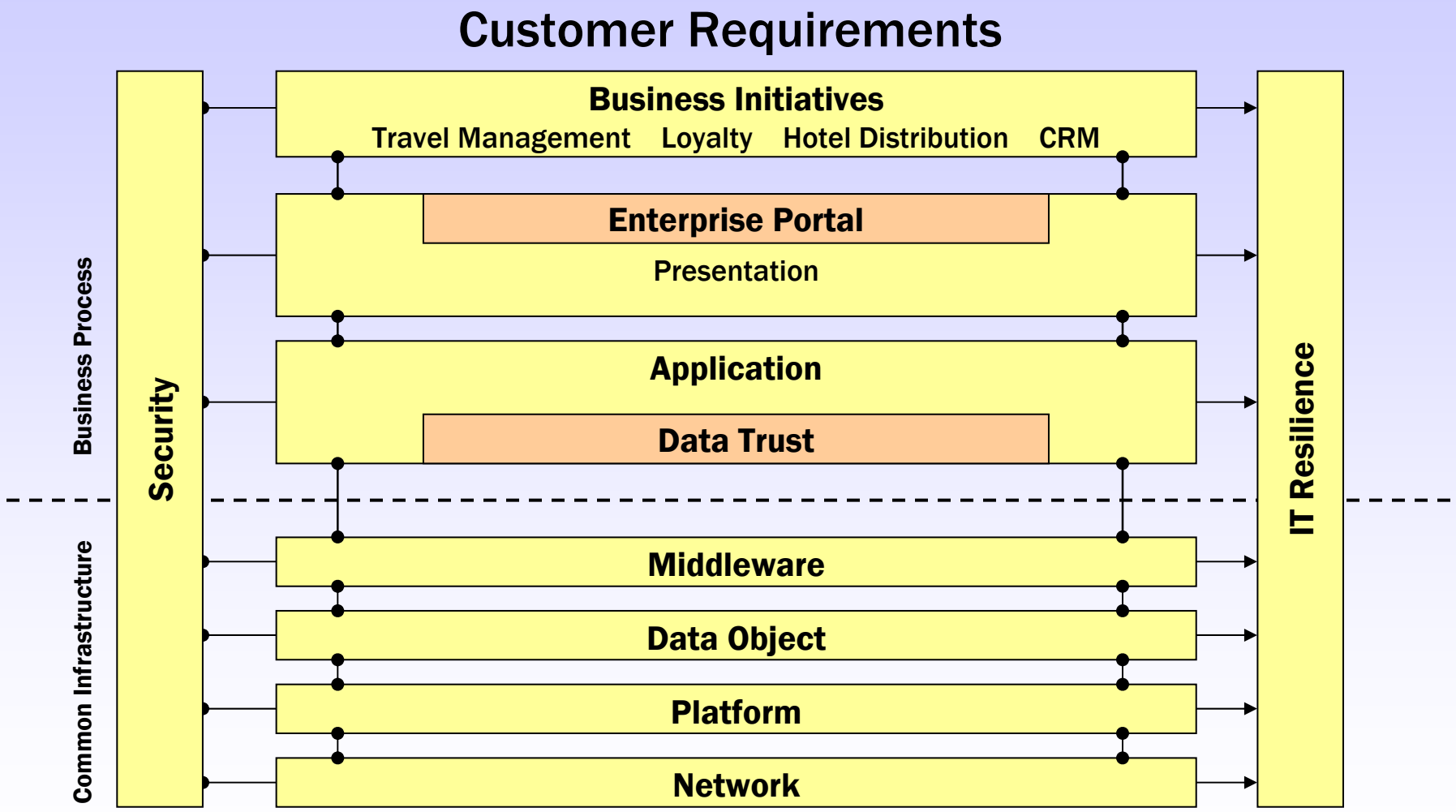
Source: *Enterprise Architecture as Strategy: Creating a Foundation for Business Execution,* J. Ross, P. Weill, and D. Robertson, Harvard Business School Press, June 2006.

Delta Air Lines' Enterprise Architecture



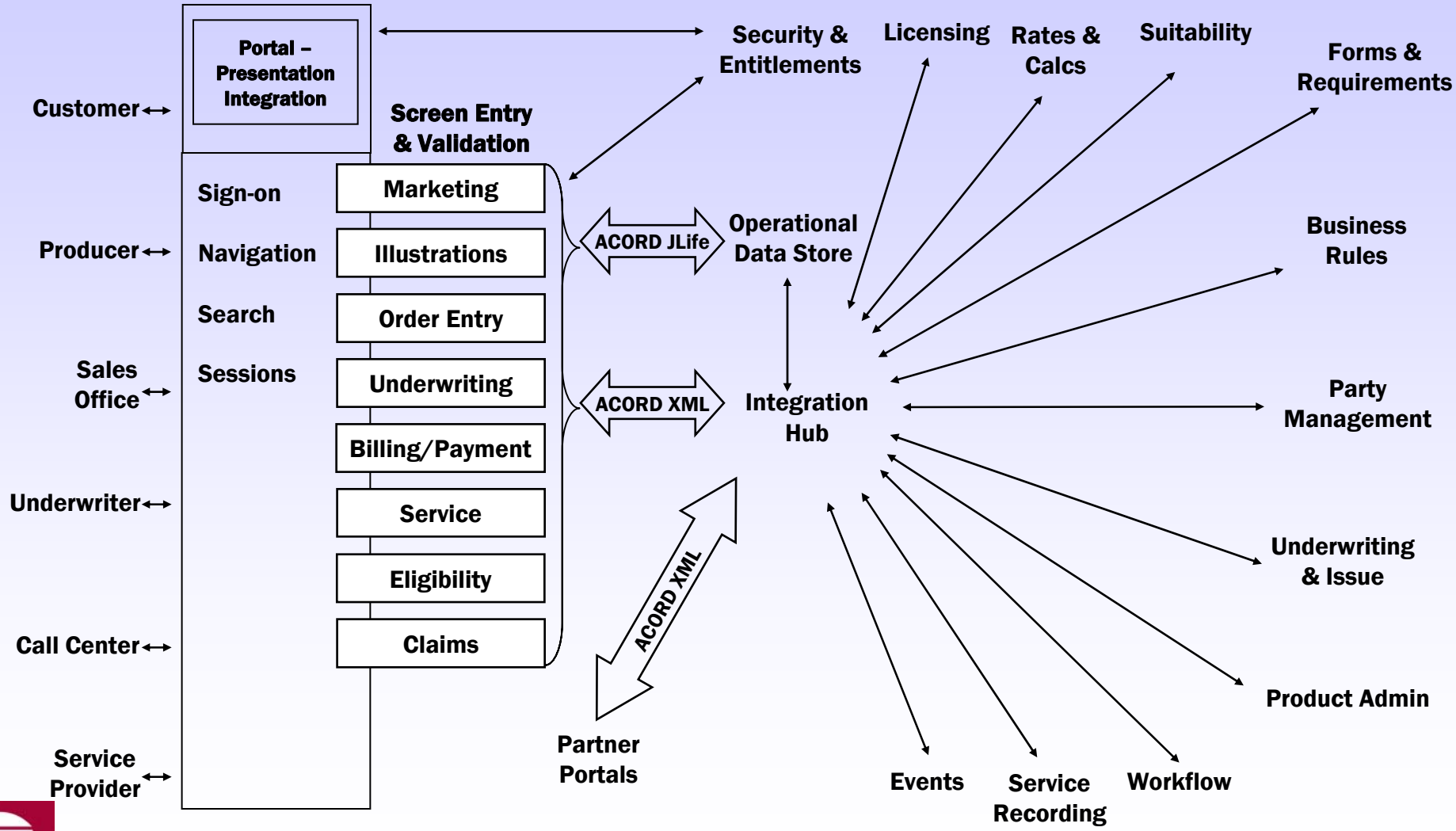
Source: Adapted from Delta Air Lines documents – used with permission.

Enterprise Architecture for Carlson's Diversification Operating Model



Source: Carlson Company

Enterprise Architecture for MetLife's Coordination Model



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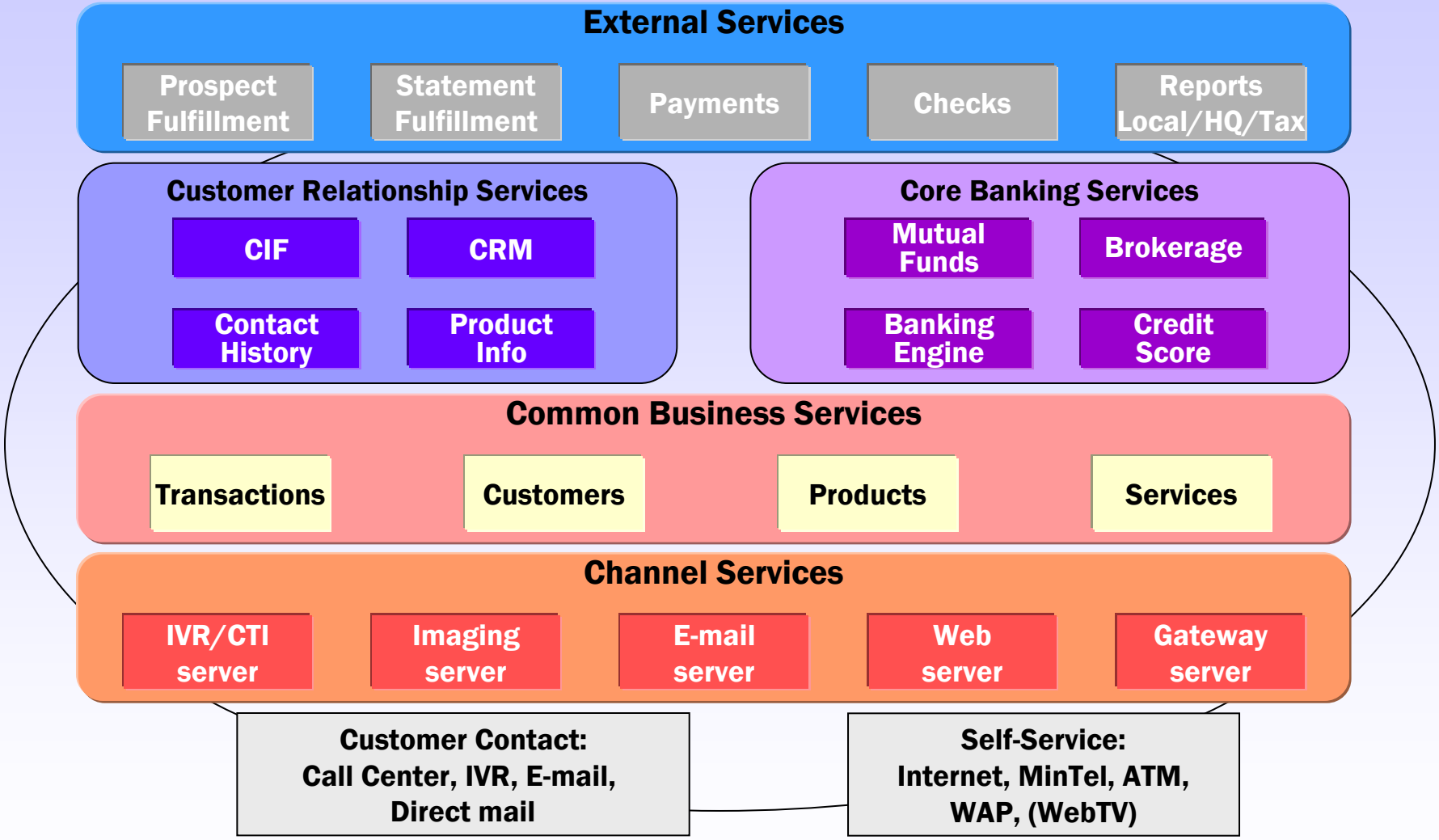
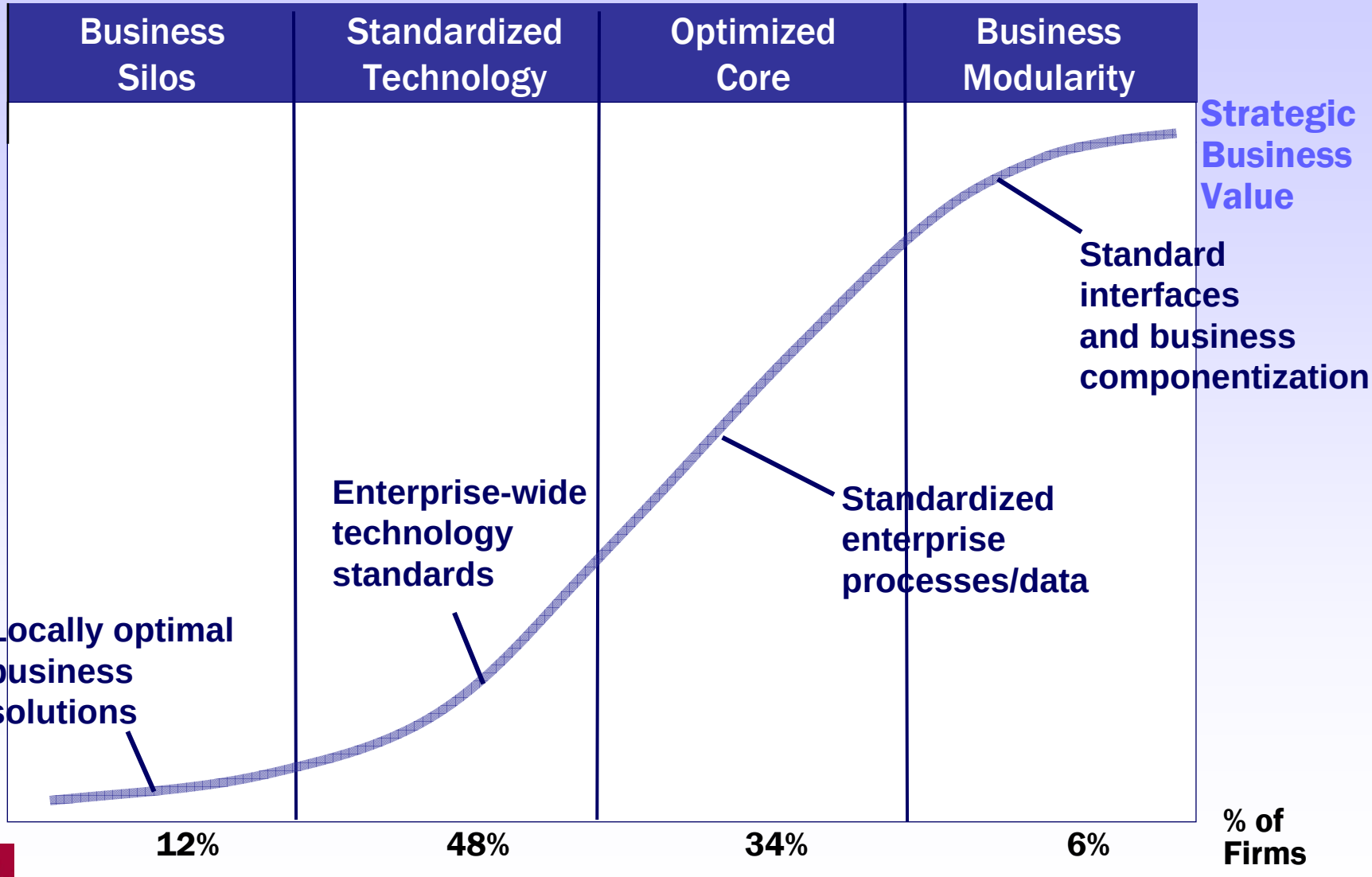
Source: Adapted from MetLife documents – used with permission.

Enterprise Architecture for ING DIRECT's Replication Model



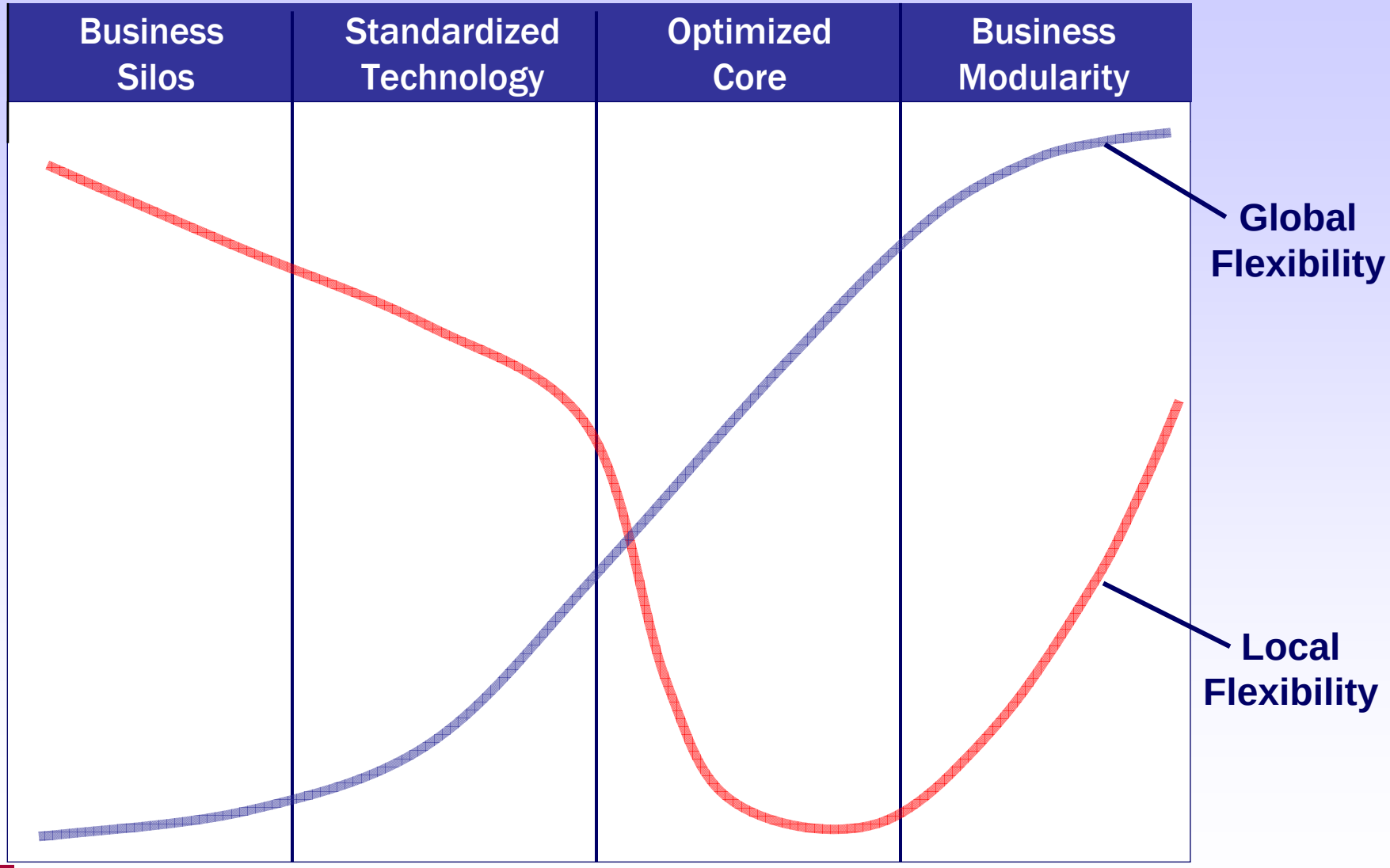
Source: Robertson, D. "ING DIRECT: The IT Challenge (B)", 2003, IMD-3-1345. Used with permission.

Architecture Maturity Stages Yield Increasing Value from IT



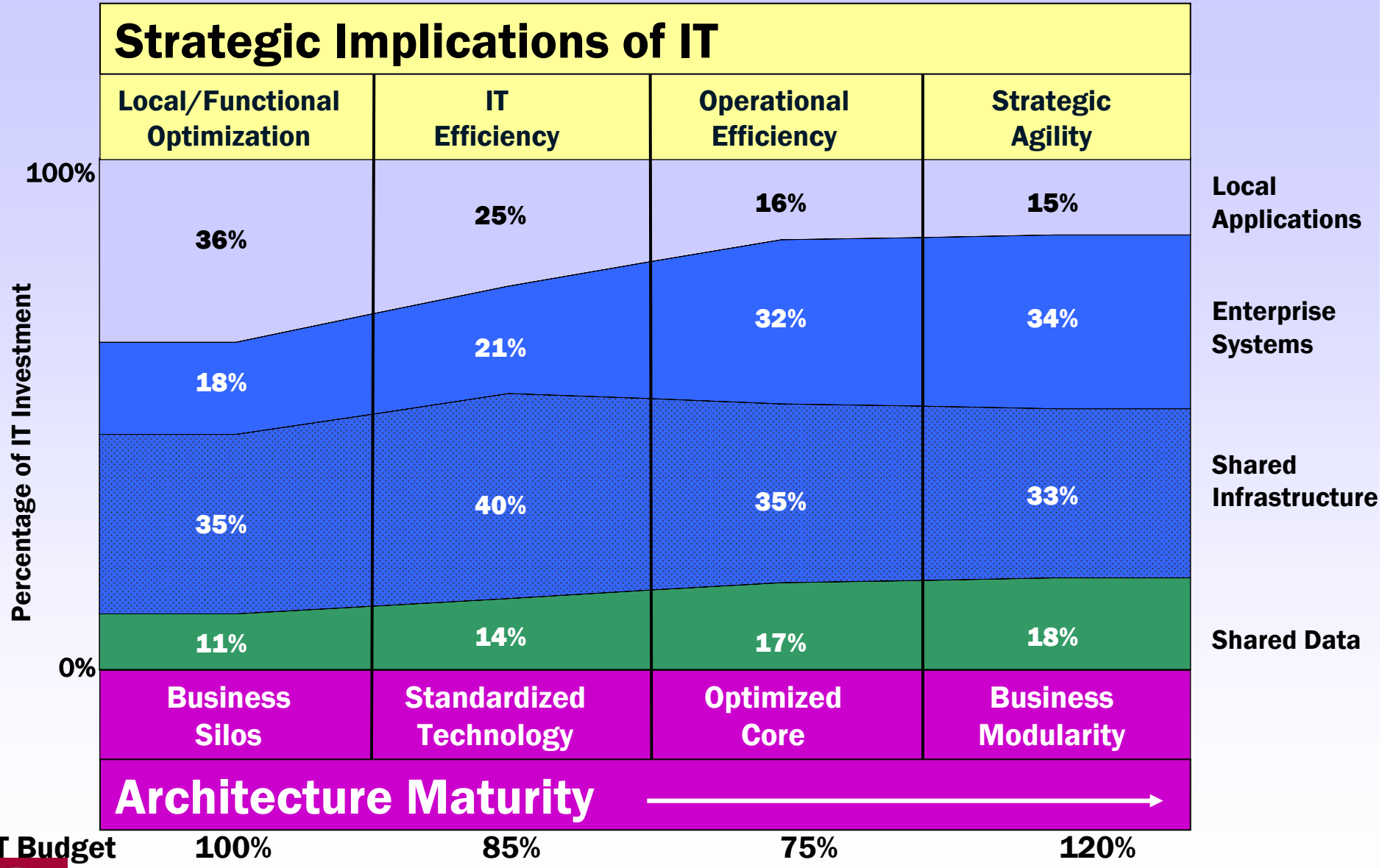
Source: *Enterprise Architecture as Strategy: Creating a Foundation for Business Execution*, J. Ross, P. Weill, D. Robertson, HBS Press, June 2006.

Architecture Maturity Shifts Flexibility



Source: *Enterprise Architecture as Strategy: Creating a Foundation for Business Execution*, J. Ross, P. Weill, D. Robertson, HBS Press, June 2006.

Implications of Architecture Maturity Stages



IT budgets from 103 firms are corrected for industry differences with Business silos as the baseline Only five firms in stage four reported their IT budgets so data is not reliable.

Source: *Architecture as Strategy: Creating a Foundation for Business Execution*, J. Ross, P. Weill, D. Robertson, HBS Press, June 2006.

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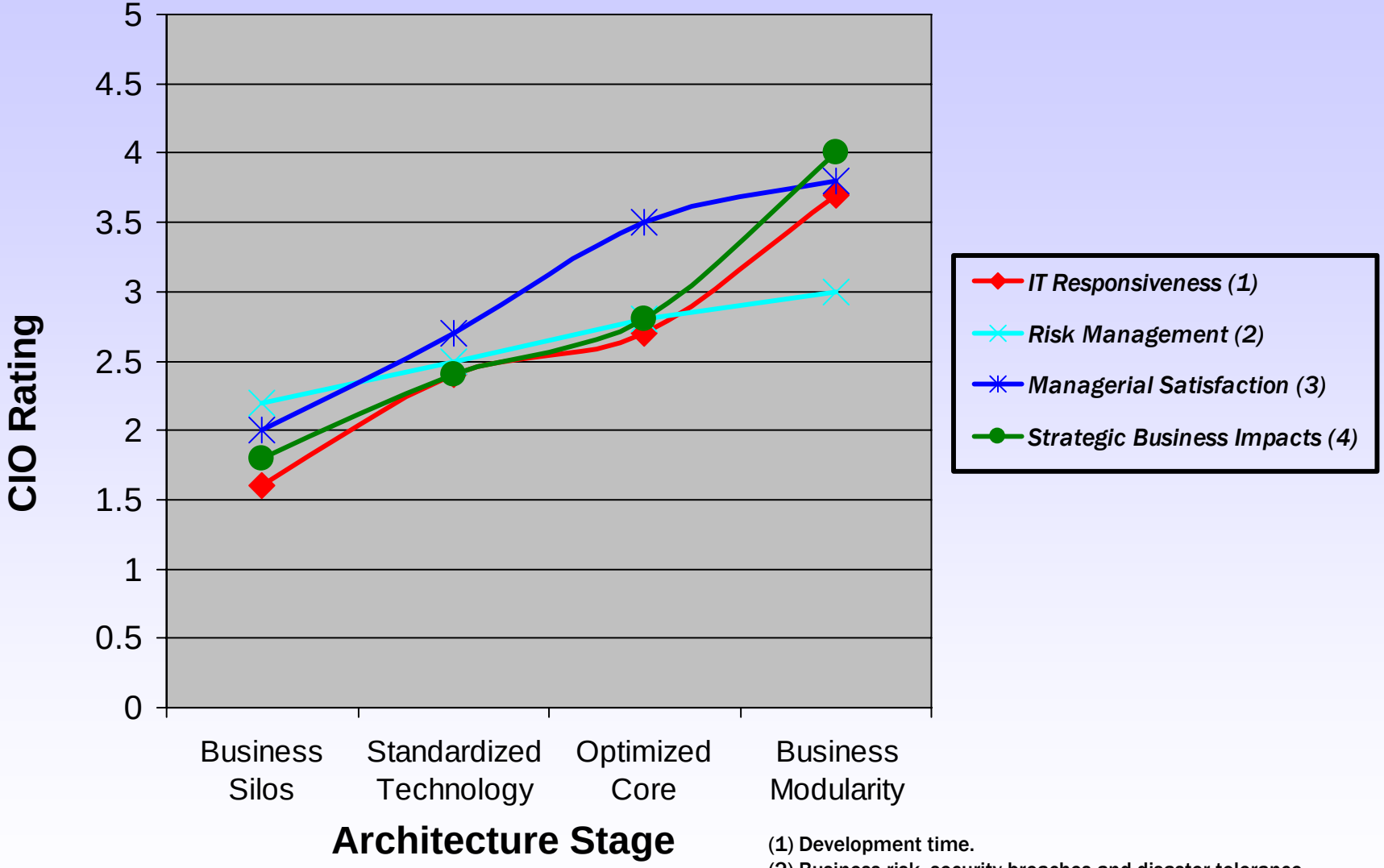
Enterprise Architecture Benefits by Stages



(1) Development time.
(2) Business risk, security breaches and disaster tolerance.
(3) Senior management and business unit management satisfaction.
(4) Operational excellence, customer intimacy, product leadership and strategic agility.

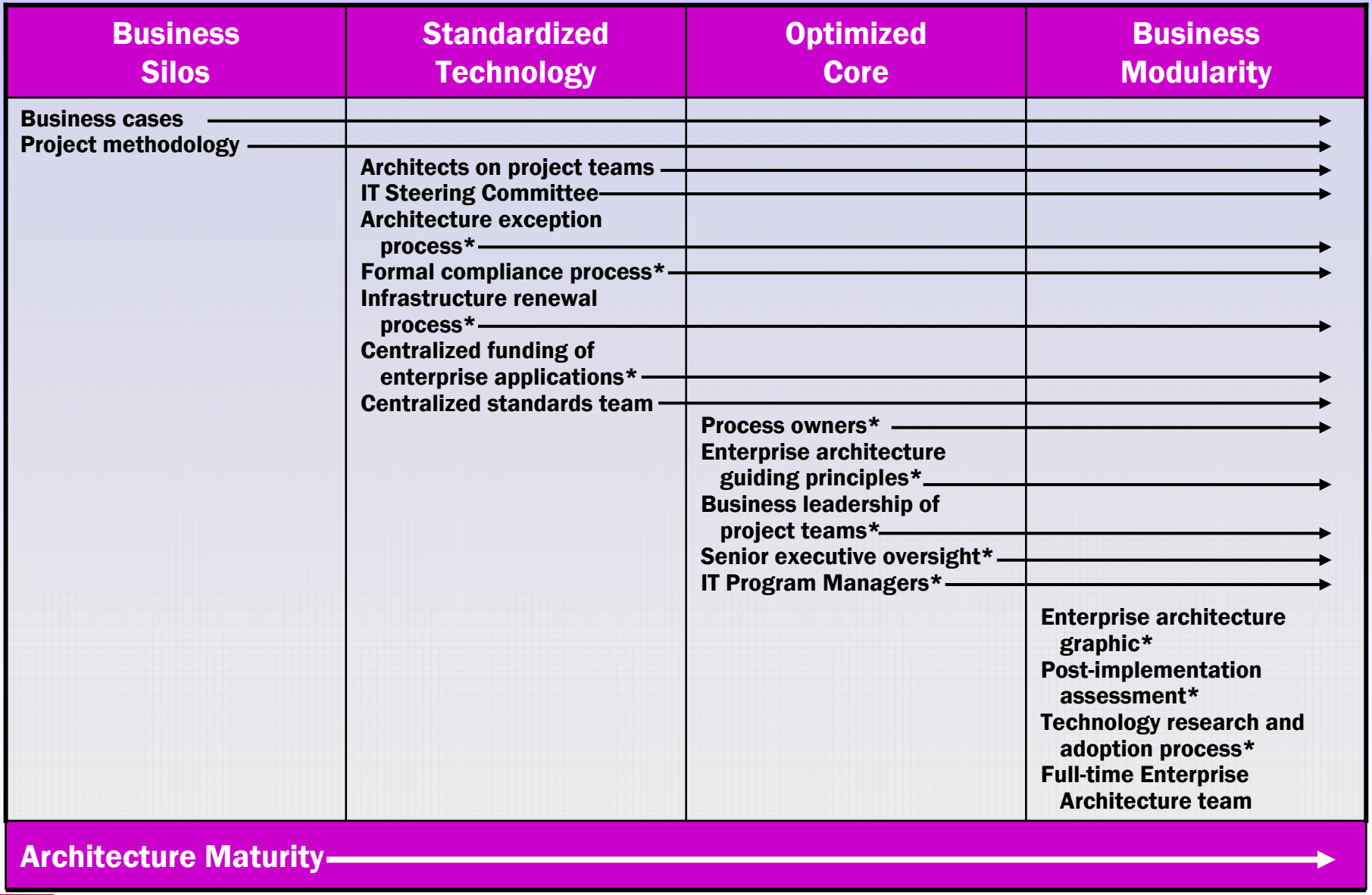
Source: *Architecture as Strategy: Creating a Foundation for Business Execution*, J. Ross, P. Weill, D. Robertson, HBS Press, June 2006.

Learning Requirements of the Architecture Stages

Stage Name	Business Silos	Standardized Technology	Optimized Core	Business Modularity
IT Capability	Local IT applications	Shared technical platforms	Enterprise-wide hardwired processes or databases	Plug & play business process modules
Business Objectives	ROI of local business initiatives	Reduced IT costs	Cost and quality of business operations	Speed to market; Strategic agility
Funding Priorities	Individual applications	Shared infrastructure services	Enterprise applications and data stores	Reusable business process components
Key Management Capability	Technology-enabled change management	Design and update of standards; funding shared services	Core enterprise process definition and measurement	Management of reusable business processes
Who Defines Applications	Local business leaders	IT & business unit leaders	Senior management and process leaders	IT, business and industry leaders
Key IT Governance Issues	Measure and communicate value	Establish local/ regional/global responsibilities	Align project priorities with architecture objectives	Define, source & fund business modules

Source: *Architecture as Strategy: Creating a Foundation for Business Execution*, J. Ross, P. Weill, D. Robertson, HBS Press, June 2006.

Management/Governance Practices to Formalize Learning



* Reported value of asterisked items is statistically significantly related to architecture maturity stage.

Source: *Enterprise Architecture as Strategy: Creating a Foundation for Business Execution*, J. Ross, P. Weill, D. Robertson, HBS Press, June 2006.

Architecture Lessons From Top Performing Companies

Characteristic	Low strategic effectiveness (n=78 firms)	High strategic effectiveness (n=25 firms)
Senior management involvement		
▪ Senior management explicitly defined architecture requirements	**25%** (of firms)	**44%** (of firms)
▪ Senior management oversees architecture initiatives	**45%** (of firms)	**60%** (of firms)
▪ Percentage of senior managers who can describe high level architecture	**19%** (of mgrs)	**39%** (of mgrs)
Architecture built into project methodology		
▪ Percentage of project teams with architects assigned	**49%** (of projects)	**81%** (of projects)
▪ Percentage of projects subjected to architecture compliance review	**60%** (of projects)	**80% (of projects)**
Median Architecture Maturity stage (1–4)	**2**	**3**

* Statistically significant difference between the responses of top 25% of firms on strategic effectiveness. Strategic effectiveness is measured as strategic outcomes (operational excellence, customer intimacy, product innovation, and strategic agility) of architecture initiatives weighted by their relative importance to each firm. The top 25% of firms on strategic effectiveness reported significantly higher profitability which correlated with industry adjusted measures of firm-wide profitability.

Source: *Architecture as Strategy: Creating a Foundation for Business Execution*, J. Ross,P. Weill, D. Robertson, HBS Press, June 2006.

Key Findings on Enterprise Architecture

- **Build capabilities not solutions.**
  This is the only way to avoid silos and create a powerful foundation for execution.
- **Do not skip stages.**
  Generating value from architecture investments is a learning process. Aggressive investment in IT capabilities can be slow to generate a return.
- **Capture learning in management and governance practices.**
  Management requirements are more complex in later stages.
- **Persist in involving senior business managers.**
  Firms getting strategic business benefits from an operating model have senior business leaders who are actively involved in its design, management and implementation.