

Adaptive Infrastructure Maturity Model

Planning your evolution to a next-generation data center

Hewlett-Packard Company

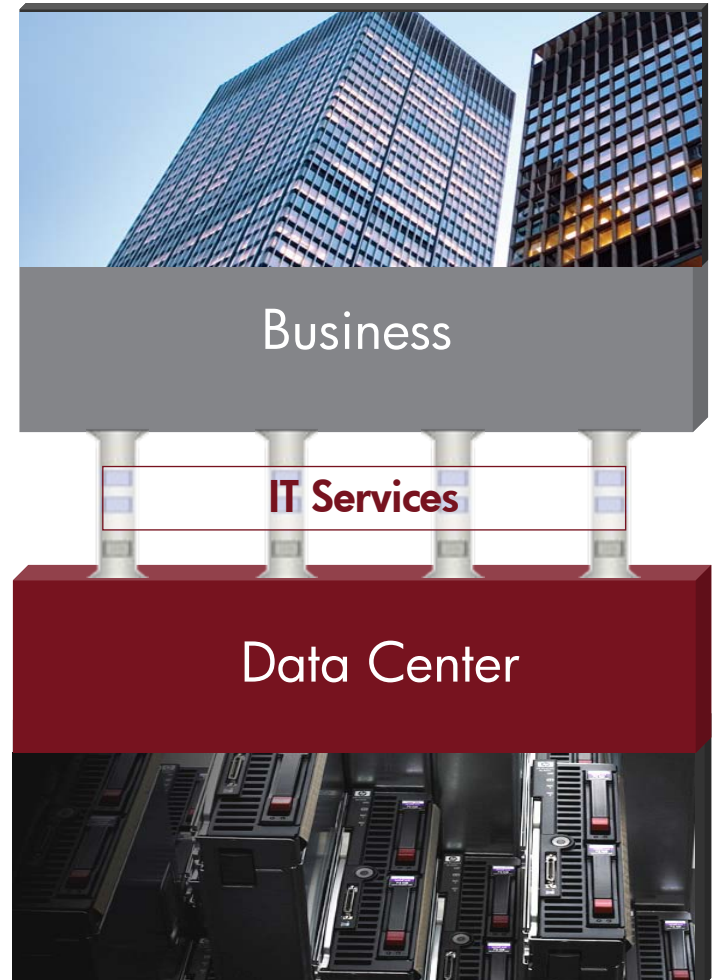


Adaptive Infrastructure

Delivering on the next-generation data center trend

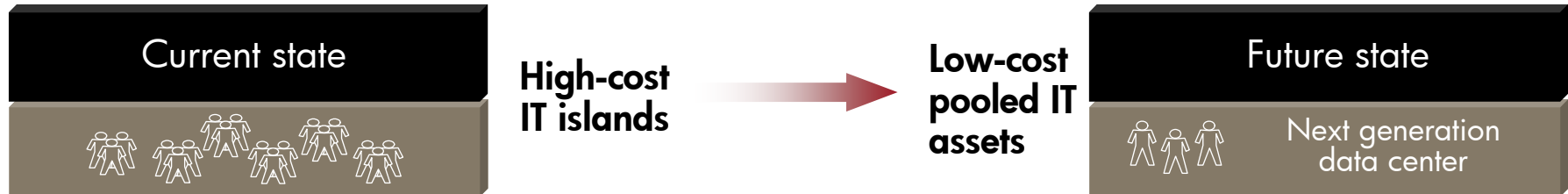
“24x7 lights-out computing environment, based on standard building blocks, automated using modular software, establishing the supply chain for IT services.”

- Lower **cost** of IT operations
- Higher **quality** of service with lower risk
- **Speed** in introducing IT change for business flexibility



Adaptive Infrastructure Maturity Model

Objectives



A pragmatic action-oriented business-focused approach that delivers a step-by-step, customized roadmap to implement a more adaptive infrastructure:

- Determines a customer's current data center state, and how best to progress to their desired "end state"
- Encompass all key areas – technology, process, people, governance
- Based on quantitative metrics and benchmark standards derived from primary research and best practices
- Recommendations that can be implemented today

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Using a standard set of quantitative metrics

		Domains			
		Technology & Architecture	Management Tools & Processes	Culture & Staff (IT Personnel)	Demand, Supply & IT Governance
Metrics	Operational Efficiency – Cost	<ol style="list-style-type: none"> 1. Percentage of CPU utilization 2. Infrastructure standardization at each resource layer 3. Power usage efficiency 	<ol style="list-style-type: none"> 1. Standardization of management tools and processes 	<ol style="list-style-type: none"> 1. Infrastructure cost breakdown – planning, support, operations 2. Degree of centralization of IT infrastructure 	<ol style="list-style-type: none"> 1. IT funding model 2. Portfolio management
	Quality of Service	<ol style="list-style-type: none"> 1. Definition of standard SLAs 2. Availability and recovery time of infrastructure 	<ol style="list-style-type: none"> 1. SLA process standardization and adoption 2. Security policy standardization and adoption 	<ol style="list-style-type: none"> 1. Technology versus business skills match 2. % of staff trained on IT processes 	<ol style="list-style-type: none"> 1. Demand forecasting and supply 2. Standard governance & Enterprise Architecture policies and adoption
	Speed of Change	<ol style="list-style-type: none"> 1. Service-orientation of infrastructure 2. Average time to provision a set of resources 3. Average time to deploy a change in an application 	<ol style="list-style-type: none"> 1. Percentage of processes, which are automated 	<ol style="list-style-type: none"> 1. Knowledge of end-to-end IT service delivery 2. Ratio of staff resources allocated to maintenance versus innovation 3. Staff more technology focused or service focused 	<ol style="list-style-type: none"> 1. Responsiveness to business needs

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Example: Mapping results and solutions to the metrics

Average and range CPU utilization

Questions

Proposed Solutions

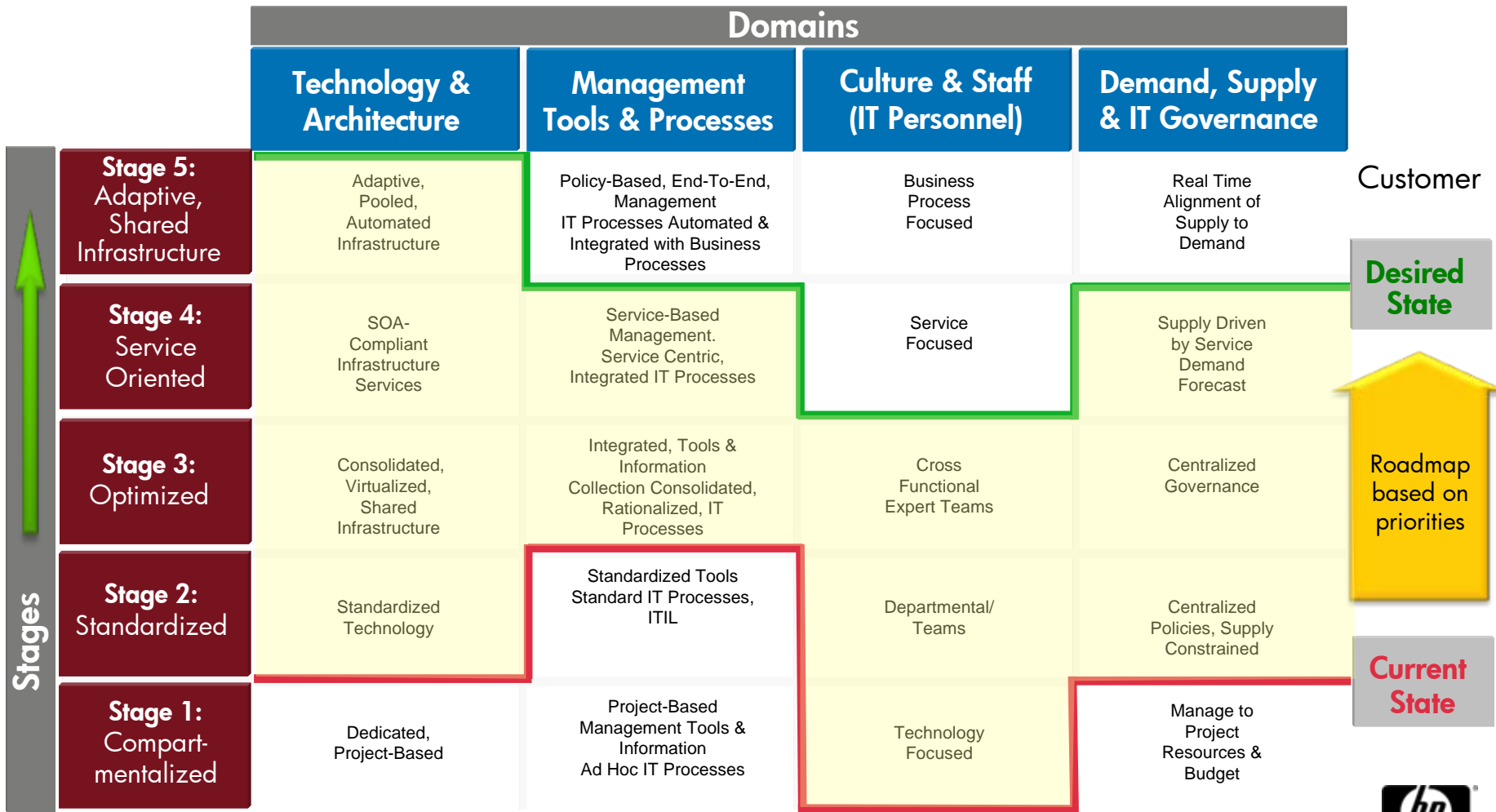
1.1.1 – TE1 Average CPU utilization	What is the average CPU utilization across all servers in your data center environment?				
Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	
Average 10% or unknown	Average < 25%	Average < 35%	Average < 60%	Average < 75%	
1.1.1 – TE1 Range of CPU utilization	Over what range does the average CPU utilization vary across the servers in your data center environment?				
Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	
Unknown or wider range (typical for un-consolidated environments)	Range 10-60% (typical for partial earlier server consolidation)	Range 20-70% (typical for significant, recent consolidation)	Range 35-75% (typical for virtualized environments)	Range 45-80%	

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Stage T1	Stage T2- Standardised Technology	Stage T3 – Consolidated, virtualized, shared infrastr.	Stage T4 – SOA-compliant infrastructure services	Stage 5 – Adaptive, pooled, automated infrastr.
	IT Consolidation Business Cont. & Avail. Data Centre Assesst. Serv. ProLiant servers Integrity servers StorageWorks arrays & libraries Systems Insight Mgt. BTO Operations Center Proactive 24 Site Planning & Reloc Serv. Thermal Assesmt Serv.	IT Consolidation Infra Virtualization Serv. BIO Data Protection sw. Virtual Server Environment Essentials Modular Cooling System Mission Critical Services Instant Support Ent. Edtn. Virus Throttling	IT Shared Services BIO Info Lifecycle Mgt. sw. Dynamic Smart Cooling Flexible Computing Serv. BIO Ref Info Storage Syst. Shared Infrast. Utilities	IT Shared Services IT Outsourcing Services

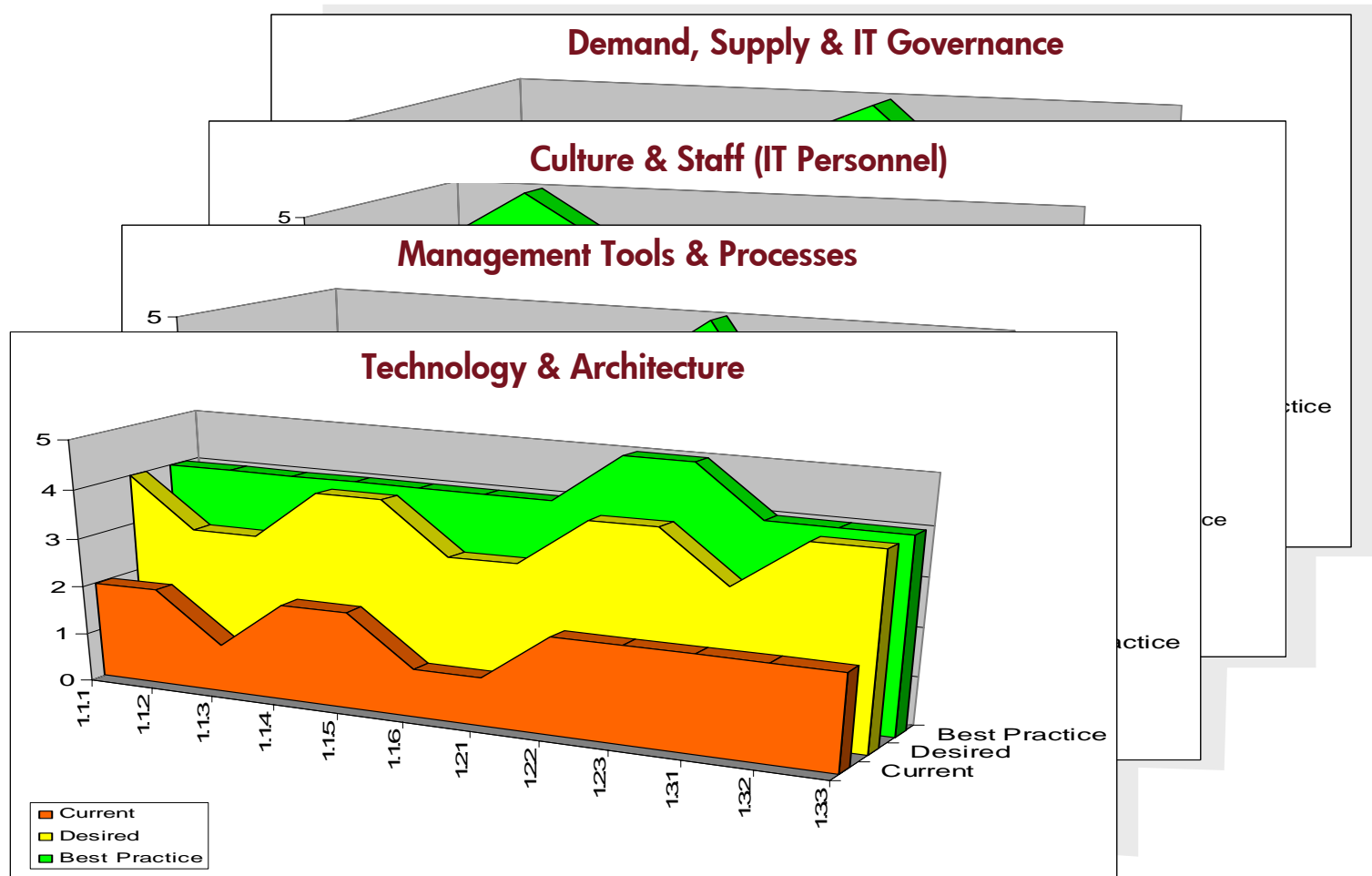
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Current and desired state based on standard metrics



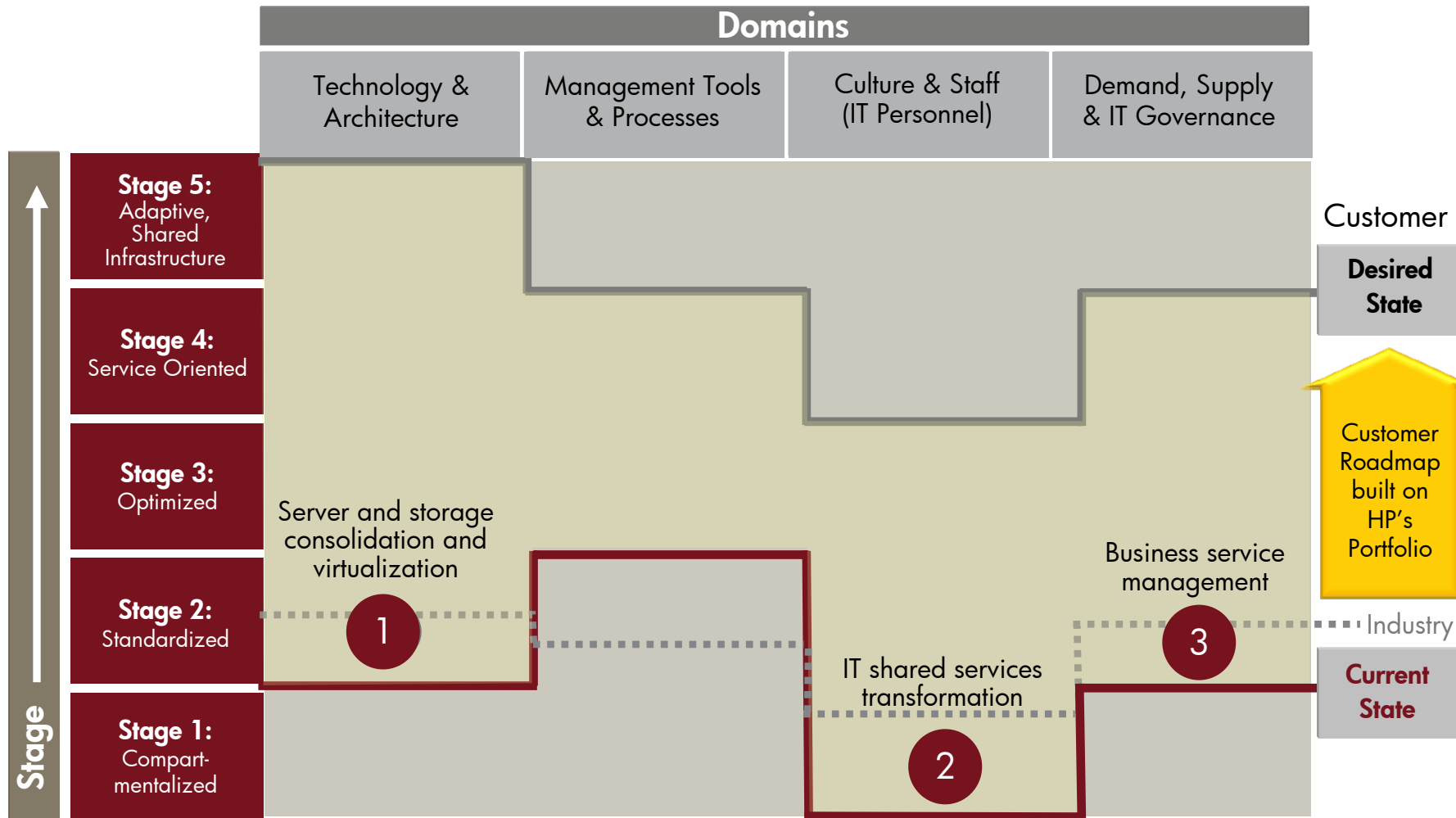
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Current and desired state mapping across domains



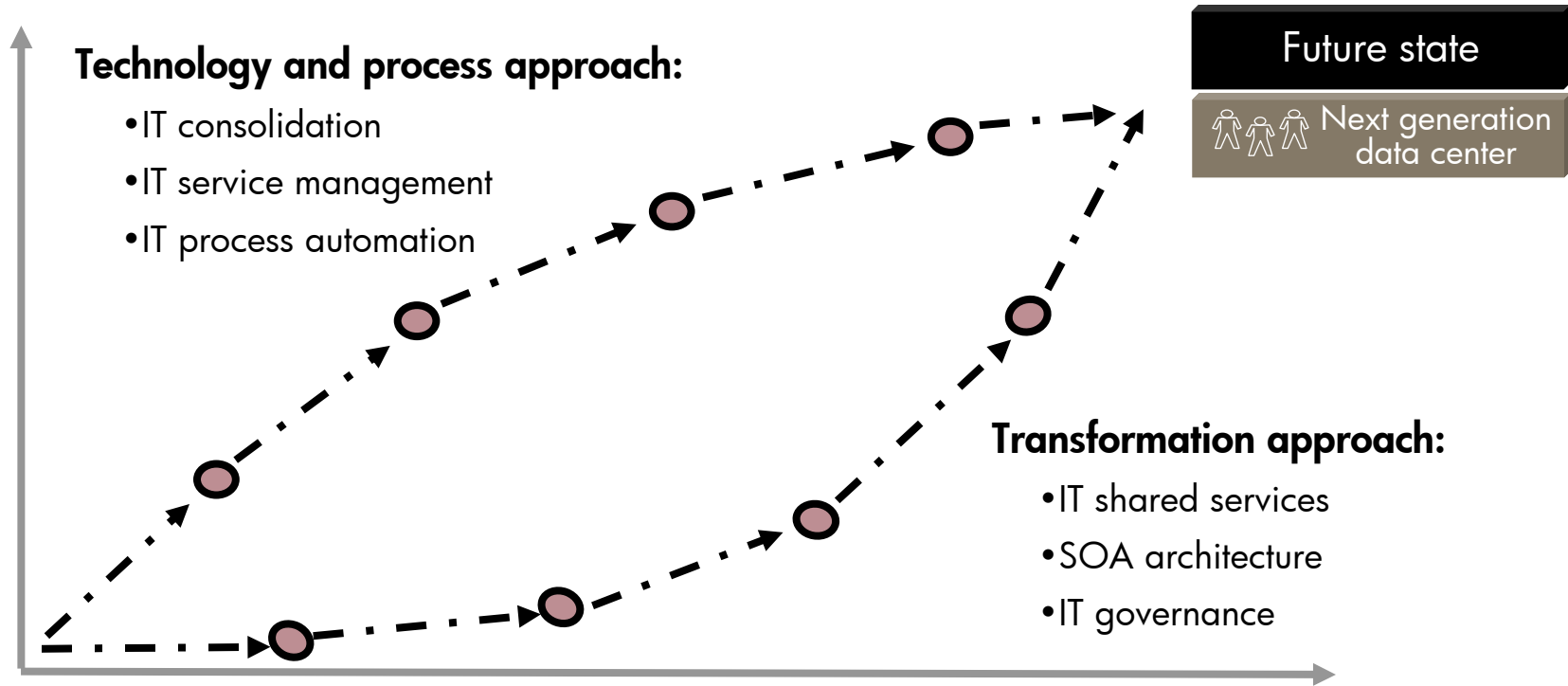
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Suggested next steps based on business priorities



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Choosing the right approach for a given situation



Current state



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Implementation process

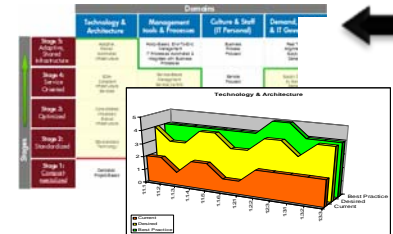
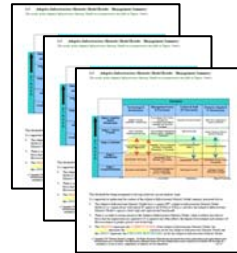
- 1 Process review and agreement with customer
- 2 Customer data gathering
- 3 Face-to-face discussion to review data



Metrics	Domains			
	Technology & Architecture	Management Tools & Processes	Culture & Staff (IT Personnel)	Demand, Supply & IT Governance
Operational Efficiency (Cost)	Percentage of CPU utilization Infrastructure identification of each resource layer Service usage efficiency	Standardization of management tools and processes	Infrastructure cost breakdown - planning, support, operations Degree of utilization of IT infrastructure	IT Funding model Portfolio management
Quality of Service	Definition of service SLAs Availability and recovery time of infrastructure	SLA process development and adoption Security policy standardization and adoption	Technology usage business skills matrix % of staff trained on IT processes	Demand forecasting and supply Operational performance & SLA Architecture policies and adoption
Speed of Change	Service/infrastructure of infrastructure Average time to provision a set of resources Average time to adjust a change in infrastructure	Percentage of processes which are automated	Knowledge of end-to-end and IT staff roles Ratio of staff resources allocated to maintenance versus innovation Staff more technology focused or service focused	Responsiveness to business needs



- 4 Information analysis & report generation
- 5 Preparation for customer-specific recommendations
- 6 Presentation of findings & recommended approaches



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Results

- Measure current state vs industry benchmarks
- Define a series of actionable and measurable steps towards a next-generation data center
- Tailored to your environment and business priorities
- Basis for ROI analysis



“HP did a great job linking the IT and business goals and objectives, and specifically explaining how IT initiatives such as governance and virtualization, can add money to the company's bottom line.”

Don Head, Director Infrastructure & Technology Solutions, Maple Leaf Foods Inc

Thank you.

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