Dynamic computing solutions entail a comprehensive approach to helping companies become more effective, agile and resilient. In fact, as we have explained in multiple reports, they require six interrelated capabilities:

Enterprise Architecture:
<table>
<thead>
<tr>
<th>Business Strategy</th>
<th>Increasing need for agility, conflicting with OPEX</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Increasing insight in aligning strategy to processes</td>
</tr>
<tr>
<td>Business Processes</td>
<td>Continuing need for OPEX, conflicting with agility</td>
</tr>
<tr>
<td>Data</td>
<td>Well modelled relationships</td>
</tr>
<tr>
<td>Applications</td>
<td>Meta and Domain Data models</td>
</tr>
<tr>
<td></td>
<td>Logical separation of data and applications</td>
</tr>
<tr>
<td>Generic User Services</td>
<td>EAI, componentisation (SOA), managing EOL</td>
</tr>
<tr>
<td>Technical Infrastructure</td>
<td>Separation of applications/data from TI</td>
</tr>
<tr>
<td></td>
<td>Identity- Knowledge- Workflow management</td>
</tr>
<tr>
<td></td>
<td>Separation for maximum flexibility, security</td>
</tr>
<tr>
<td></td>
<td>Virtualisation, ITSM -&gt; shared services, TCO</td>
</tr>
</tbody>
</table>
Given these complexities… Enter Solution Architecture

There must be a consistent and governable way to apply the EA in programs and projects.

The EA is the ‘City Plan’, which is not built as such. The SA is the design for the constituent parts that are being built, such as streets, houses, shops, schools, offices, sewage systems, public transportation, etc.

HP uses a well-proven method for SOLUTION ARCHITECTURE to develop architecture for initiatives, programs or projects that must be conceived, designed, contracted, built, deployed and evolved.
The Solution Architecture Model

Business sponsor

Why?

Separation of concern

What?

Functional View

Technical View

How?

Implementation View

With?

Stakeholders

User

Builder

Operator/Provider

HP Global Method IT Strategy & Architecture (ITSA)
Model filled in

**Business View**
- Business drivers
- Business goals
- Business principles

**Functional View**
- Services to users
- Principles for quality, quantity and use

**Technical View**
- Technical components
- Principles for data, applications and infrastructure

**Implementation View**
- Principles for technology, suppliers organisation (development, usage, operations) and rollout phasing

**Characteristics**
- Stakeholder views
- Coherence between views via principles
- Models for communication
- Capturing standards
Example: IT Consolidation

**BUSINESS DRIVERS**
- Cost
- Business Value
- Business Agility

**GOALS** (overall Business Case), e.g.:
- Cost/transaction
- Customer intimacy
- Shipment reliability
- Product time-to-market

**PRINCIPLES**
- Governance
- Ownership
- Financing

**BUSINESS**

**TECHNICAL**

**IMPLEMENTATION**

**PRINCIPLES for:**
- Data
- Applications
- Infrastructure

- Separation of applications, data & infrastructure
- Separation of application domains
- Consolidation & Virtualisation of the infrastructure
- Services based architecture
- ITSM Tools

**Back Office**
- Middleware
- Generic services
- Management

**Middle Office**
- Platforms, Network

**Front Office**
- Business

**FUNCTIONAL**

**PRINCIPLES for:**
- Services model
- Principles for quality, quantity and usage

- Capacity
- Availability
- Reliability
- Problem solving
- User support
- Changes

- Pay per use
- Demand forecast
- Access (identity, rights, 24X7, mobility?)
- QoS
- ......

**Principles** for:
- ITSM process & organisational improvements
- Program and project conduct
- Migration
- Rollout phasing
- Change Management
- Strategic sourcing

State-of-the-art Service Provider
Architectural coherence (1)

- Business View
  - Business Drivers
    - Goals
    - Business Principles
    - Rationales

- Functional View
  - Functional Principles
  - Rationales

- Technical View
  - Technical Principles
  - Rationales

- Implementation View
  - Implementation Principles
  - Rationales

SYSTEMS
PROCESSSES
ORGANISATION

PROJECT PLAN
ELEMENTS
Architectural coherence (2)

- Architects to help stakeholders use the EA elements to shape the solution
- A Governing Body (Steering Group, Policy Board) to manage architectural compliance
SA and EA by HP

The Darwin Reference Model – HP’s model for Enterprise Architecture

The ITSA Model – HP’s model for Solution Architecture

LEARN & ADAPT

Evolve
Operate & Use
Detailed design, build, integrate & test
RFP -> bid -> sell -> contract
ITSA Architecture Blueprint
ITSA Architecture Concept

Separation of concern
Why?
What?
How?
With?

Business Processes
Application Services
Infrastructure Services
Virtualized Resources

Business Strategy
Information
Demand

Integrate & Orchestrate
Manage & control
Supply

Business sponsor
User
Builder
Operator/Provider
Stakeholders

Business View
Functional View
Technical View
Implementation View

LEARN & ADAPT

Detailed design, build, integrate & test
RFP -> bid -> sell -> contract
ITSA Architecture Blueprint
ITSA Architecture Concept

Separation of concern
Why?
What?
How?
With?

Business sponsor
User
Builder
Operator/Provider
Stakeholders

Business View
Functional View
Technical View
Implementation View

ITSA Model – HP’s model for Solution Architecture
Value propositions

- **Enterprise Architecture:**
  - Helps enterprises to map strategy to action and determine the key layer-separations to manage execution
  - Helps suppliers to position the portfolio of offerings against the customer’s EA in whatever shape or form it might be

- **Solution Architecture:**
  - Helps enterprises to consistently apply/use the EA in real projects; this makes sure that (a) actual implementations all sing to the same tune and (b) that the EA gets better all the time based on execution experiences
  - Helps suppliers to (a) use every bit of best technology and best practice capability and (b) have a consistent approach to the engagement and design phases of projects resulting in higher quality/lower risk realisations.

- **EA + SA together:**
  - Help enterprises to develop a ‘Roadmap of Continuous Improvement’ (see PS slide)
  - Help suppliers to build customer and partner collaborations based on shared and sharable insights; this drives down solution costs and increases quality and flexibility
Creating Business Value

A well-GOVERNED and evolutionary model creating adaptive business/IT alignment FOR VALUE
Two ways to develop the EA

A – Adapt & Go

Current EA

- Content
  - Analysis
  - Proposed improvements
  - Approval
  - Enhanced EA
  - Implementation in real projects

B – Go & Adapt

Current EA

- Pressing business need
- EA content & implicit conduct
- Concept of the need
- Program/ Project selection
- SA Blueprint for project
- Project Launch
- Project Realisation
- Project Evolution

Full capitalisation of learning to improve both content and conduct of the EA
Lessons learned

1. In practice often EA’s ‘have not a lot in it yet’ and their ‘power of law’ is not clear – leaving lots of room for improvement, both in content and in conduct.

2. Applying methodical solution architecture to projects allows for much better transitions between phases and teams - Think continuous teamwork, not ‘phased handoffs’.

3. SA helps to put EA in its proper place, keeping it small, manageable and communicable.

4. Cost reduction pressures present opportunities to improve the overall position and way of working with IT, as cost must always be balanced against business value.

5. Adaptivity is not achieved by just technology, it is the result of an integral approach using architectural insight, governance and formal change management.

6. In this way architecture (EA+SA) becomes a repository of critical business knowledge – to be carefully managed.
Thank you!

Any questions?
PS (1) Adaptive Enterprise Roadmap

Real-time business agility
- Complete infrastructure flexibility
- Dynamic, policy-based management & workload/resource allocation
- Enterprise-wide integration
- IT delivered as business process services
- Investment directly linked to business needs

Business efficiency
- Automated policy-based management links IT to business metrics
- All IT resources and processes aligned and simplified to enable optimal utilization, performance and response
- IT spend efficient and effective

Business stability
- Integrated view of system-wide operations and SLAs
- Infrastructure simplified and consolidations
- Business Continuity and Availability assured
- Security Services validated
- Adaptive Network Architecture in place

Management & control

Services

Resources

Discrete partitioned

Integrated clustered

Virtualized federated

Solution architecture

Enterprise architecture
PS(2) – About the author

Rob Kruijk has been working for over 30 years in software solutions for Digital Equipment, then Compaq and now HP, in all industries, all over the world. In the last 8 years his consultancy work has developed into architecture-led governance of complex IT-issues in need for business/IT aligned solutions. This included telco’s in Holland, Hong Kong, Poland, Germany, Sweden and Malaysia, banks in South Africa, Sweden and Holland, utilities in Canada and Hong Kong, shipping companies in Denmark and Hong Kong, several Government and educational institutions as well as industrial, retail and transport companies in Holland. This diverse experience has yielded many insights made practical for dealing with the dynamics and challenges of today’s business/IT environment. Besides his work with customers, Rob is HP’s Lead for the solution architect profession in EMEA and elected chairman of the Netherlands Architecture Forum, an association of 35 enterprises – large IT users, the main IT and SI suppliers and academia – aimed at the advancement of architecture towards better business solutions with IT.