

# Defining an EA Skillset



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Louw is passionate about all aspects of information management and had the opportunity to act as strategist, architect, speaker, trainer, analyst, modeller and developer within this field over the past 20 years holding a strong track record at reputable organisations.

## Industry Contributions

- Contributor to TOGAF 9 & ArchiMate 1.0 Standards
- Contributor to TOGAF 9 Certification for People
- Open Group white paper co-author: IT Governance
- Speaker at Open Group conferences & Webinars

## Industry Articles

- Author of several published white papers on TOGAF, Enterprise Architecture & Architecture skills

## Certifications

- TOGAF 9 Certified Architect
- Licensed ZapThink Architect
- Zachman Certified
- ArchiMate 2 Certified

## Qualifications

- M. Tech. (Information Technology)
- MBA



*M. Tech. Professional  
Practice in I.T. , MBA*



# Agenda

The badge framework described in this presentation was designed by Elize Labuschagne

1. Overview of the Skills Framework for the Information Age (SFIA)
2. Adoption of SFIA by Organisations
3. Classification of EA Skills by industry
4. Using SFIA & GERAM to define a simple Enterprise Architect skills classification scheme
5. Introduction to Open Badges
6. Using an Open Badge framework with SFIA & GERAM to standardise skills definition & training for EA's



# Skills Framework for the Information Age

# Skills Framework for the Information Age (SFIA)

Skills Framework for the Information Age (SFIA version 5)		Levels of responsibility and accountability						
		Level 1 follow	Level 2 assist	Level 3 apply	Level 4 enable	Level 5 advise	Level 6 initiate	Level 7 set strategy
Skills in categories	Strategy & Architecture							
	Business Change							
	Solution Development & Implementation							
	Service Management							
	Procurement & Management Support							
	Client Interface							

**SFIA (Skills Framework for the Information Age)** is a simple and logical two dimensional framework consisting of skills in categories of work on one axis and levels of responsibility on the other. The framework is used as basis for defining skills by world class standards organisations like the Open Group, British Computer Society, Canadian Computer Society and the International Institute of Business Analysis.

# Skills Framework of the Information Age (SFIA)

- Standardised definitions of information technology skills and levels.
- Understood by technical managers and HR managers.
- Common language of IT skills development and deployment
- Improve communications between IT staff, management, HR and stakeholders.
- SFIA defines 96 professional IT skills,
  - organised in six categories
  - It also defines seven levels of attainment, each of which is described in generic, non-technical terms.
  - Each skill has an overall definition
  - An “at-level” definition for each of the levels at which it can be recognised.



*The licence for use of SFIA as an internal management tool is free of charge.  
Licences for commercial exploitation of SFIA attract a fee.*

# Skills Framework for the Information Age Poster

Skills Framework for the Information Age version 5



		1 Follow	2 Analyze	3 Apply	4 Evaluate	5 Create, deliver	6 Monitor, influence	7 Lead strategy, inspire, enable
Strategy and architecture	Information strategy					Information management (IS01)	Information systems architecture (IS02)	
				Information security (IS11)		Information systems architecture (IS02)		
				Information analysis (IS03)		Information systems architecture (IS02)		
	Architecture and planning					Information systems architecture (IS02)		
	Business strategy and planning			Research (BS01)		Business strategy (BS02)	Business process improvement (BP01)	
						Business strategy (BS02)	Business process improvement (BP01)	
						Business strategy (BS02)	Business process improvement (BP01)	
						Business strategy (BS02)	Business process improvement (BP01)	
						Business strategy (BS02)	Business process improvement (BP01)	
						Business strategy (BS02)	Business process improvement (BP01)	
Business design	Business design implementation					Business design implementation (BD01)	Business design implementation (BD01)	
						Business design implementation (BD01)	Business design implementation (BD01)	
	Business design management					Business design management (BD02)	Business design management (BD02)	
						Business design management (BD02)	Business design management (BD02)	
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						Business design management (BD02)	Business design management (BD02)	
Systems development and implementation	System development					System development management (SD01)		
						System development management (SD01)		
						System development management (SD01)		
						System development management (SD01)		
						System development management (SD01)		
						System development management (SD01)		
						System development management (SD01)		
						System development management (SD01)		
						System development management (SD01)		
						System development management (SD01)		
Service management	Service strategy					Service strategy management (SS01)	Service strategy management (SS01)	
						Service strategy management (SS01)	Service strategy management (SS01)	
	Service design					Service design management (SD01)	Service design management (SD01)	
						Service design management (SD01)	Service design management (SD01)	
	Service transition					Service transition management (ST01)	Service transition management (ST01)	
						Service transition management (ST01)	Service transition management (ST01)	
	Service operation					Service operation management (SO01)	Service operation management (SO01)	
						Service operation management (SO01)	Service operation management (SO01)	
						Service operation management (SO01)	Service operation management (SO01)	
						Service operation management (SO01)	Service operation management (SO01)	
Support and management support	Supply management					Supply management (SM01)	Supply management (SM01)	
						Supply management (SM01)	Supply management (SM01)	
	Quality and performance					Quality management (QM01)	Quality management (QM01)	
						Quality management (QM01)	Quality management (QM01)	
						Quality management (QM01)	Quality management (QM01)	
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						Quality management (QM01)	Quality management (QM01)	
						Quality management (QM01)	Quality management (QM01)	
Other Information	Notes and marketing					Notes and marketing (NM01)	Notes and marketing (NM01)	
	Other support					Other support (OS01)	Other support (OS01)	



# Skills Framework for the Information Age Poster

		1 Follow	2 Assist	3 Apply	4 Enable	5 Ensure, advise	6 Initiate, influence	7 Set strategy, inspire, mobilise
Strategy and architecture	Information strategy					IT governance GOVN		
					Information management IRMG			
							Information systems co-ordination ISCO	
				Information security SCTY				
						Information assurance INAS		
				Information analysis INAN				
	Information content publishing ICPM							
	Advice and guidance					Consultancy CNSL		
					Technical specialism TECH			
	Business strategy and planning			Research RSCH				
						Innovation INOV		
						Business process improvement BPPE		
						Enterprise and business architecture development STPL		
					Business risk management BURM			
						Sustainability strategy SUST		
	Technical strategy and planning				Emerging technology monitoring EMRG			
					Continuity management COPL			
						Software development process improvement SPIM		
						Sustainability management for IT SUMI		
						Network planning NTPL		
						Solution architecture ARCH		
					Data management DATM			
					Methods and tools METL			



# Enterprise and business architecture development

## STPL

### Enterprise and business architecture development STPL

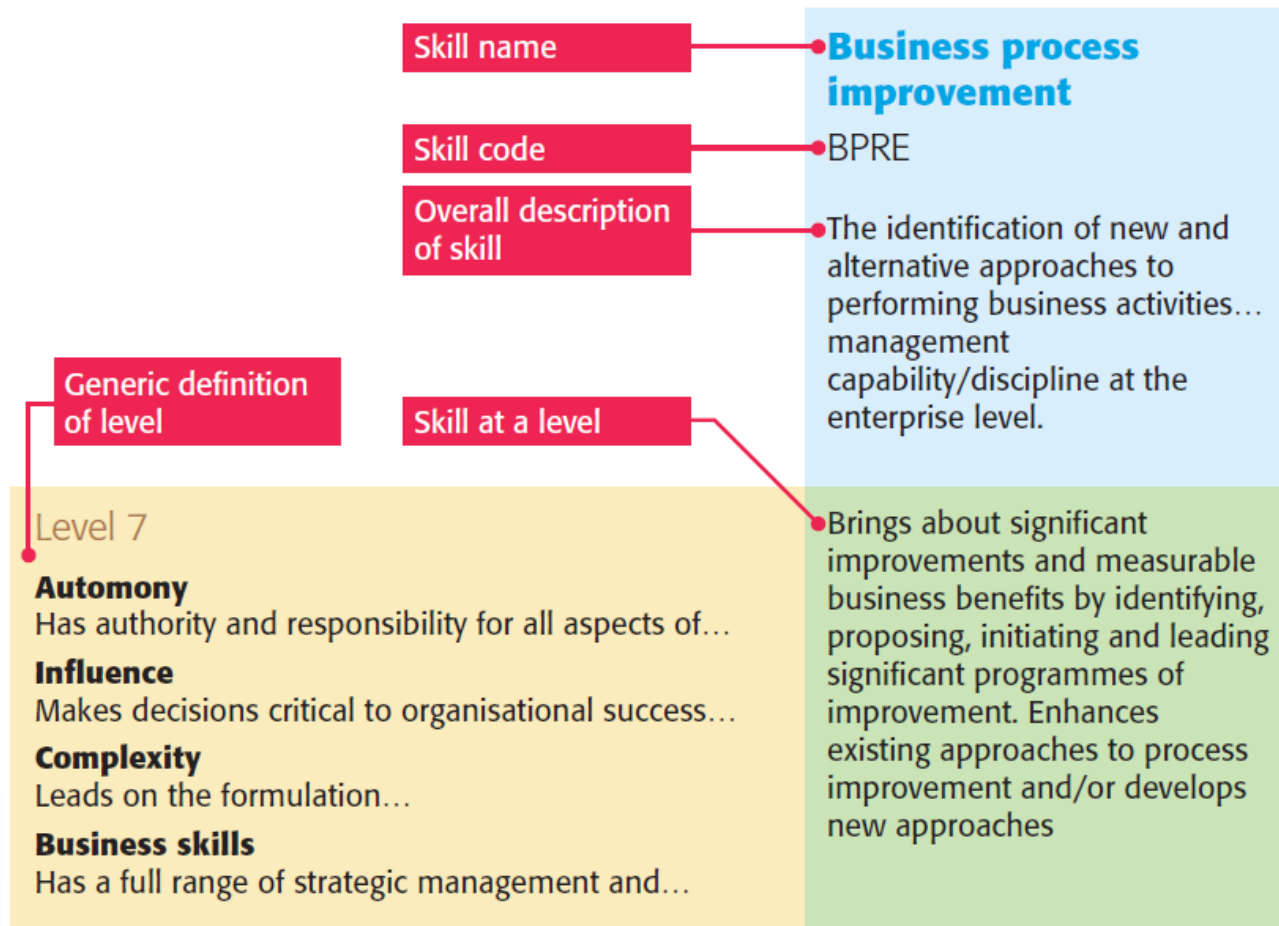
The creation, iteration, and maintenance of structures such as enterprise and business architectures embodying the key principles, methods and models that describe the organisation's future state, and that enable its evolution. This typically involves the interpretation of business goals and drivers; the translation of business strategy and objectives into an “operating model”; the strategic assessment of current capabilities; the identification of required changes in capabilities; and the description of inter-relationships between people, organisation, service, process, data, information, technology and the external environment.

The architecture development process supports the formation of the constraints, standards and guiding principles necessary to define, assure and govern the required evolution; this facilitates change in the organisation's structure, business processes, systems and infrastructure in order to achieve predictable transition to the intended state.

#### **Enterprise and business architecture development: Level 5**

Contributes to the creation and review of a systems capability strategy which meets the strategic requirements of the business. Develops models and plans to drive forward the strategy, taking advantage of opportunities to improve business performance. Takes responsibility for investigative work to determine requirements and specify effective business processes, through improvements in information systems, data management, practices, procedures, organisation and equipment.

# SFIA's generic levels provide a background against which the specific professional skills can be judged



## Examples of the SFIA in practice

# The Open Group Certified Architect (Open CA) Program

## Architecture Skill Mapping to SFIA

Architecture								
<b>Develop IT Architecture</b> Given one or more business requirements, create the structures of a solution that can be validated to meet those requirements.	Enterprise and Business Architecture Development	STPL						
	Solution Architecture	ARCH						
<b>Use Modeling Techniques</b> Use modeling techniques – such as use-case, scenario modeling, prototyping, benchmarking, and performance modeling – to describe the problem space, to size the solution, and to validate that the proposed architecture addresses the business requirements.	Enterprise and Business Architecture Development	STPL						
	Solution Architecture	ARCH						
	Business Analysis	BUAN						
	Business Modeling	BSMO						
<b>Perform Technical Solution Assessments</b> Given a technical solution and the underlying business requirements that drove its development, assess the technical integrity and risks inherent in that solution in such a way that the recommendations and findings are appropriate and implementable.	Business Risk Management	BURM						
	Business Process Testing	BPTS						
	Systems Design	DESN						
	Conformance Review	CORE						

# e-Governance Competency Framework for Digital India – Technical Architect Role

Primary	
01	Enterprise and business architecture development
02	Solution architecture
03	Business process improvement (GPR)
04	Technical specialism
05	Software development process improvement
06	System design
07	Network design
08	Requirement definition and management
09	Database Design
10	Emerging technology monitoring
Desirable	
11	Project management
12	System integration
13	Release and deployment

## Example Job ad for Enterprise Architect

# Job Specification - Business architect R800K

- The incumbent will lead and establish a business architecture and business process modelling (BPM) capability in support of client requirements, as well as internal initiatives. They will be responsible for conceptualising and driving large research and development (R&D) and enterprise engineering programmes that mobilise architecture and engineering capabilities for key clients and for developing key systems engineering and integrative capabilities.

## Qualifications and Experience Required:

- A Bachelor's degree in industrial engineering, computer/electronic engineering, computer science or similar/relevant domains.
- A Master's level degree will be advantageous.
- At least a minimum of three years' relevant working experience in business process architecture or analysis or reengineering

## Essential Skills Required:

- Business process modelling and management.
- Use of BPM notation(s) and tool(s).
- Business process implementation.
- Business process or workflow engines would be advantageous.
- Systems engineering and/or defence would be advantageous.
- Enterprise Architecture frameworks, for example, The Open Group Architecture Framework (TOGAF), Zachman would be advantageous.



# Organising Framework for Occupations

# Organising Framework for Occupations

The OFO adds value to skills development planning and implementation purposes in that it:

- provides a common language when talking about occupations;
- captures jobs in the form of occupations; and
- groups occupations into successively broader categories and hierarchical levels based on similarity of tasks, skills and knowledge.

Skill specialisation is considered in terms of four conceptual concepts:

1. the field of knowledge required;
2. the tools and machinery used;
3. the materials worked on or with;
4. and the kinds of goods and services produced.

NSDS	NQF Level	Skill Level	OFO Major Groups			
HIGH	10 ↑ 7	4	2 Professionals			1 Managers
	INTERMEDIATE	6	3	3 Technicians and Associate Professionals		
5		2	4 Clerical Support Workers	5 Service and Sales Workers	6 Skilled Agricultural, Forestry, Fishery, Craft & Related Trades Workers	7 Plant and Machine Operators and Assemblers
4						
ENTRY	3	1	8 Elementary Occupations			
	2					
	1					

## 2 PROFESSIONALS

### 25 Information and Communications Technology Professionals

#### 251 Software and Applications Developers and Analysts

##### 2512 Software Developers

##### 251202 Programmer Analyst

251202 Programmer Analyst – Alternative Descriptions:

- Architect ( Applications / Call Centre / Computing / Desktop / Ecommerce)
- **Architect** (**Enterprise** / Internet / IT / Network / Software / Unix / Web)
- Computing (Development / Field) Engineer
- Cross Enterprise Integrator
- Database Designer
- Designer (Hardware - Digital / Software)
- Education Systems Coordinator
- Engineer (Applications / Content / IT / Software / Systems / WAN)
- Software Configuration / Licensing Specialist

# Defining the unique contribution a job makes in the workplace

Outputs should be defined by identifying the unique contribution a job makes to a work context.

This “contribution” is based on asking the following questions:

**1. What is it that people will ask you for?**

- What are the unique objects or services you provide?

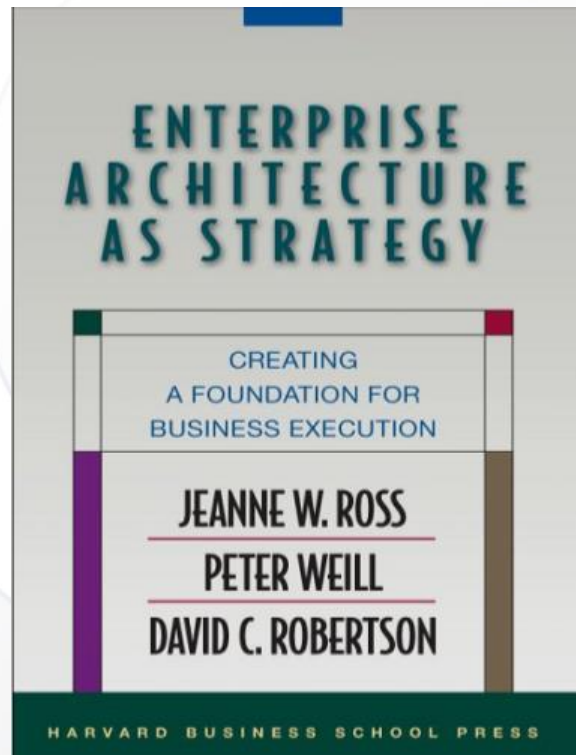
**2. What do you keep yourself busy with?**

- What are the most important or critical activities you are involved in?

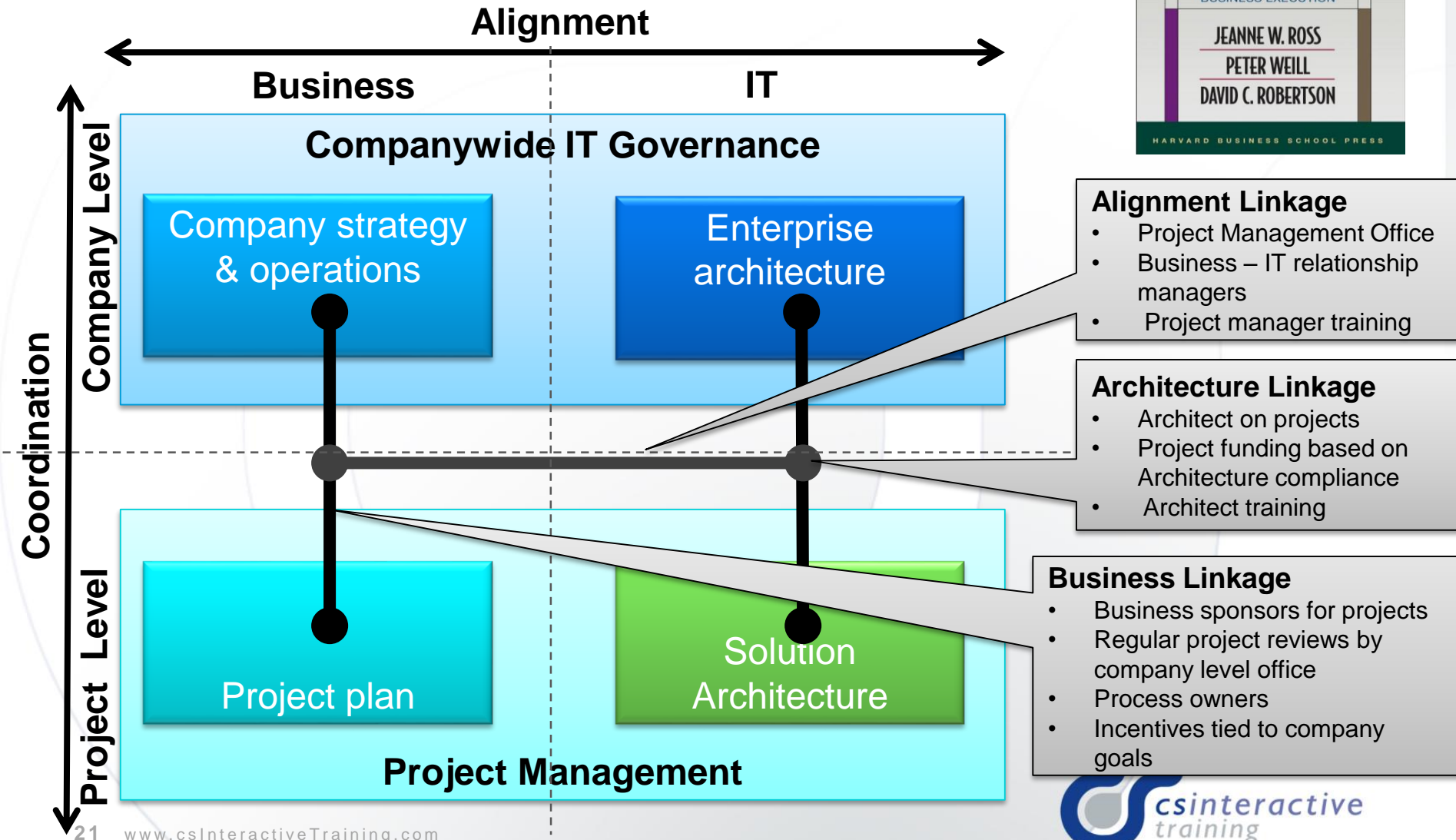
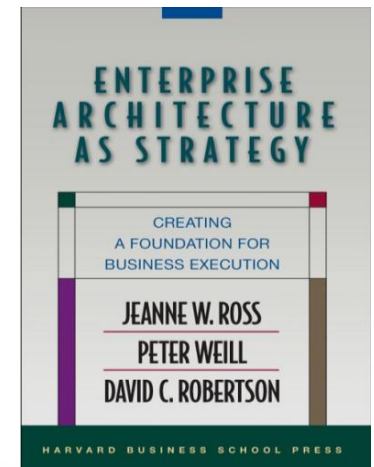
**3. What is the unique contribution you make to the place of work?**

- How do you convert inputs into products or services?
- What value do you add to the objects that form part of your work OR what is the unique value of the service you provide to your customers?

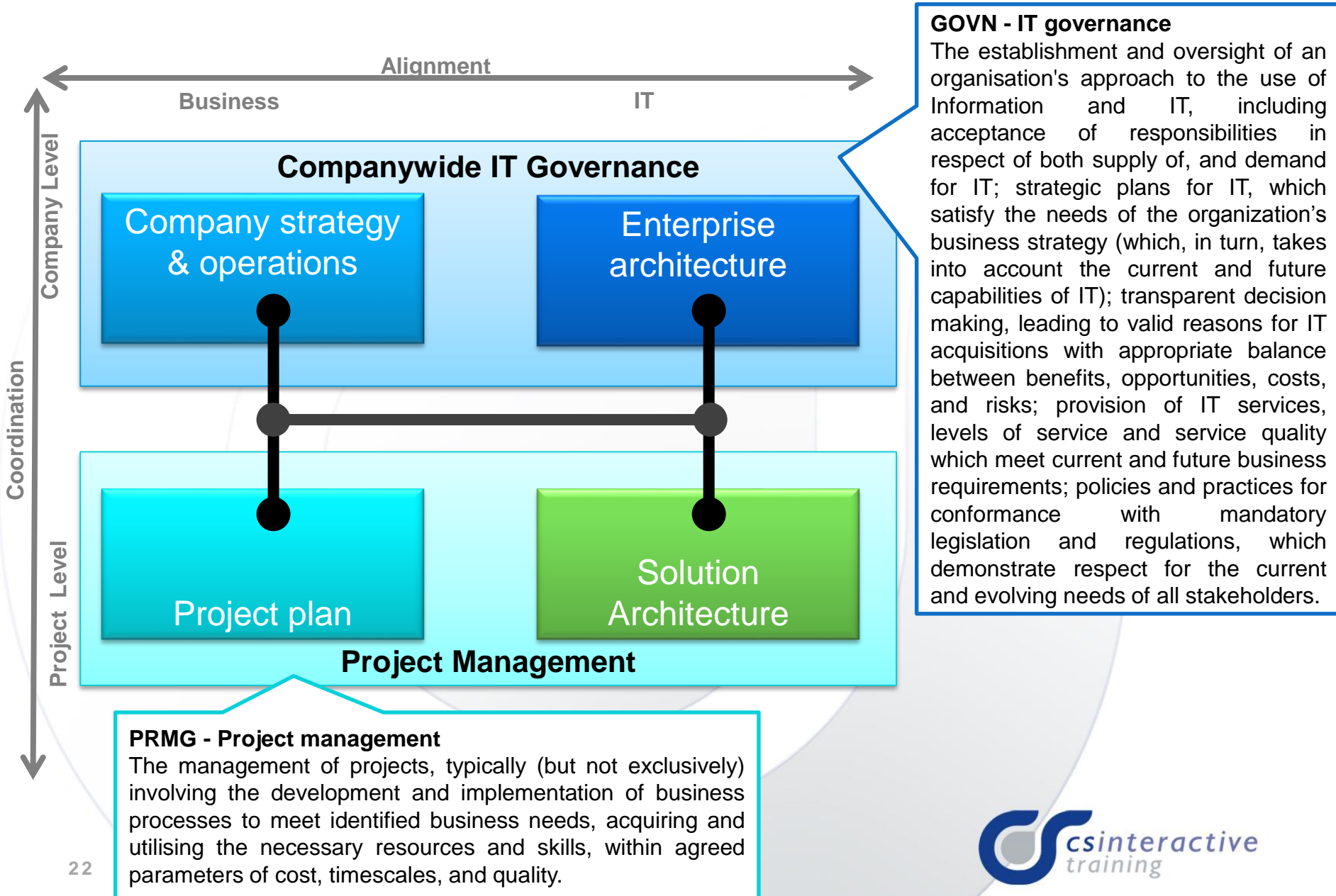
## Using the EA as strategy IT Engagement model to SFIA Skills for Architects



# IT Engagement Model

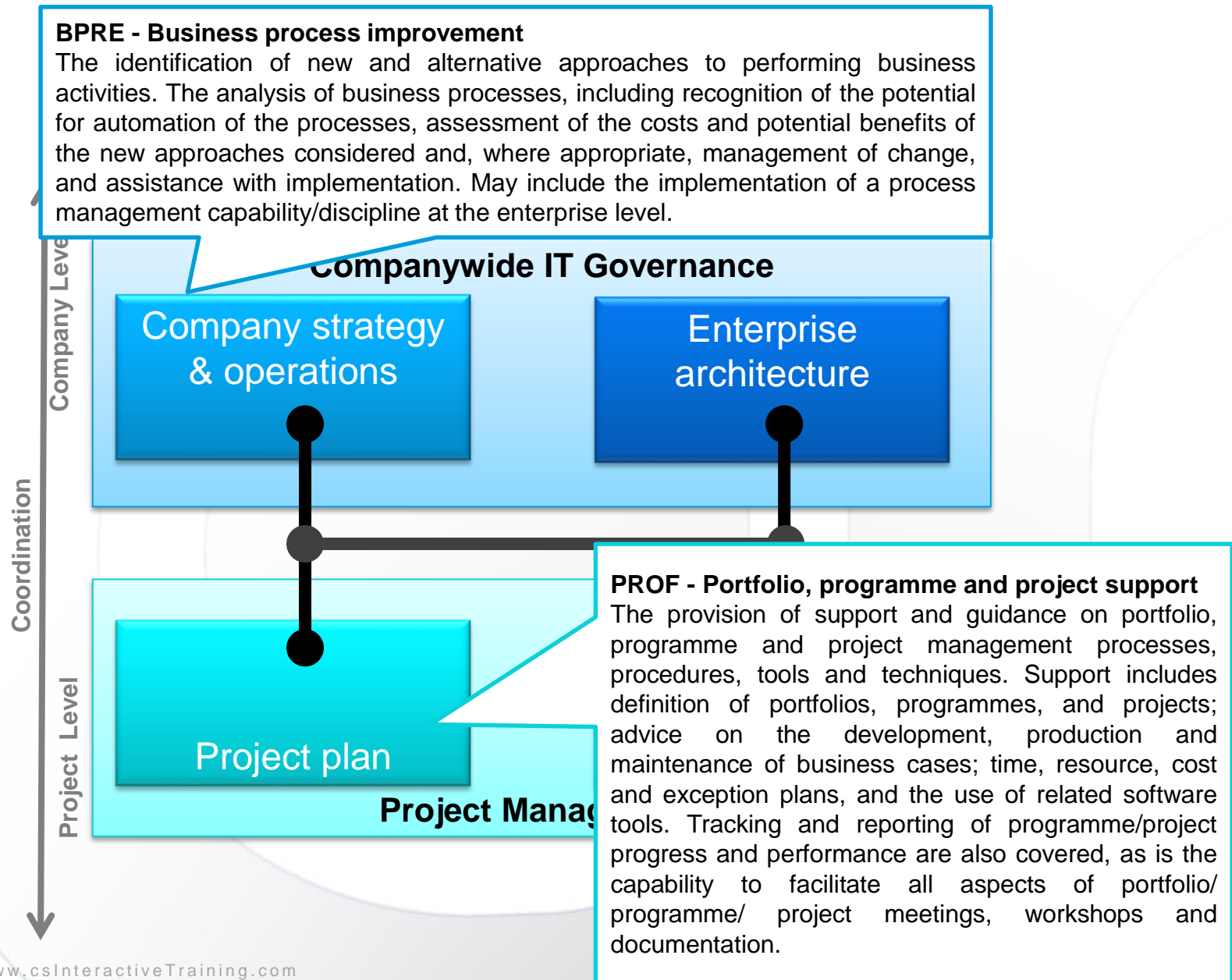


# SFIA Skills mapped to the IT Engagement Model

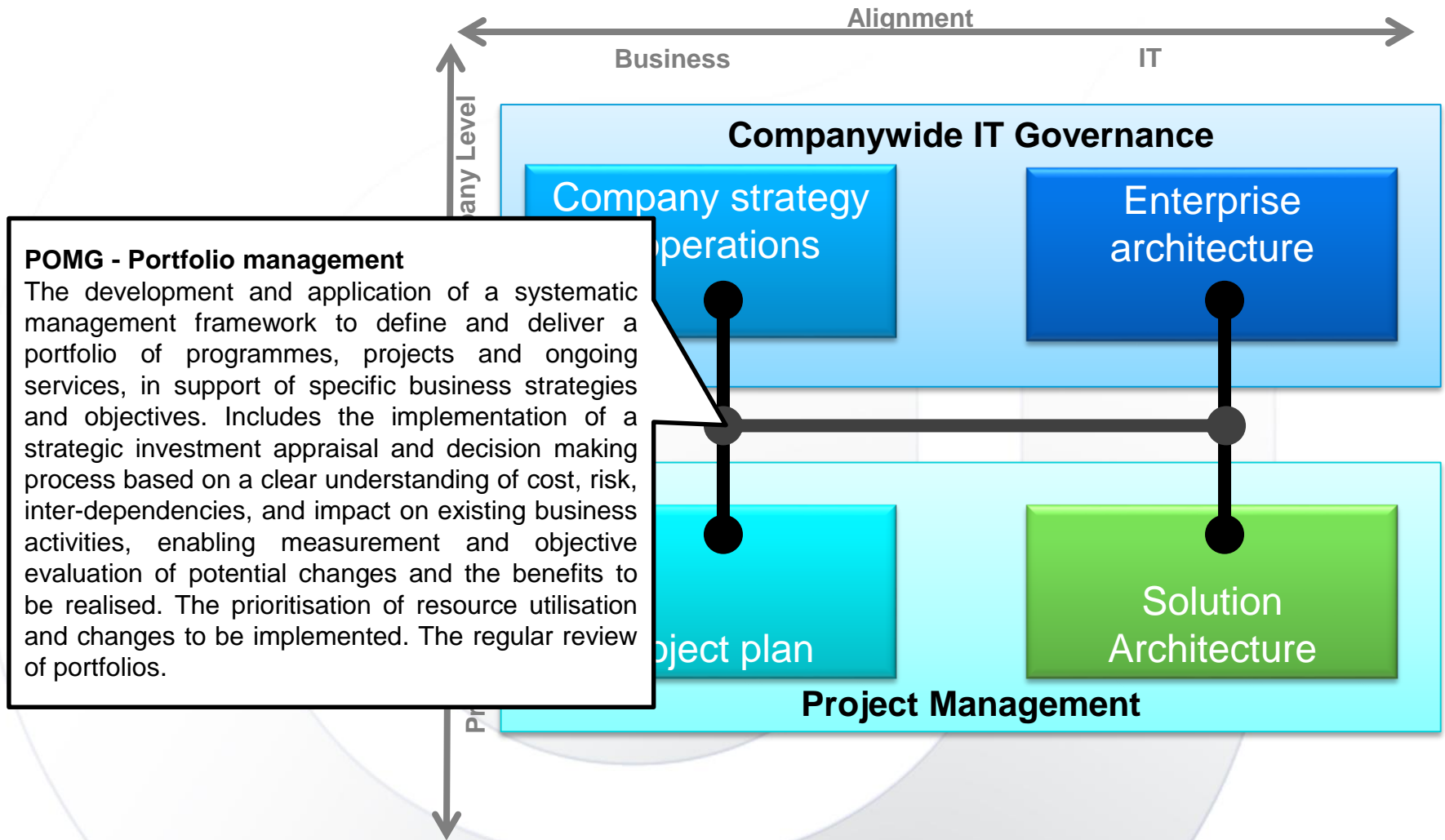




# SFIA Skills mapped to the IT Engagement Model



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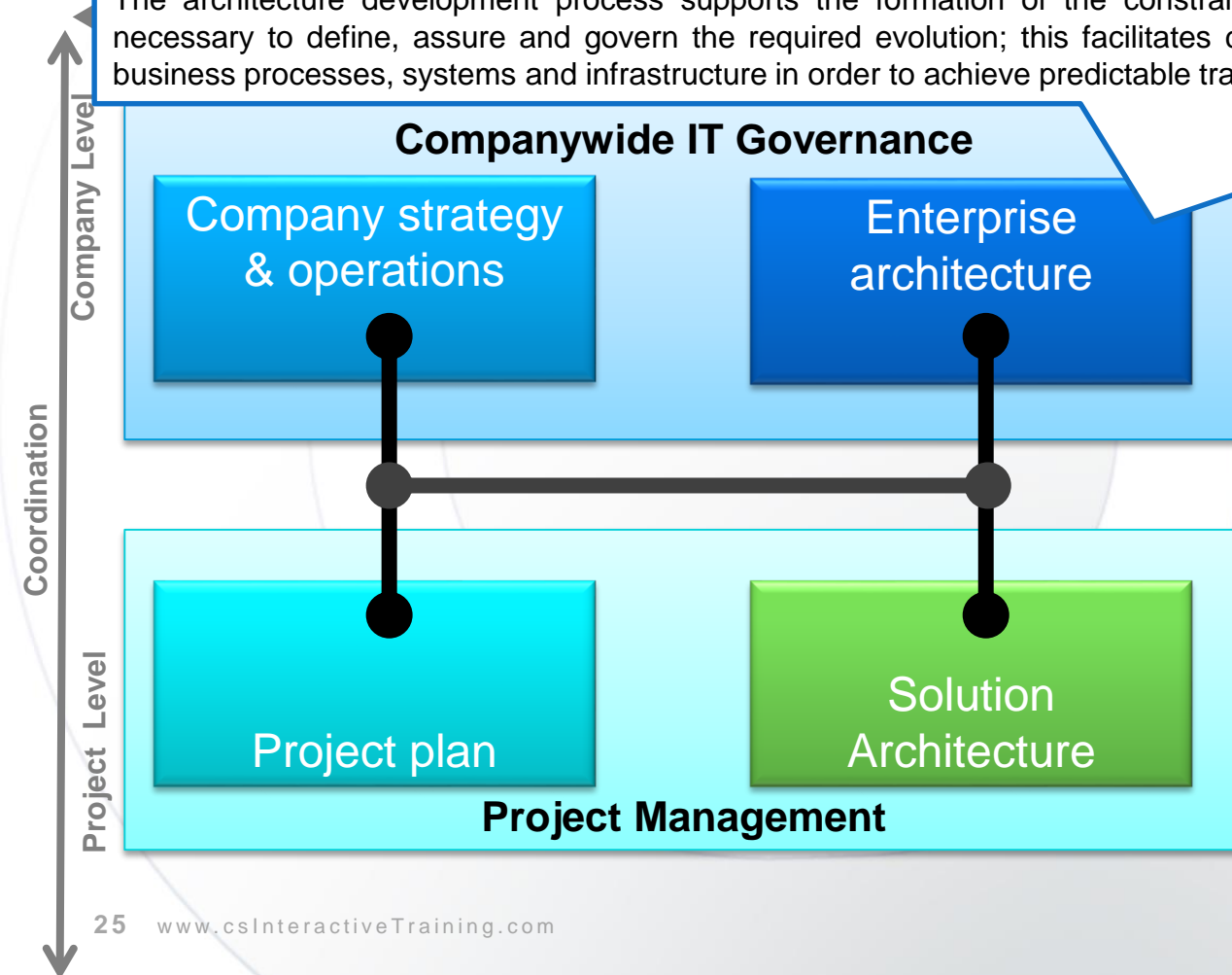


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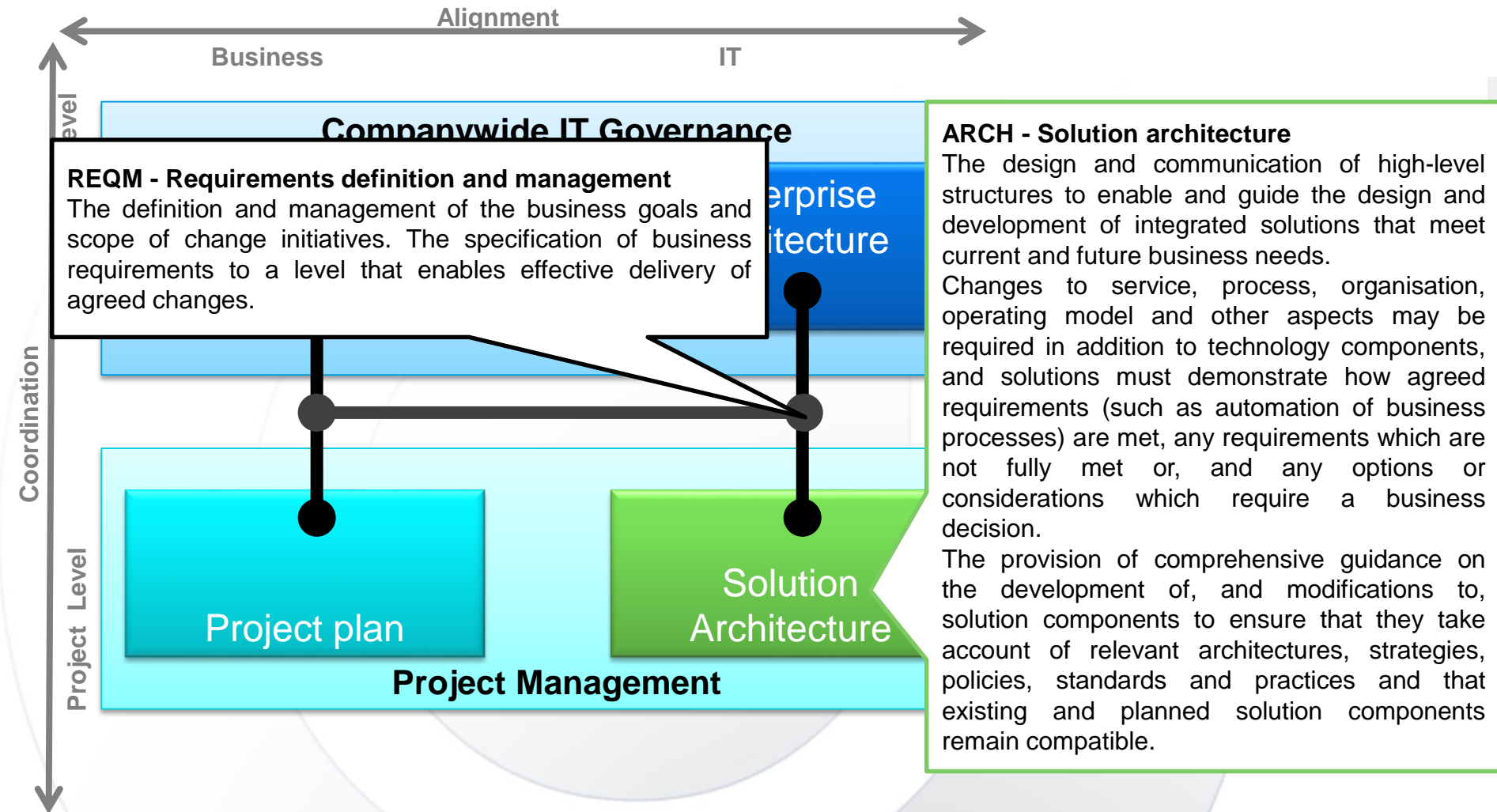
## STPL - Enterprise and business architecture development

The creation, iteration, and maintenance of structures such as enterprise and business architectures embodying the key principles, methods and models that describe the organisation's future state, and that enable its evolution. This typically involves the interpretation of business goals and drivers; the translation of business strategy and objectives into an "operating model"; the strategic assessment of current capabilities; the identification of required changes in capabilities; and the description of inter-relationships between people, organisation, service, process, data, information, technology and the external environment.

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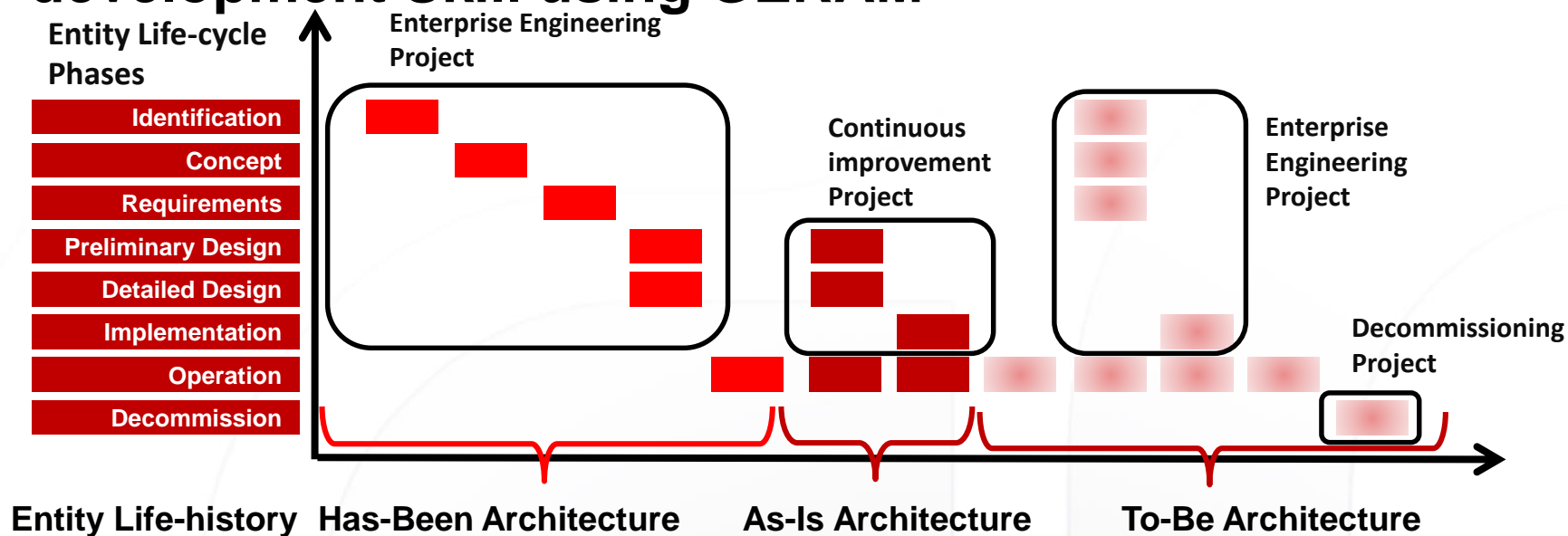
# SFIA Skills mapped to the IT Engagement Model



# SFIA - Enterprise and business architecture development (STPL)

- The creation, iteration, and maintenance of structures such as enterprise and business architectures embodying the key principles, methods and models that describe the organisation's future state, and that enable its evolution.
- This typically involves the interpretation of business goals and drivers; the translation of business strategy and objectives into an “operating model”; the strategic assessment of current capabilities; the identification of required changes in capabilities; and the description of inter-relationships between people, organisation, service, process, data, information, technology and the external environment.
- The architecture development process supports the formation of the constraints, standards and guiding principles necessary to define, assure and govern the required evolution; this facilitates change in the organisation's structure, business processes, systems and infrastructure in order to achieve predictable transition to the intended state.

# Unpacking the Enterprise and business architecture development Skill using GERAM



Identifies concepts of enterprise integration

Employs a method to describe process of enterprise engineering

Reference reusable models and designs of human roles, processes and technologies

Define the meaning of enterprise modelling constructs

Implement models in Enterprise Engineering Tools

Utilise Enterprise Modelling Languages



**Architect**



# Open Badges



# Using Open Badges to implement the skill

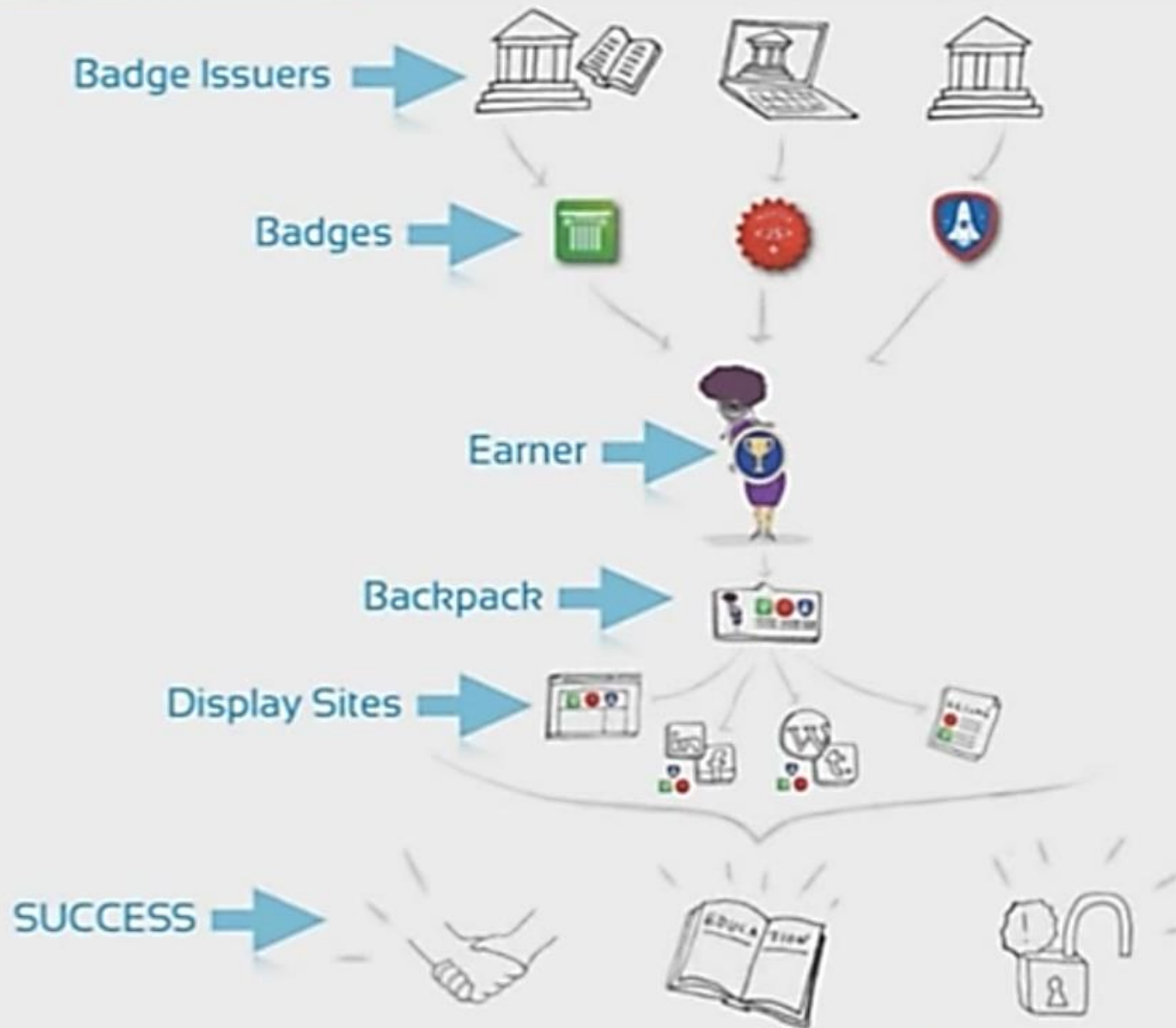
- Learning happens everywhere.
- No single institution can prepare someone.
- Skills and achievements that happen online or outside the classroom don't always get recognised.
- We need a connected ecosystem of learning.
- Open Badges : an initiative to solve that problem, allowing any organisation to
  - issue,
  - manage and
  - display
  - digitalbadges across the web.



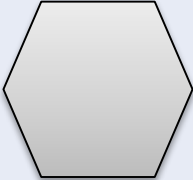

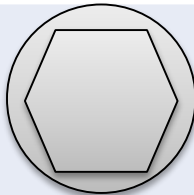
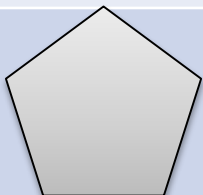

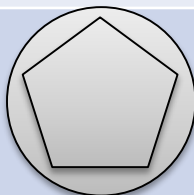
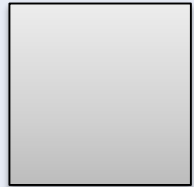
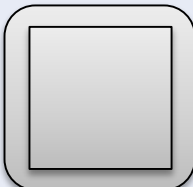
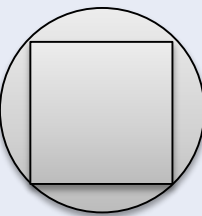
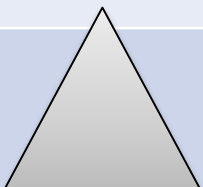


# Open Badges

- A single credential demonstrating a skill, achievement, quality or affiliation
- Digital badges: electronic credential
- Open Badges: electronic credential and MORE...
- The value of Open Badges comes from the information (metadata) attached to it!
- “Open” Standard
  - The standard is adopted and maintained by a not-for-profit organisation (Mozilla and MacArthur Foundation)
  - *Application Independence*: Access to resources is not dependent on a single application.
  - *Platform Independence*: Access to resources is not restricted to particular hardware platforms.
- Portable / transferable
- Information Rich
  - Verifiable

# Open Badge Ecosystem









# Open Badges Framework for Occupations

ISCO-08 Occupations	Skill Level	Education Required	Skill Specialisation		
			Field of knowledge	Tools and machinery	Kinds of goods and services produced
1 – Managers, senior officials and legislators, 2 – Professionals	4	6 - Second stage of tertiary education 5a - First stage of tertiary education, 1st degree			
1 – Managers, senior officials and legislators, 3 - Technicians and associate professionals	3	5b - First stage of tertiary education (short or medium duration)			
4 - Clerks 5 - Service and sales workers 6 - Skilled agricultural and fishery workers 7 - Craft and related trades workers 8 - Plant and machine operators, and workers Assemblers	2	4 - Post-secondary, non-tertiary education 3 - Upper secondary level of education 2 - Lower secondary level of education			
9 - Elementary occupations	1	1 - Primary level of education			

# Conclusion

# Example set of Open Badges for Enterprise Architect

ISCO-08 Occupations	Skill Level	SFIA Skill	Skill Specialisation		
			Field of knowledge	Tools and machinery	Kinds of goods and services produced
Enterprise Architecture Professional	4	STPL - Enterprise and business architecture development	   		

# Questions & Answers