Extreme Architecture:
A Minimalist IT Architecture Framework
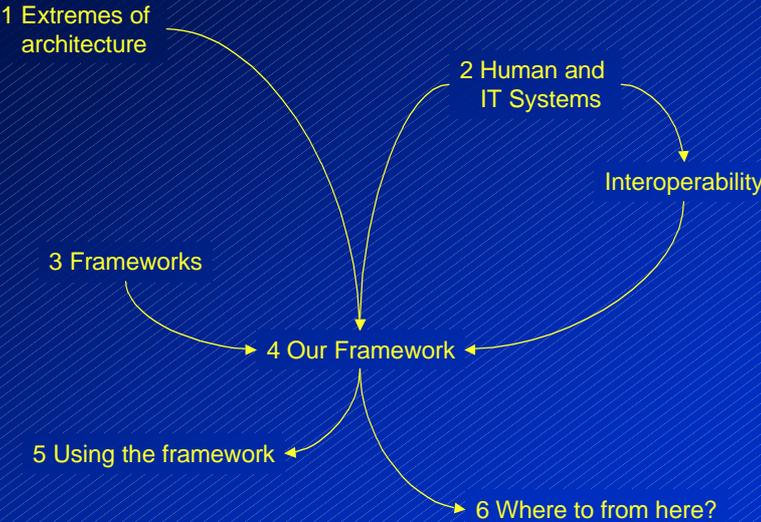
Phil Robinson

and

Floris Gout

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Content

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3 Frameworks

4 Our Framework

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"I Keep Six Honest ..."

I keep six honest serving-men
(They taught me all I knew);
Their names are What and Why and When
And How and Where and Who.

... ...

Rudyard Kipling

Information governance seeks to answer...

- **What** are the (information management) things that are important to an IT provider?

- **How** does the IT provider service these things?

- **Where** are these things managed and serviced?

The scope for today's discussion

- **Who** is involved in governance, management, and provision of the services?

- **When** do things of significance occur for the IT provider?

- **Why** does the provider undertake this work in the chosen manner?

What is Architecture? Macquarie

noun **1.** the art or science of building, including plan, design, construction, and decorative treatment. **2.** the style of building. **3.** the action or process of building; construction. **4.** a building or buildings. **5.** the structure or design of something, as a computer, a novel, etc. [Latin]
--**architectural**, *adjective*
--**architecturally**, *adverb*

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Architecture and Design

- If you can implement a drawing in more than one way, you have *architecture*.

- If you can implement a drawing in only one way, then the drawing contains exact specifications for instantiation, and you have a *design*.

  * Jim Sinur of Gartner Group

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Reims Cathedral: Architecture at a peak.

Cathedral and IT Architecture?

- Jean d'Orbais ... conceived the general plan of the building, a plan which was respected ... by his successors. This is one of the reasons for the extreme coherence and unity of the edifice.

  *   Brooks quoting the Reims Cathedral Guidebook

- It took 8 generations of builders, 200 years, to complete. They all stuck to the design.

- Fred Brooks was an early author to make comparisons between building architecture and software.
  * Mythical Man-Month (1975)

- Does IT have chance to build conceptual integrity with such precision and passion? Should it?

The story of a hut.

This hut was built on time and within cost.

It has shown an excellent return on investment for its owner.

For a hut, it provides all the services the owner requires.

The hut is cleaned and maintained in a timely manner.

The padlock on the door ensures that the hut is secure.

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Are the things we build, shanty towns?

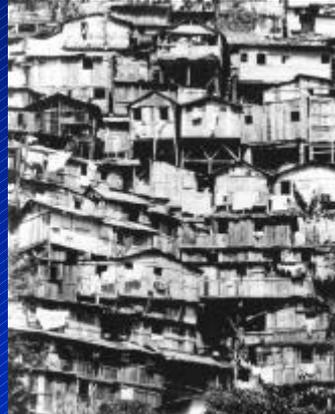With today's pressures how hard is it for IT to avoid the shanty town?

- IT is frequently asked to do more with less;
- IT lives in constant fear of fires, eviction, mudslides and plague;
- IT needs to build things as quickly and as cheaply as possible;
- IT are shown little respect and are not valued by the community;
- IT are seen as a blight on the landscape; and
- Everyone wishes that IT and their problems would simply disappear.

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The extremes of architecture. Which way?

Hierarchy of Systems

Industry Sector

Enterprise

Business Process

Application

Component

Human Activity Systems

Software Systems
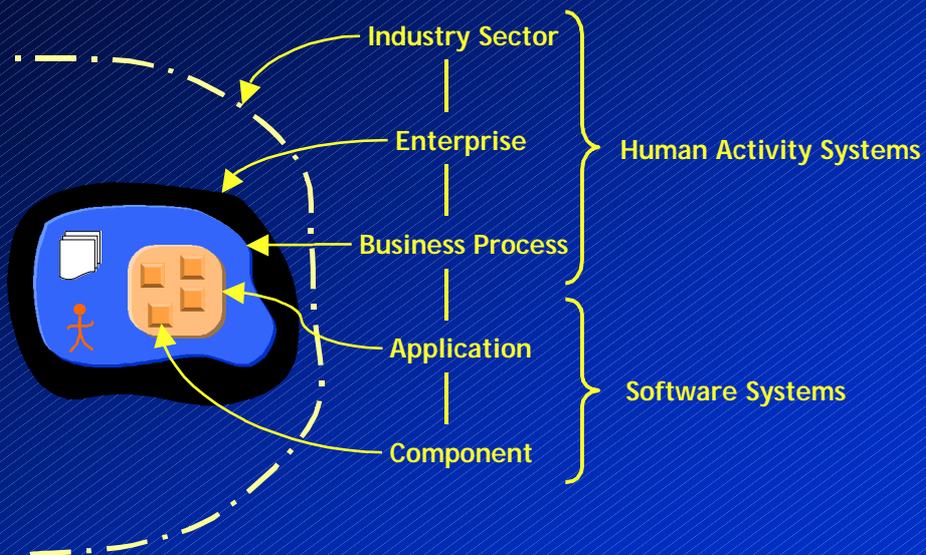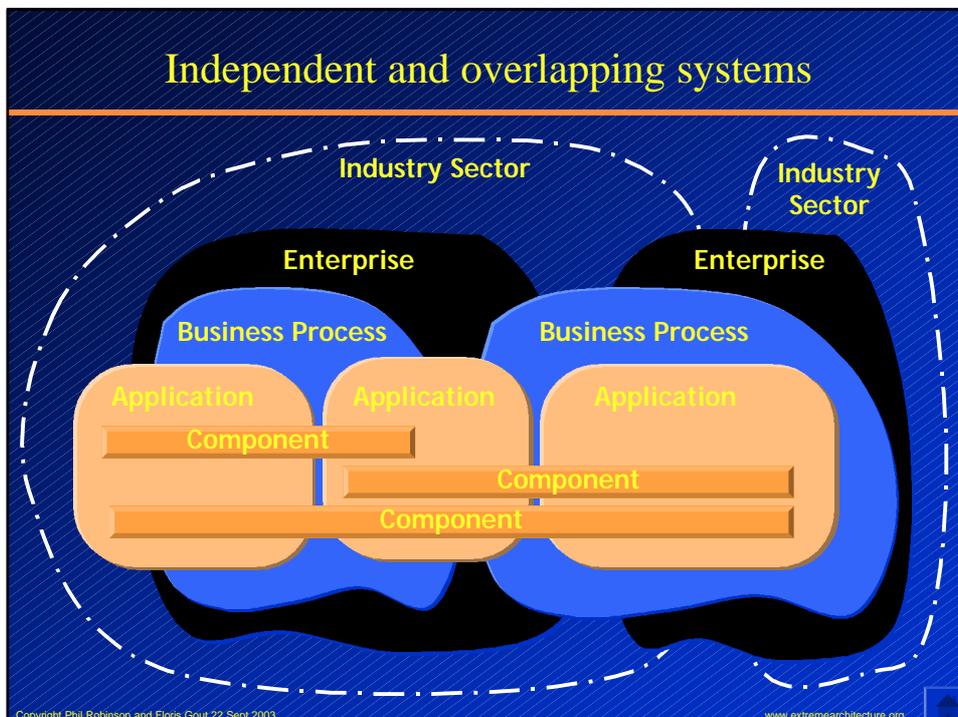
Is the container view of systems correct?

- Common for business processes to be outsourced.

- External stakeholders interact directly with enterprise's software applications.

- Modern development techniques emphasise reuse of software components.
  * The notion of an application is blurred.

Independent and overlapping systems

What is the architectural driver here?

Interoperability!
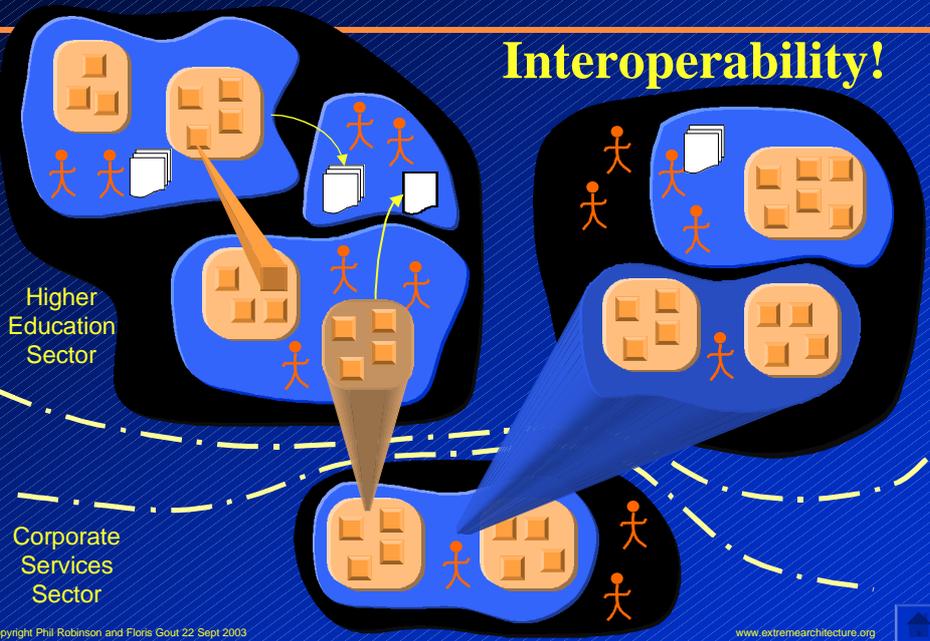
Higher Education Sector

Corporate Services Sector

Spot the difference?
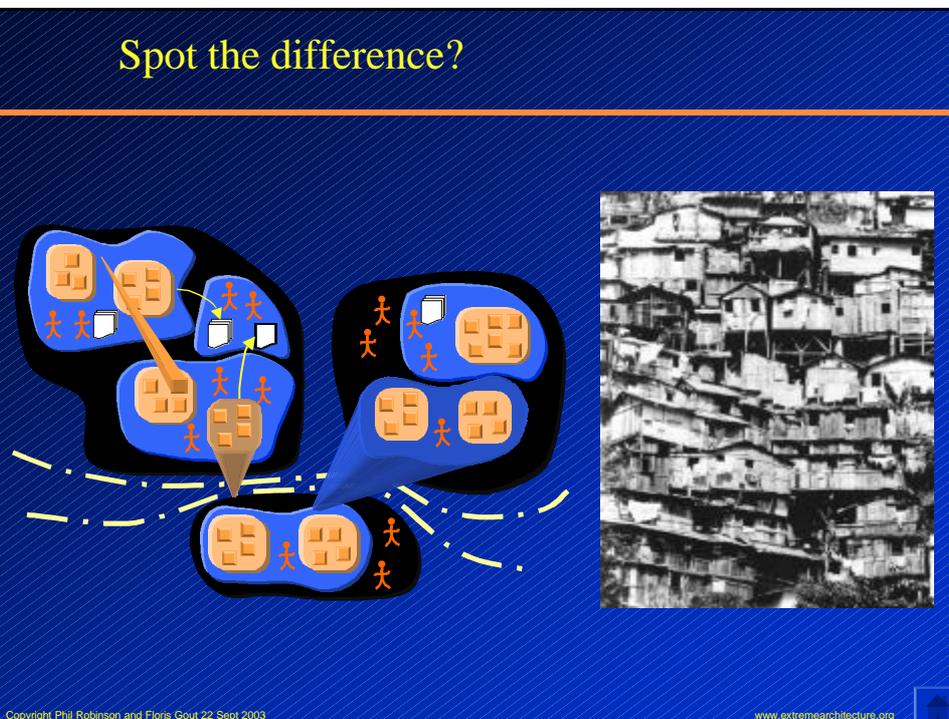
Interoperability for unforeseen events

- What interoperability is required
  between road transport systems and
  aviation systems?

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Other versions of interoperability (and re-use)

Country Gripen www.extremearchitecture.org

Systems ® Interoperability ® Frameworks

- If we want to ensure interoperability in abstract and seemingly intangible artefacts
  - * Read "information systems"

- Then we need a framework to make sure all players understand how to achieve that interoperability.

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What is a framework: Macquarie

/ *noun* **1.** a structure composed of parts fitted and united together. **2.** a structure designed to support or enclose something; frame or skeleton. **3.** frames collectively. **4.** work done in, on, or with a frame.

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Frameworks of Gustave Eiffel
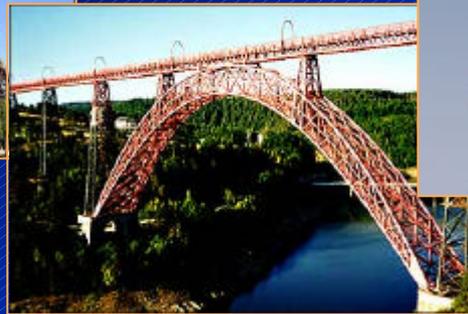
1886

Le Tower 1889

Garabit Viaduct 1884

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An Information Technology Architecture Framework is:

Defined in Clinger-Cohen Act;

Legislation passed in 1996 by the United States Congress.

"An integrated framework for evolving or maintaining existing information technology and acquiring new information technology to achieve the agency's strategic goals and information resource management goals."

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Some enterprise and technical frameworks
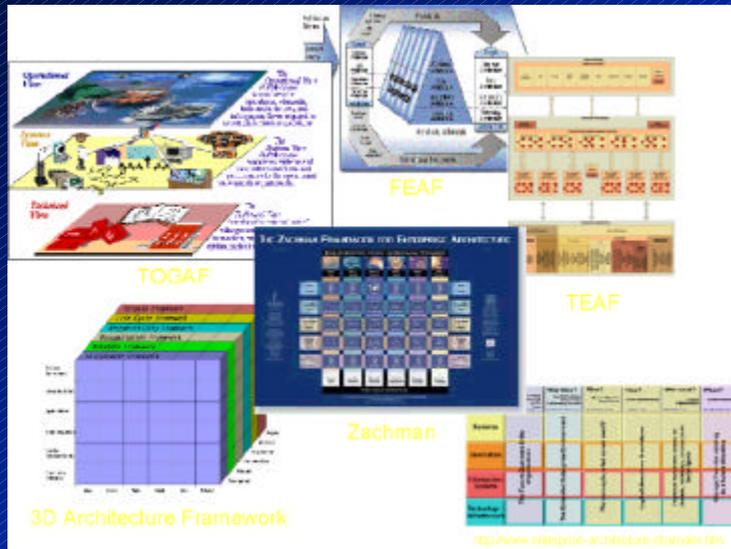
Office of Management and Budget (OMB)

Enterprise Architecture

Activity | Information | Software | Data | Technology

Technical Reference Model

Standards Profile

Framework Structure

	Activity	Information	Software	Data	Technology
Sector					
Enterprise					
Process		Architecture Content			
Application					
Component					

System Types

Sub Architectures

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Current and future states of the Architecture

	Activity	Information	Software	Data	Technology
Sector					
Enterprise					
Process		Assessments (SWOT)			
Application		Risk or Reward			
Component					

	Activity	Information	Software	Data	Technology
Sector					
Enterprise		Architecture Vision			
Process					
Application		Architecture Principles			
Component					
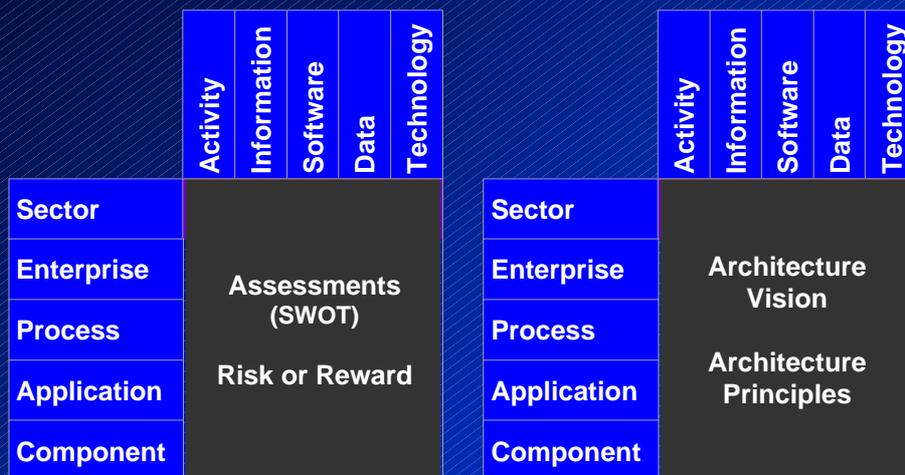
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The Enterprise Architecture

	Activity	Information	Software	Data	Technology
Sector	Scope Activities Workflow	Subject Areas Information Requirements	Functional Areas	Business Objects	Platforms Networks
Enterprise					
Process					
Application	Use Cases	Interface Requirements	Vision Functional Requirements Non-Functional Requirements	Storage Requirements	
Component	User Interface		Architecture Code Test Cases	Schemas	

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Why Extreme?

- Pragmatic
  * adopts a 'middle path' between the extremes of chaos and perfection.
- Easy to describe
  * single 6 x 6 matrix
- Minimal work products
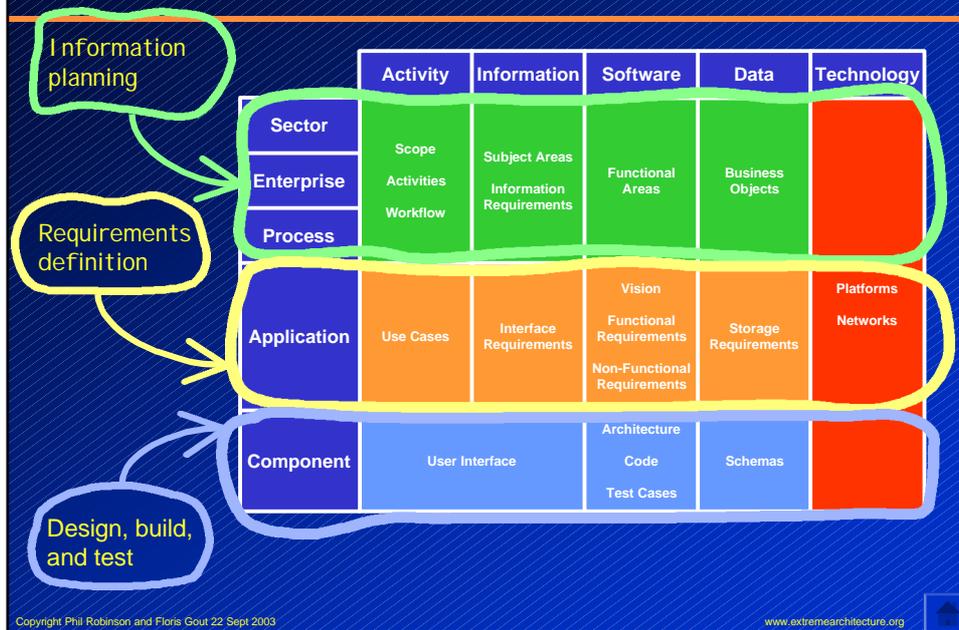 * simple bullet point lists will do!
- Unifies disparate disciplines
  * Business modelling
  * Requirements analysis
  * Software construction
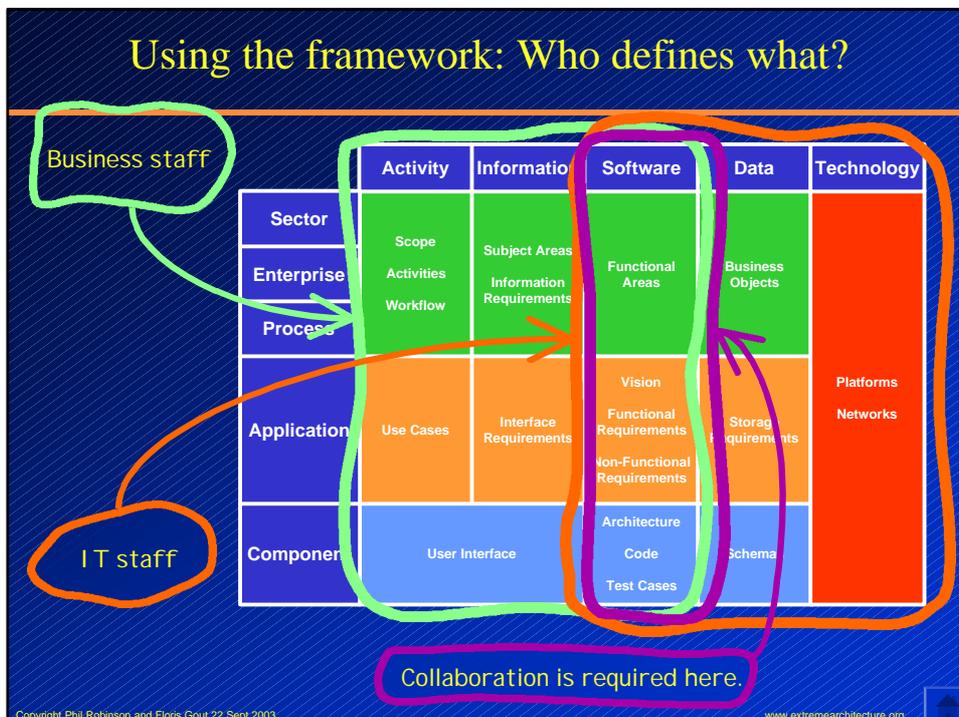 * IT infrastructure management

- Encourages a shared understanding

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Using the framework: What is produced when?

	Activity	Information	Software	Data	Technology
Sector / Enterprise / Process	Scope, Activities, Workflow	Subject Areas, Information Requirements	Functional Areas	Business Objects	
Application	Use Cases	Interface Requirements	Vision, Functional Requirements, Non-Functional Requirements	Storage Requirements	Platforms, Networks
Component	User Interface		Architecture, Code, Test Cases	Schemas	

- Information planning
- Requirements definition
- Design, build, and test

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Using the framework: Who defines what?

	Activity	Information	Software	Data	Technology
Sector / Enterprise / Process	Scope, Activities, Workflow	Subject Areas, Information Requirements	Functional Areas	Business Objects	
Application	Use Cases	Interface Requirements	Vision, Functional Requirements, Non-Functional Requirements	Storage Requirements	Platforms, Networks
Component	User Interface		Architecture, Code, Test Cases	Schemas	

- Business staff
- IT staff
- Collaboration is required here.

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Avoiding the Extremes

Privileged

Abundant

Ordered

Self Reliant

Affordable

Pragmatic

Disenfranchised

Impoverished

Chaotic

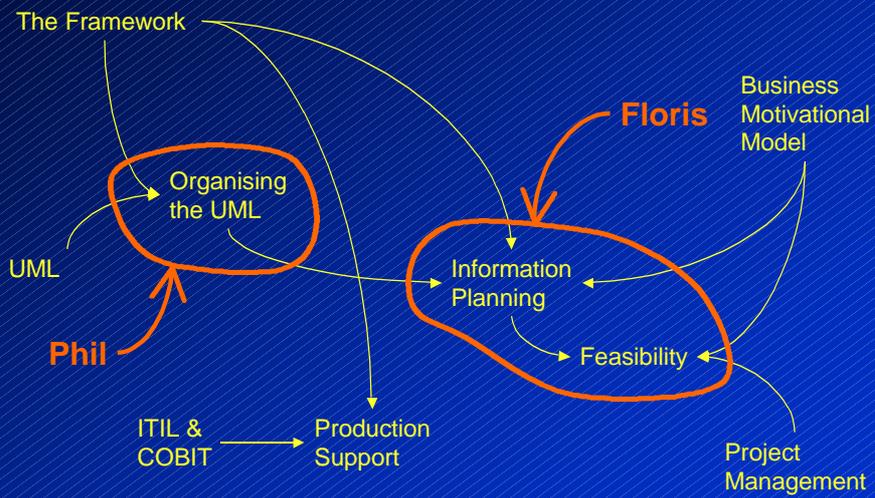Copyright Phil Robinson and Floris Gout 22 Sept 2003

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You never know!   **www.saab.se**

Suburban Gripen

Where to from here?

The Framework

Floris

Business
Motivational
Model

Organising
the UML

UML

Phil

Information
Planning

Feasibility

ITIL &
COBIT

Production
Support

Project
Management

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