Planning Technology Strategy in a Tough Economy

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Thales UK

IBM Aerospace & Defence Event
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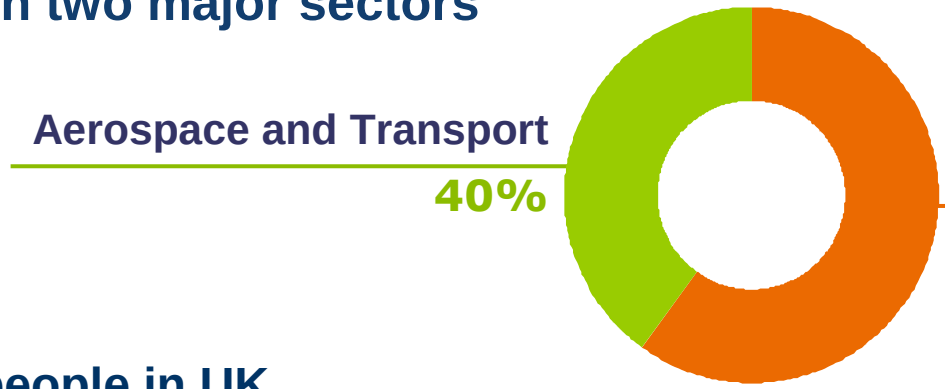
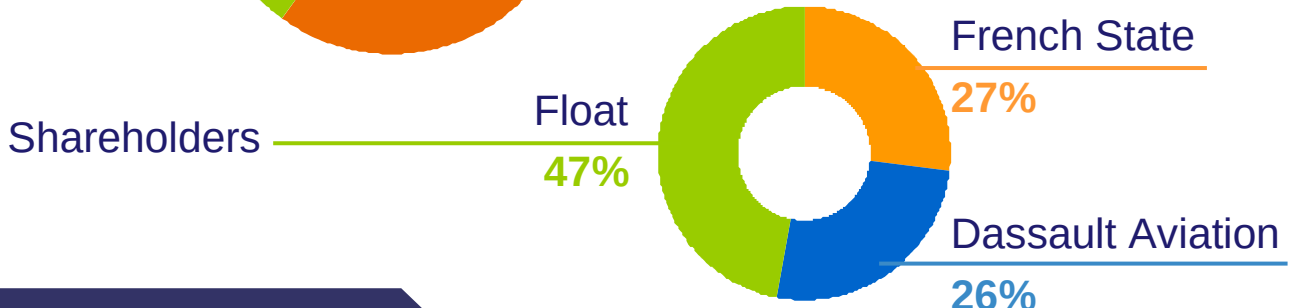
Thales - A technology leader providing safety and security

A global company with 68,000 employees and €13.1 billion in revenues

- **We help our customers to:**
  - Provide reliable and secure solutions
  - Monitor and control
  - Protect and defend
- **In two major sectors**



8000 people in UK across 35 sites



Thales: a reliable, long-term partner with operations in 50 countries

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Organisation

Executive Committee

Corporate functions
(Human Resources & Communications, Finance and Legal, Operations, Research & Technology, Strategy)

Countries

Focused on Customers

- Projects
- Programmes
- Customer satisfaction

3 geographical areas

Divisions

Focused on Markets

- Strategy
- Product policy
- Industrial organisation

7 divisions

- Defence & Security C4I Systems
- Air Operations
- Avionics
- Space
- Defence Mission Systems
- Land Defence
- Transportation Systems

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Defence: selected references

Presence on all types of platforms

Tiger combat helicopter pilot fitted with TopOwl helmet-mounted sight/ display.

Sensors and systems for UK's **Astute** submarines.

RBE2 radar for the **Rafale** omnirole combat aircraft.

FREMM multimission frigates are equipped with Herakles radar.

The **Hawkei** new-generation light armoured vehicle.

A400M's Flight Management System test bed.

Co-prime contractor in the UK **CVF** aircraft carrier programme.

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Defence: selected references

Systems

Syracuse III satellite communication system.

Flexnet, first Software Defined Radio available in the international market.

Watchkeeper UAV.

Communication and information system for **ISAF** tactical command headquarters in Afghanistan.

Sophie MF: a hand held example of range of reconnaissance equipment.

NATO's **ACCS LOC 1** air command and control system programme.

Equipments

Sonar 2087.

SAMP-T (*Sol-Air Moyenne Portée Terrestre*) surface-to-air missile system programme.

Ground Master 400 3D air defence radar.

Multi-function targeting pod **Damocles**.

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Security: selected references

Thales Hypervisor, a new supervision platform for large-scale critical infrastructure and major cities.

Security at Dubai and Doha airports.

Blue and green borders protection.

Banks and stock exchanges use Thales technologies to secure their transactions.

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Aerospace: selected references

Supplier of avionics systems to Airbus, Boeing, Dassault and other major aircraft manufacturers.

Simulators for all types of civil and military aircraft and helicopters.

In-flight entertainment and cabin systems for commercial aircraft.

TopDeck avionics suite for latest-generation helicopters.

Air traffic control centres.

Air traffic surveillance radar.

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Space: selected references

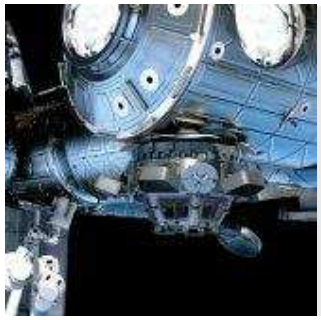
Telecommunications
Civil, military, dual-use
Geostationary Orbit Spacebus satellites:
Yamal 401 & 402, Arabsat 5C & 6B
Eutelsat W3C, W6A, W3D, Apstar 7,
Athena-Fidus, Sicral 2
Payloads:
Telkom3, Redsat, Arsat-1

Telecommunications
Civil - mobile

Low-Earth orbit constellations
Iridium Next, Globalstar, O3b

Earth Observation
Civil, Military, Dual-use

Meteosat 1st, 2nd & 3rd generations*;*
Helios, CSO, Pleiades, Cosmo
SkyMed, Sentinels



Orbital Infrastructures

International Space Station

Science

ExoMars, Herschel & Planck,
Corot

Navigation

EGNOS, Galileo

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Transport: selected references

Signalling systems for urban transport networks.

Operational Control Centres for rail networks.

Fare collection systems.

Signalling systems for main line rail.

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So what exactly is Thales UK?

- **Part of a huge international company**
  - So we need to be internationally coherent
- **A company with great depth and breadth in technology**
  - So we need to keep technologically current – or better!
- **A profit and loss centre**
  - So we need to be careful with costs
- **A company that needs to conduct lots of technology research**
  - There are never enough research funds
  - So we need to spend our R&T budget wisely
    - E.g. Reduce opportunities for duplication of effort

So – Thales UK is a system – part of a bigger system!

- **So we need to treat it like a system**
- **And institute change in a systematic way**

So What's the Challenge?

The Challenge – one year ago

- **Thales UK has many business entities**
  - In 2010 they became more coherent as a business set
    - So a more coherent business approach and management system was needed
    - So we needed more common practices across the board – including roadmapping
- **All TUK Companies are experts at roadmapping (so they say!) – but:**
  - They all did it differently
  - To different standards and using different tools
  - They didn't want to change – their way was best!
  - There was no easy way of aggregating data across companies
  - Nobody had the big picture
  - It was a nightmare to update
  - Decision criteria may be different
- **R&T investment agreements need to be rationalised by:**
  - Business/Domain/Country/Division/Group
- **And some of it is UK classified**

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The Roadmapping Project

2010 – decision taken to introduce product/technology roadmapping across Thales UK:

- To a common standard
- With a common tool
- Within a year
- Initially to support R&T investment decisions

Must be a seamless part of the greater system

- Assumes there is a “greater system”!
  - Business processes
  - Financial processes
  - Technology processes
  - IT networks
  - Security systems
  - And others……..

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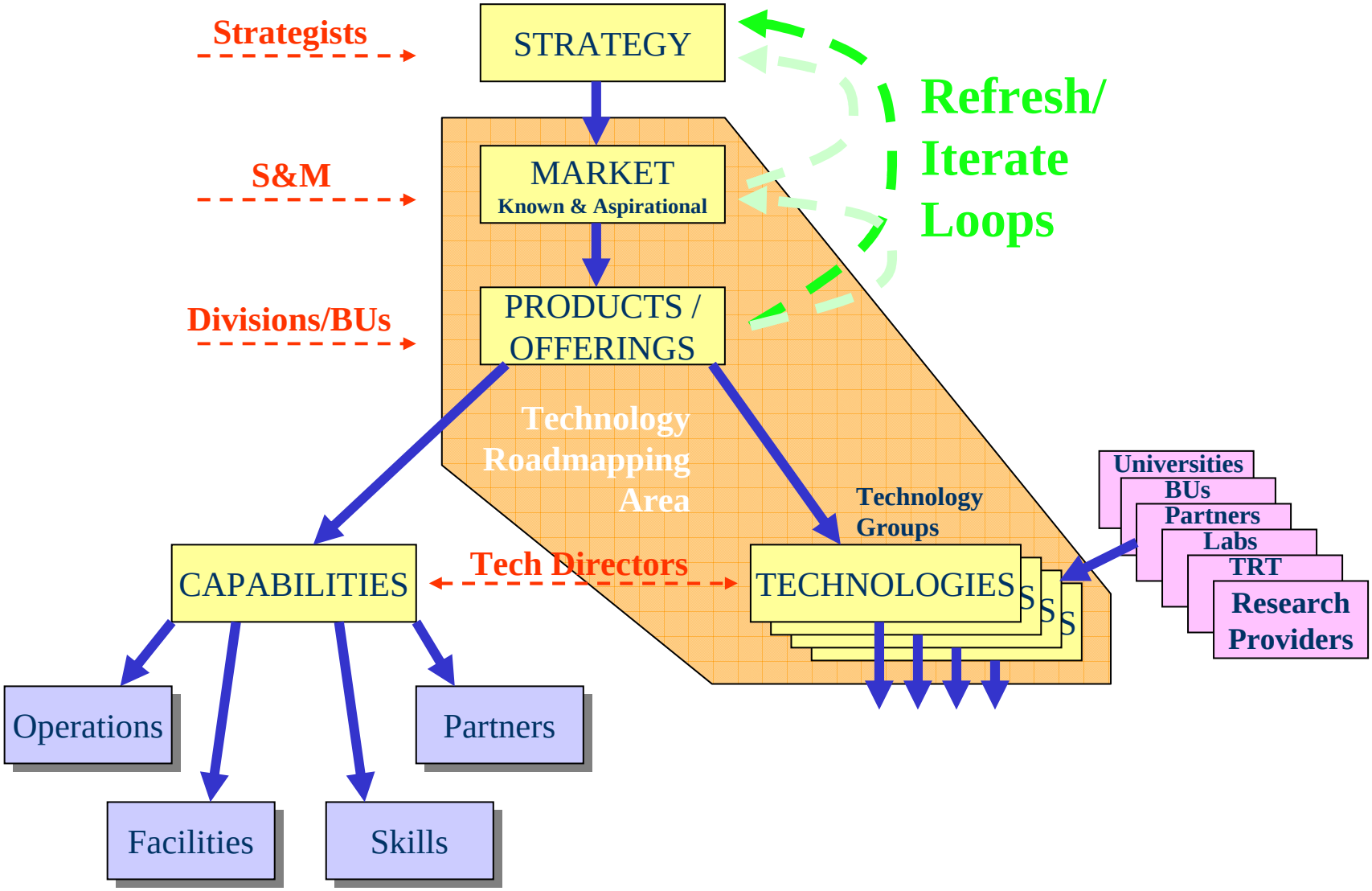
The Roadmap Area



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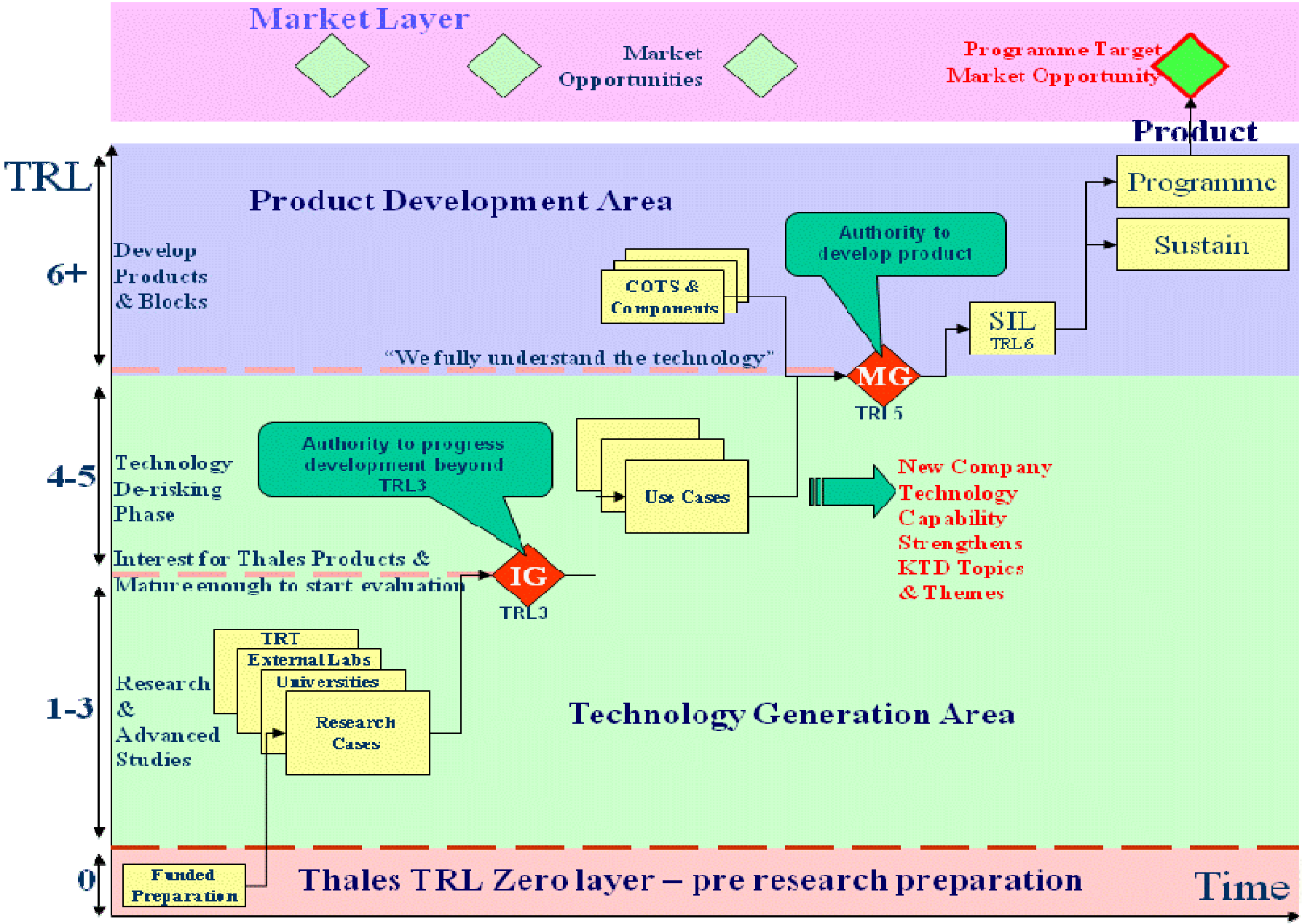
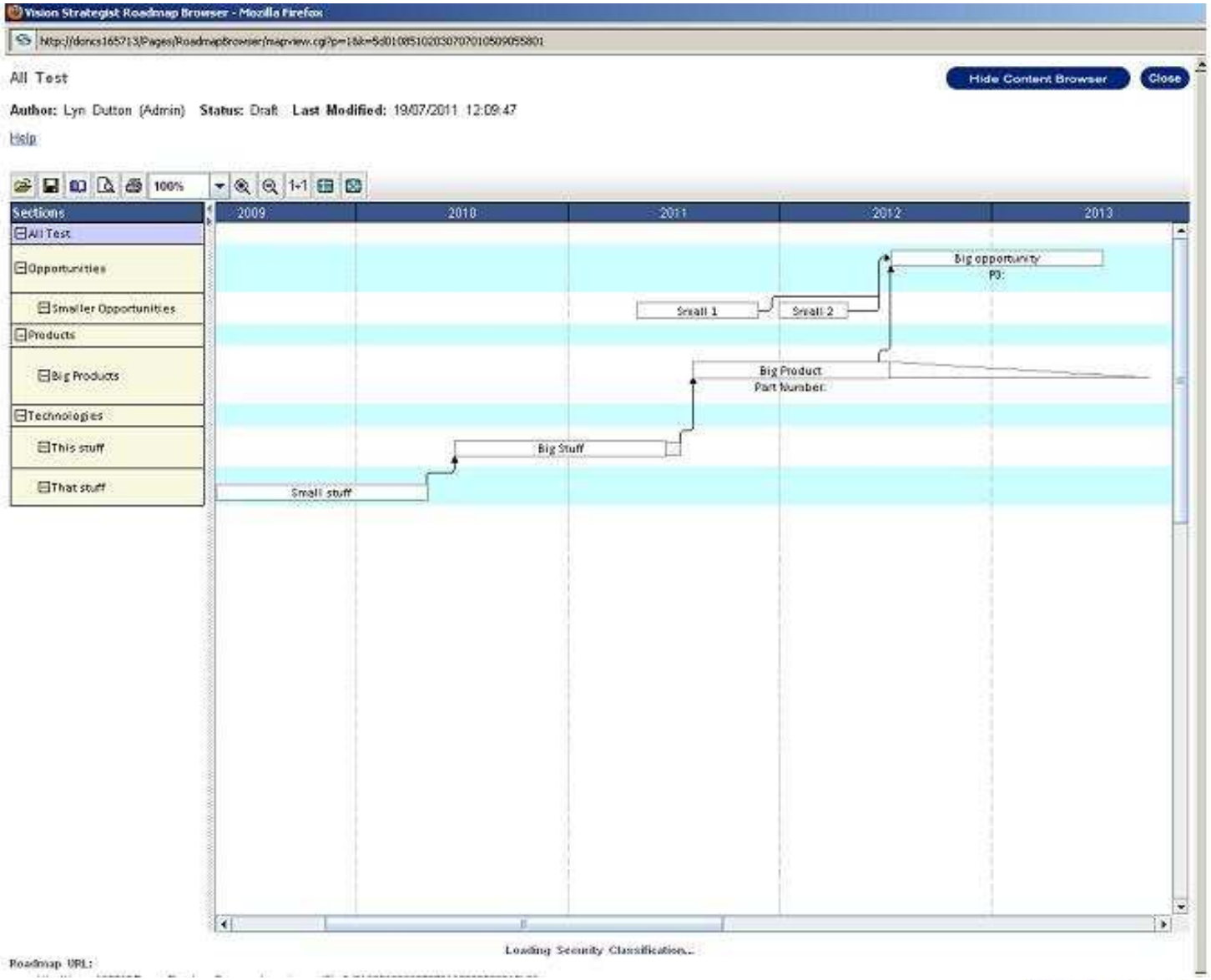
Thales Boulevard



Roadmap Visualisation



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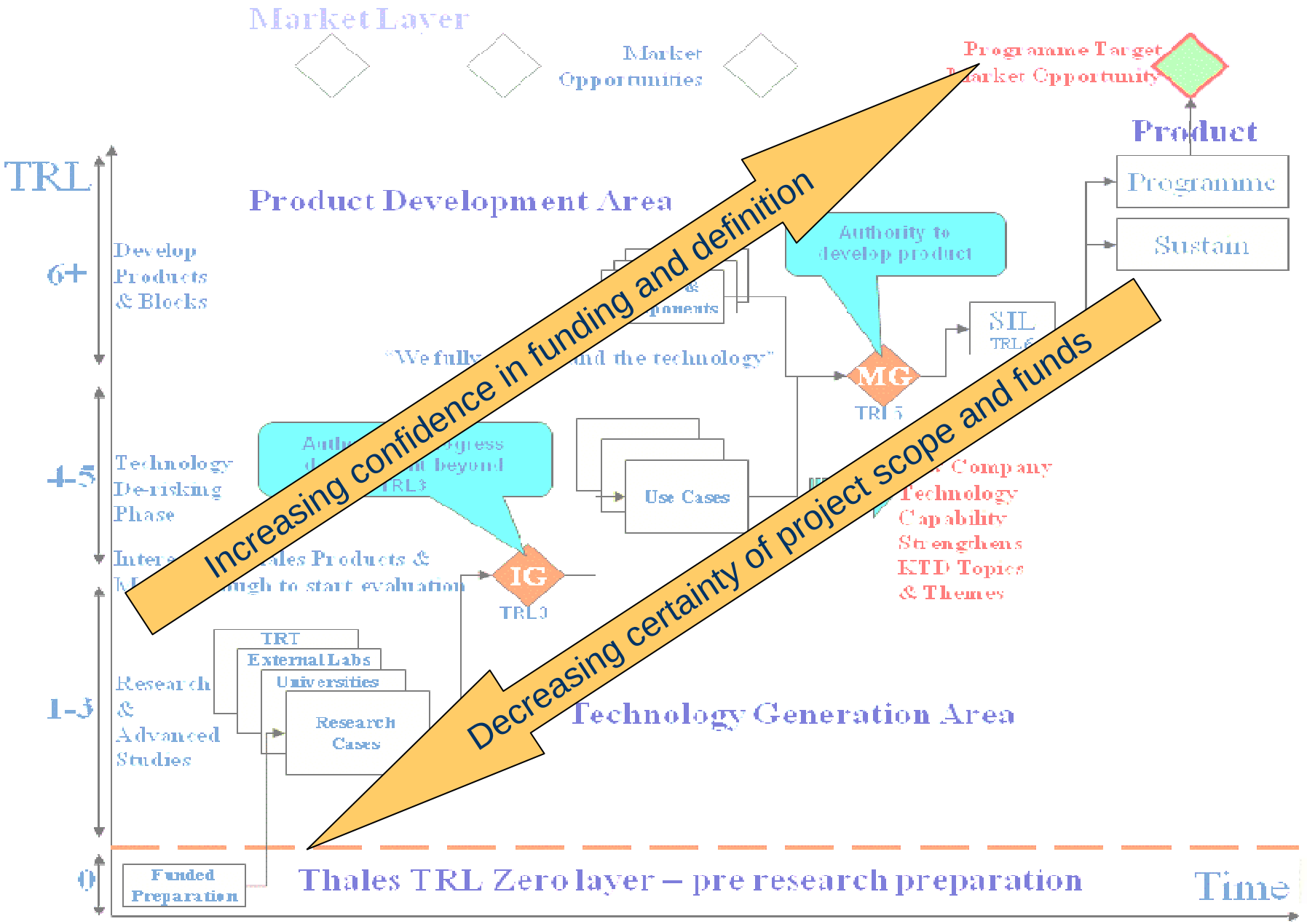

How does Focal Point support the Process?

IBM Rational's Product Portfolio Management Tool

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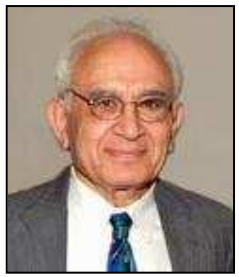
The right data in the right tool

Keep uncertain data (research themes, topics, providers, funding) in a separate tool

Elaborate the unknowns until you are happy to present

Map the research topics to the strategy roadmap

Get buy-in from the parent Business Unit(s)



Thomas Saaty

Kevin Ryan

Joachim Karlsson

Prioritise the research topics:

- Until scope matches funding
- Use Saaty's AHP
- Use visualisations to further underpin BU buy-in

Glue the chosen programmes into the roadmaps

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Binary Comparison Matrix

	Idea1	2	3	4	5	6	7	8	9	10
1		2	4	1						
2			2	0.5						
3				0.2	...					
4				5						
5										
6										
7										
8										
9										
10										

Saaty: n(n-1)/2 comparisons
Ryan: Added 2nd dimension costs vs value
Karlsson: clever engine to reduce comparisons to ~2n

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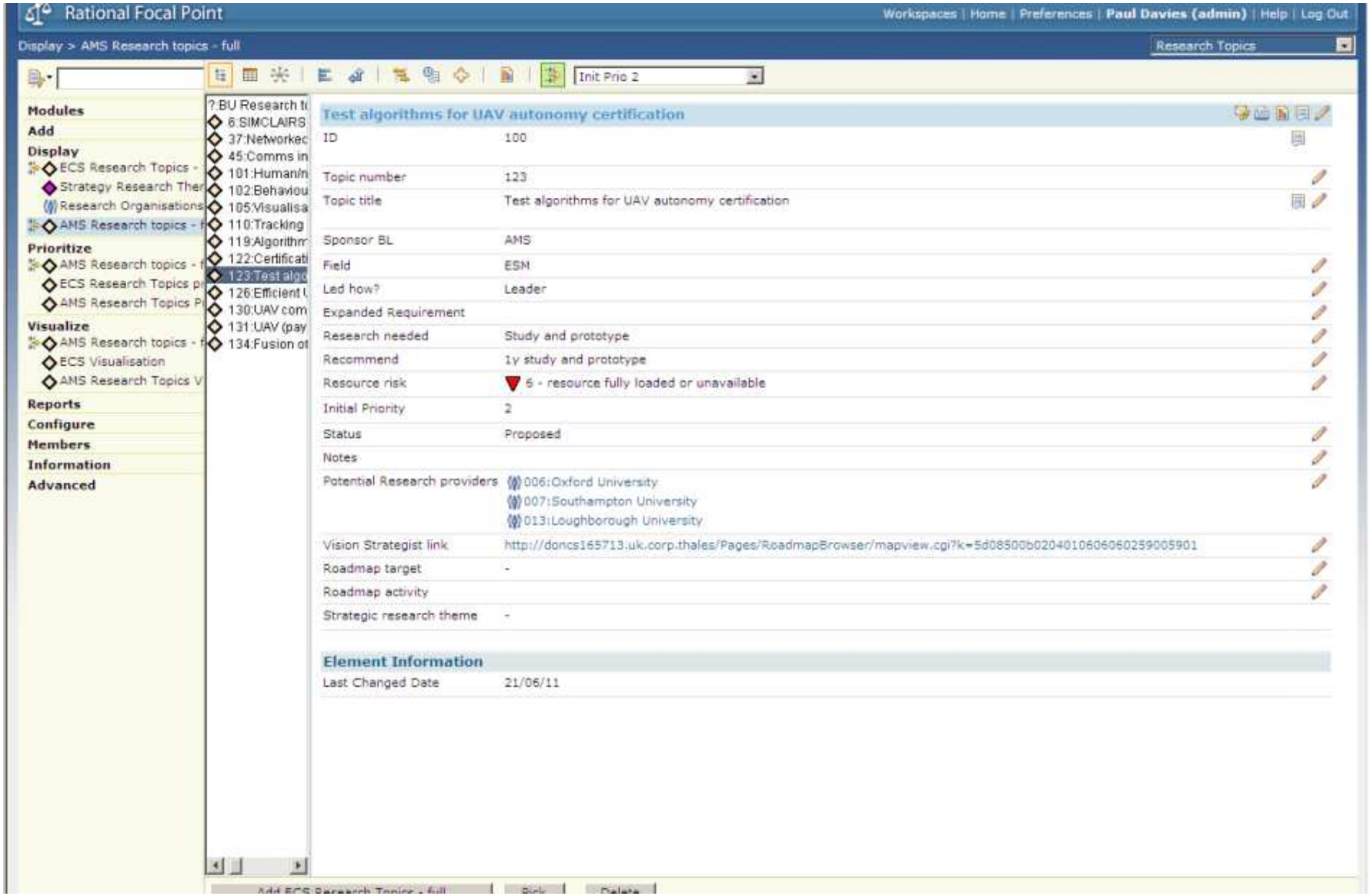
Research Themes



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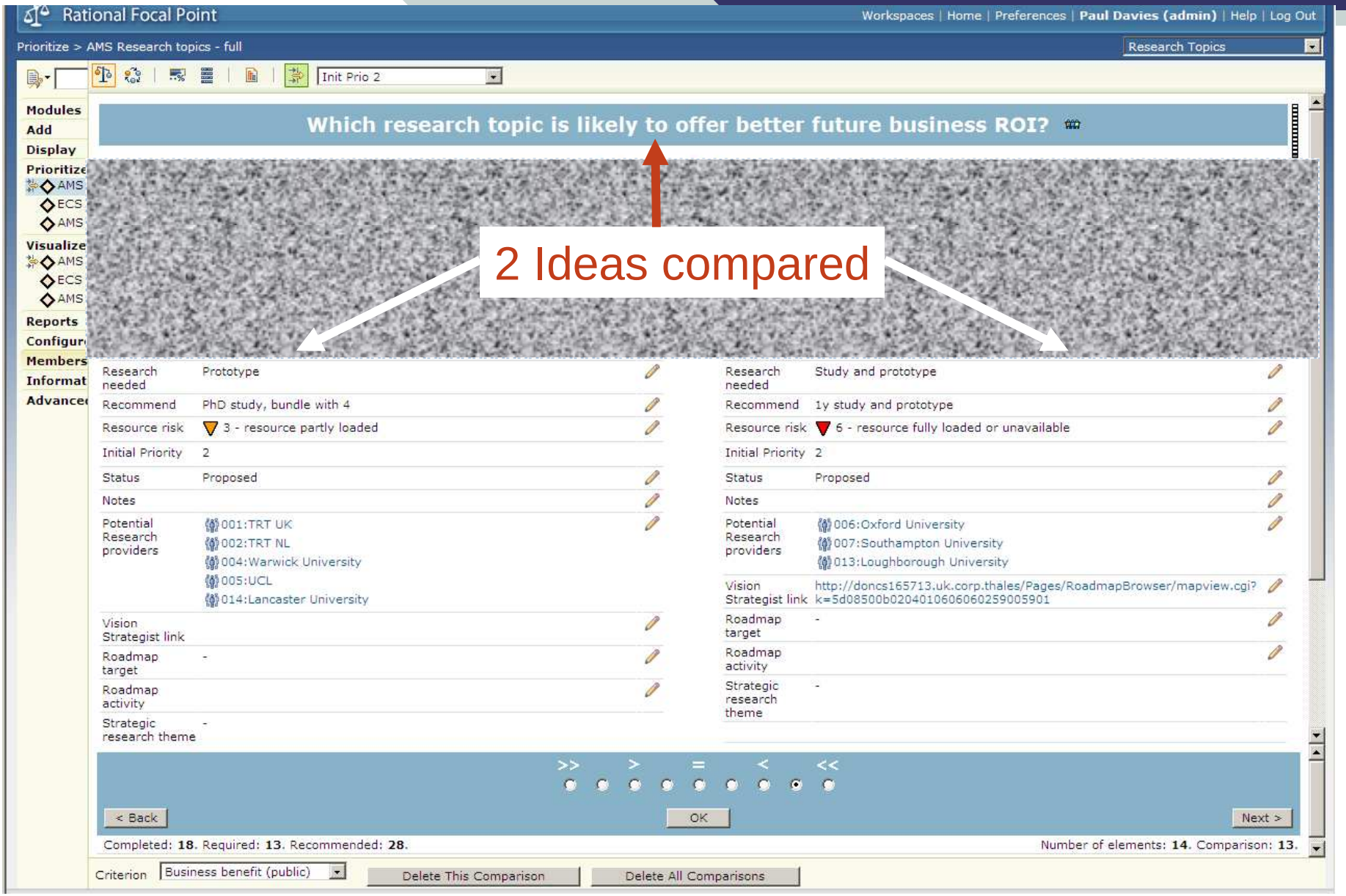
Pairwise comparison of topics



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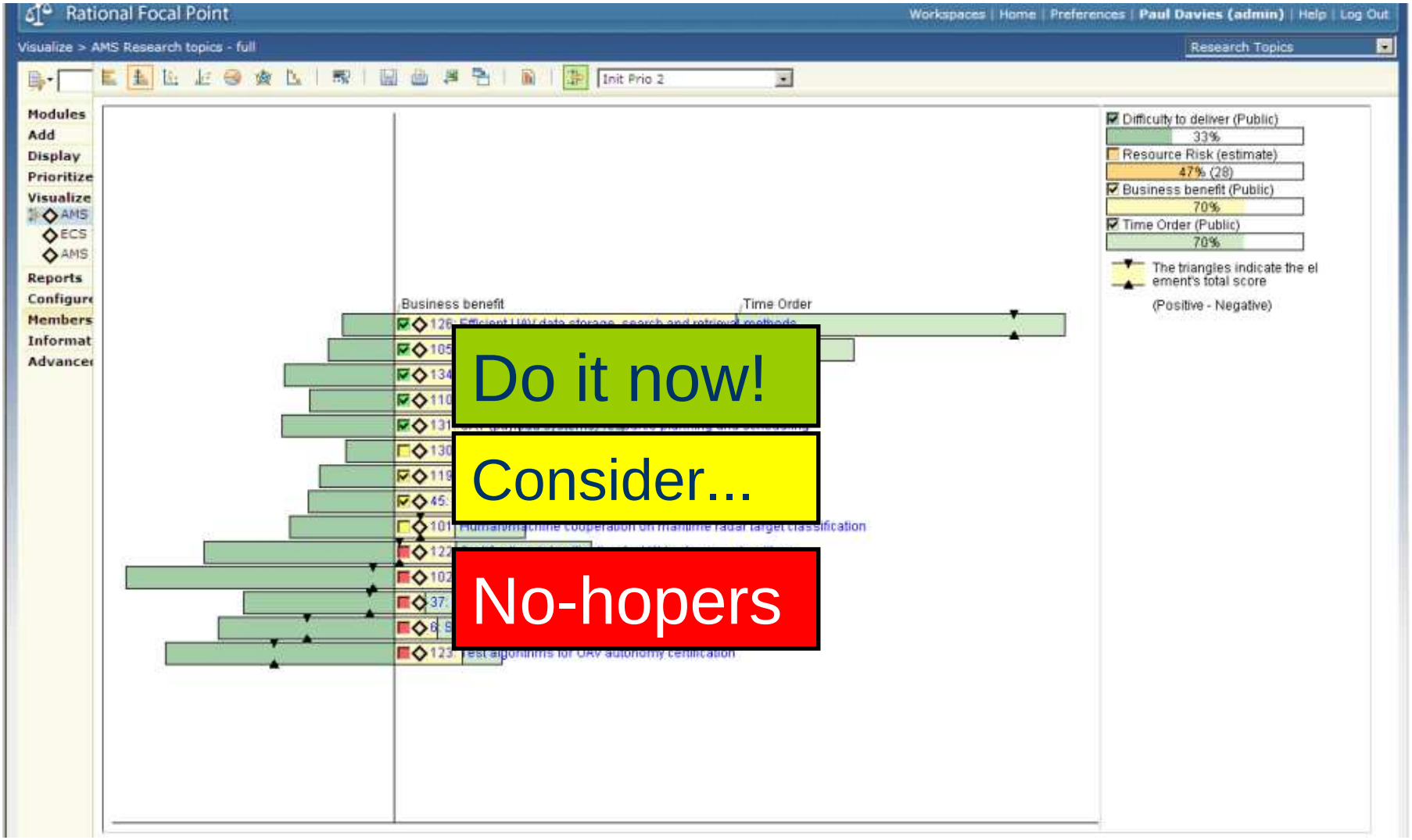
Research topics visualisation



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Experience so far

Do not underestimate the complexity of Business Integration

- Difficulty α (Business Size^n x CHF)
- Roadmapping system must fit into the greater system
- Some businesses need to change their approach
- Comprehensive user requirement consultation – URD to SRD
- Formal training needed – cat herders have it easy
- Process and system documentation must be formal
- Nationally classified data requires national data firebreaks

Programme must be led from the top

- Overcoming resistance to change can be difficult

It takes longer than you expect

- Emergent properties on complex systems are always fun
- The roll out will have taken us a full year

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Any Questions?

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