
R&D Management Conference

5 July 2007

***Strategic Roadmapping -
Aligning technology with organisational purpose***

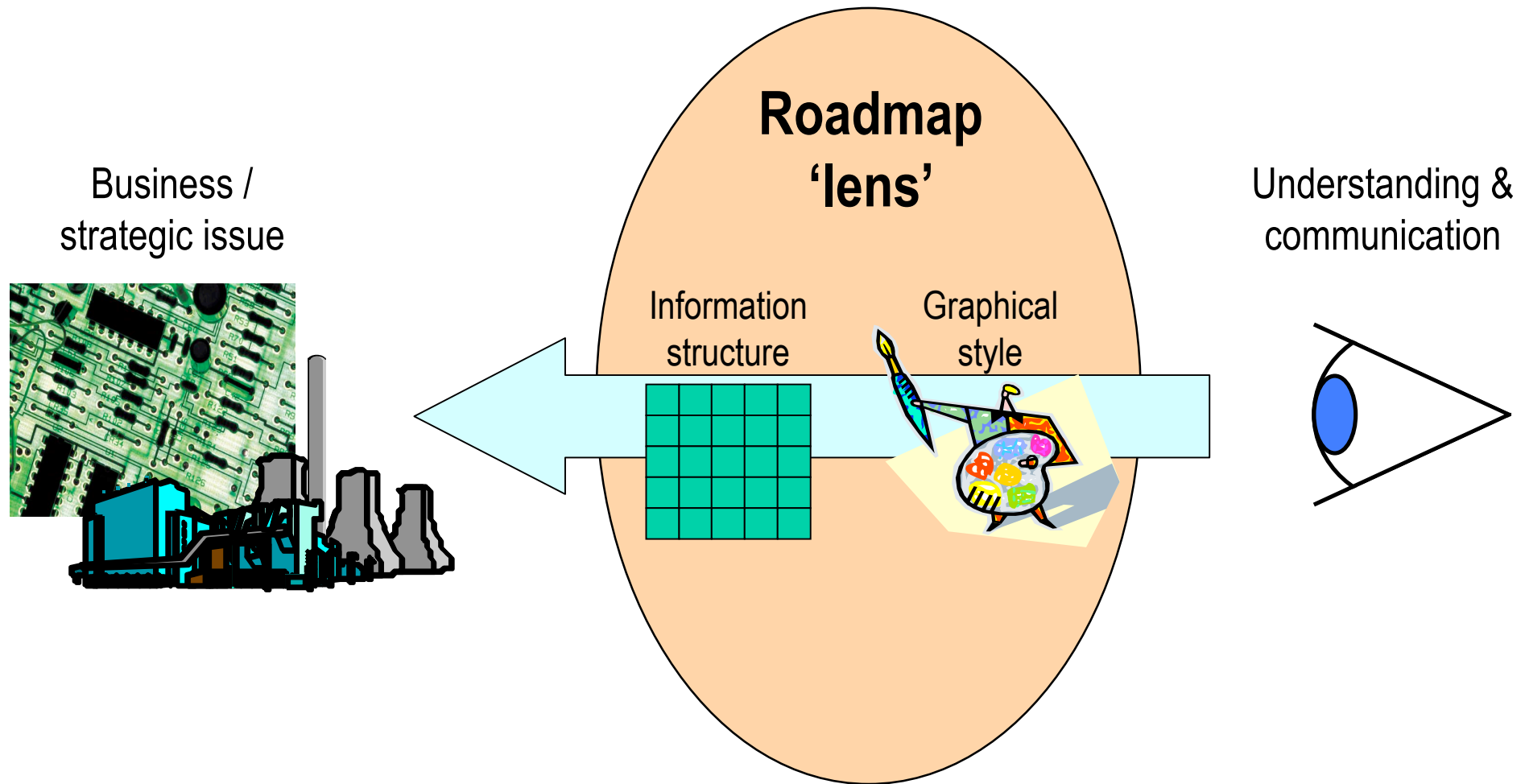
Robert Phaal

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Topics

- **Background and development of roadmapping**
- **'Fast-start' workshop methods**
- **Research challenges**

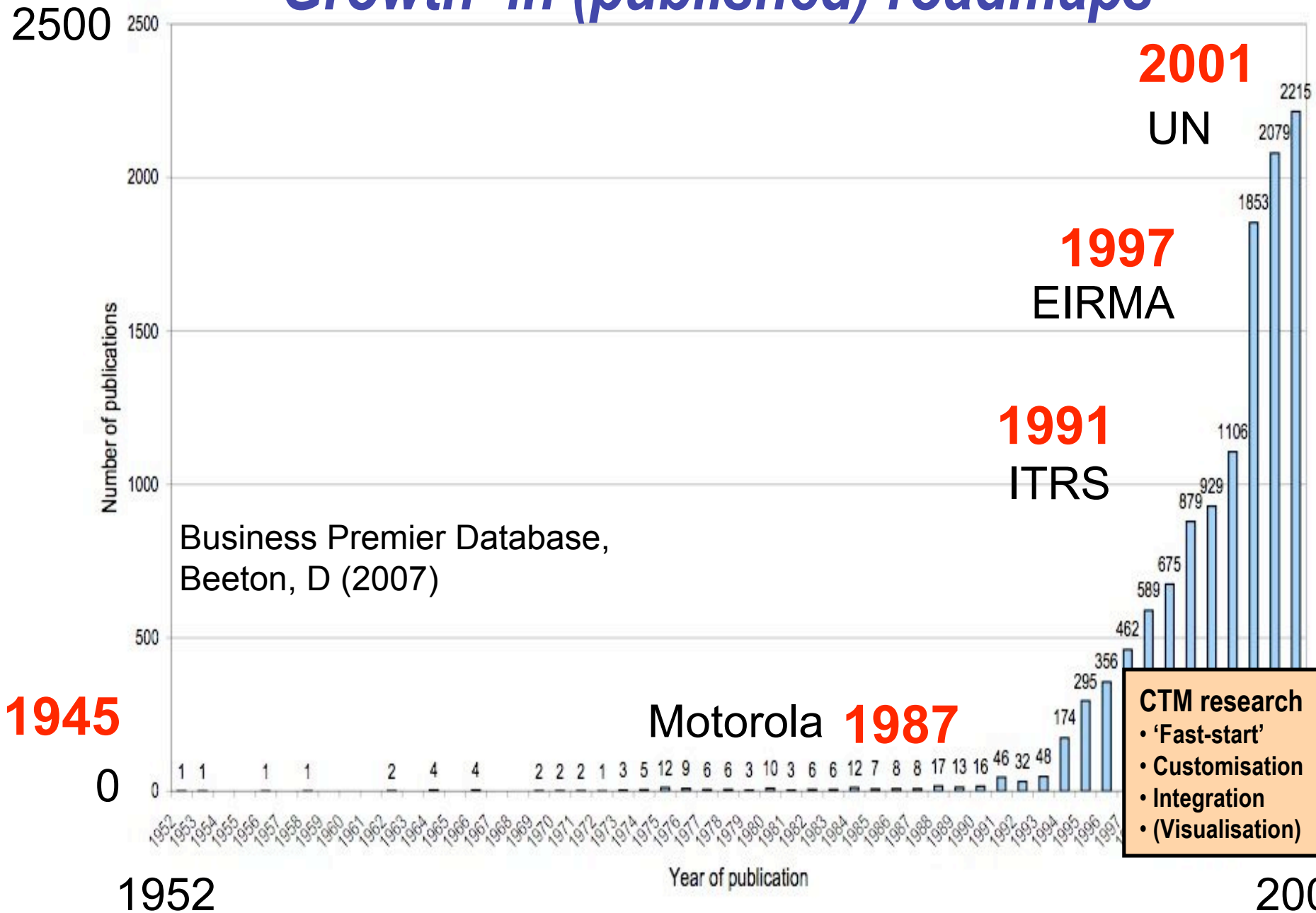
Roadmaps as 'strategic lenses'



Growth in (published) roadmaps

2007

?



1945

Motorola 1987

CTM research

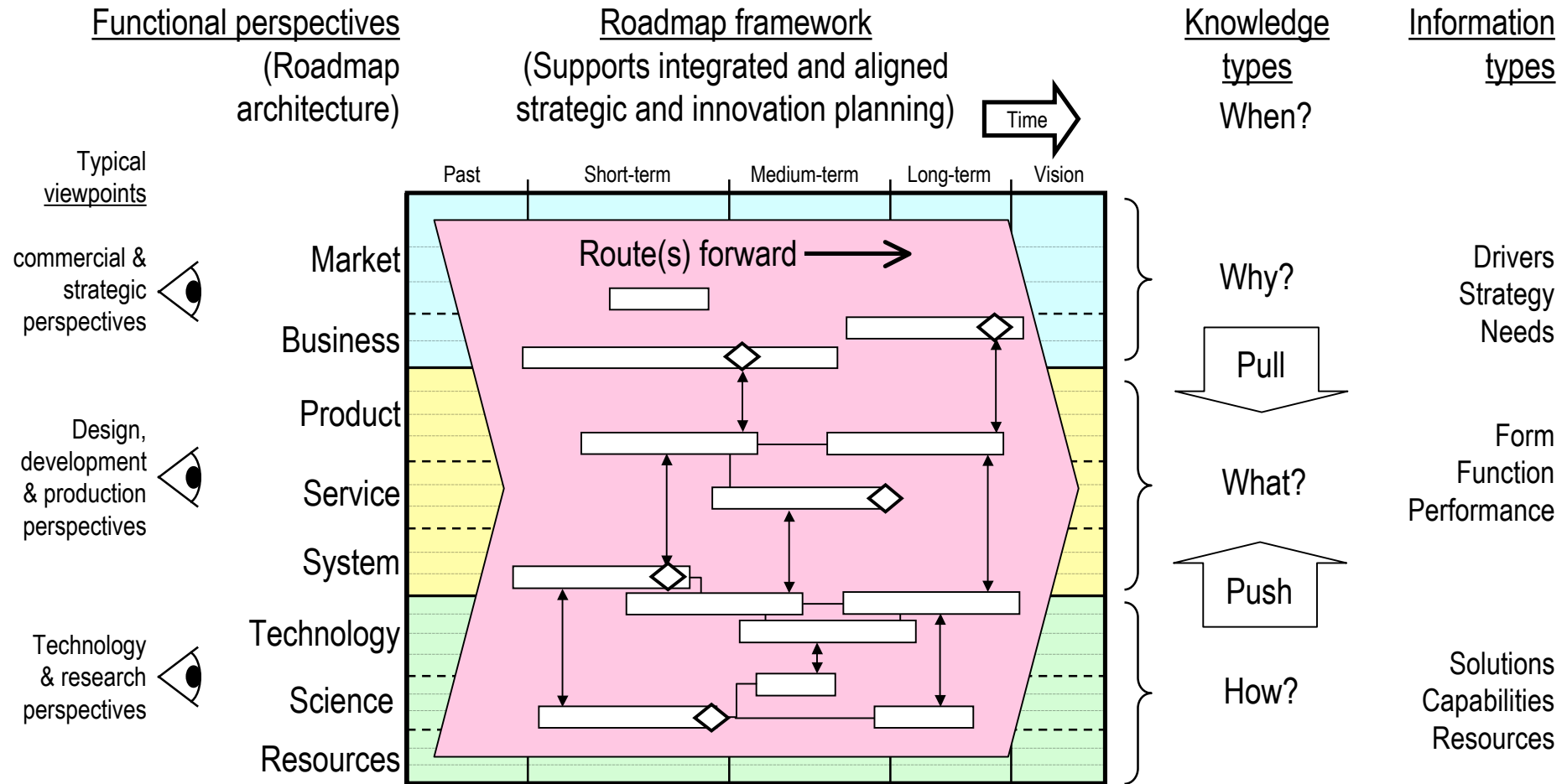
- 'Fast-start'
- Customisation
- Integration
- (Visualisation)

1952

Year of publication

2005

Roadmaps combine multiple perspectives



Three key questions:

- 2) Where are we now?
- 3) How can we get there?
- 1) Where do we want to go?

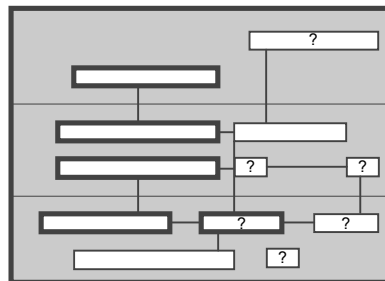
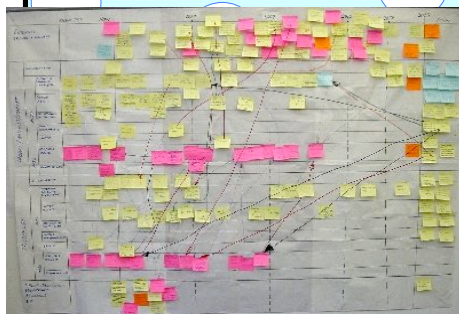
A common framework throughout the strategy / innovation process

Process funnel (e.g. strategy, new product development)

Requirements fluid
 Concepts fuzzy
 Many unknowns
 Many options
 Many assumptions
 Few constraints
 Scenarios

Time, effort, iteration

Requirements clear, stable
 Concepts clear, stable
 Fewer unknowns, risks understood
 Fewer options, greater constraints



Year	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Tuning	Push button	Push button - Synthesizers	Touch pad - Synthesizers	Voice actuated						
Selectivity	Ceramic resonators	SAWs	Digital signal processors							
Subcarrier function	Stereo	Paging	Data	Maps						
IC technology	Linear	5u CMOS	3u CMOS	1u CMOS						
Display	LEDs	Liquid crystal	Fluorescence							
Vehicular LAN								Single wire	Glass fibre	
Digital modulation										500 MHz bandwidth
PRODUCTS	RECEIVER 1 Stereo	RECEIVER 2 Plus: Scan Seek	RECEIVER 3 Plus: Personal paging	NEXT GENERATION Plus: Stock market Road information Remote amplifiers Remote controls	FUTURE GENERATION A NEW SERVICE Super Hi Fi Local maps					

Divergent process

Convergent process

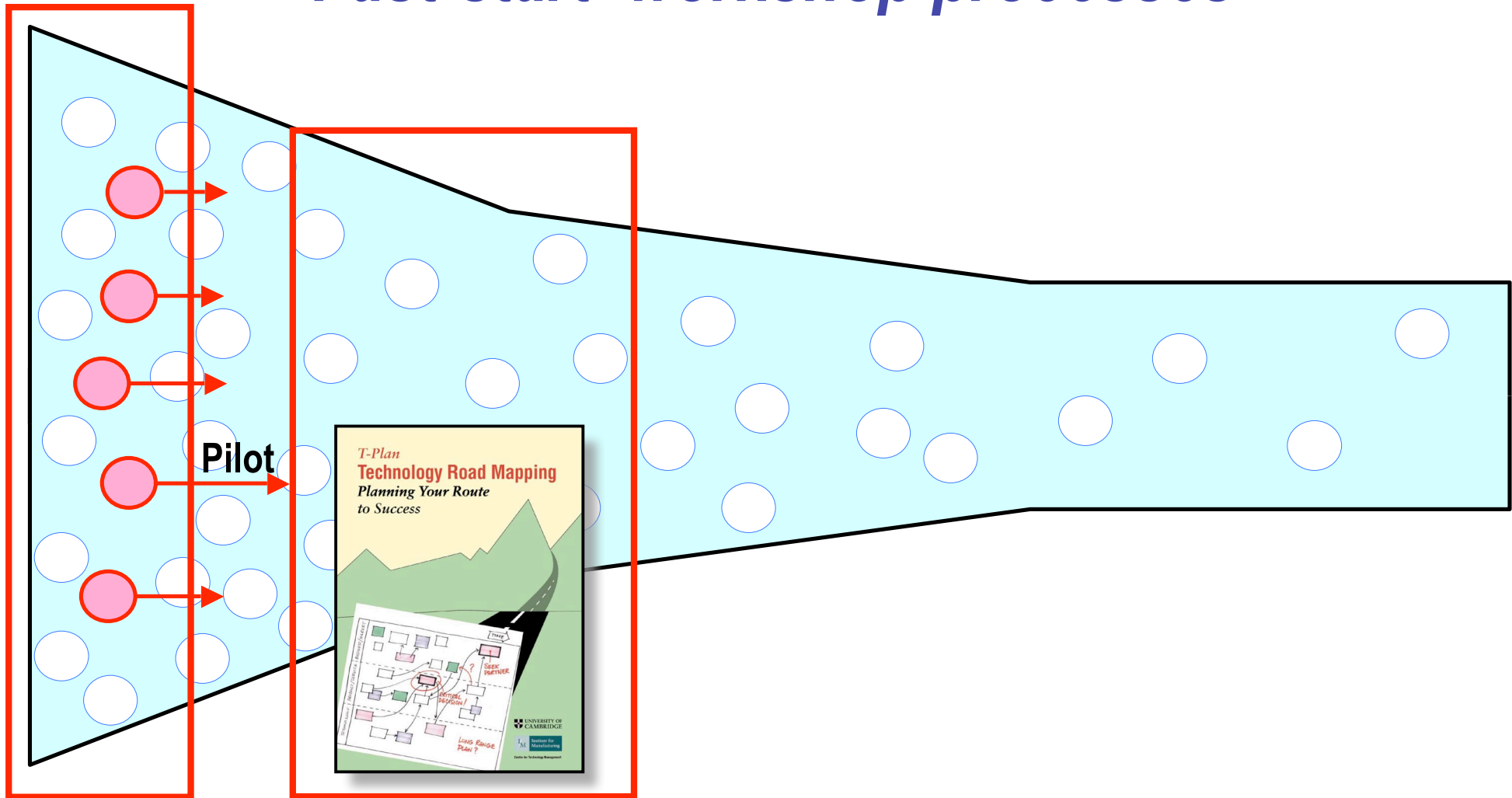
Explore

Shape

Plan

Implement

'Fast-start' workshop processes



S-Plan

T-Plan 'standard'

Typical roadmapping workshop activities

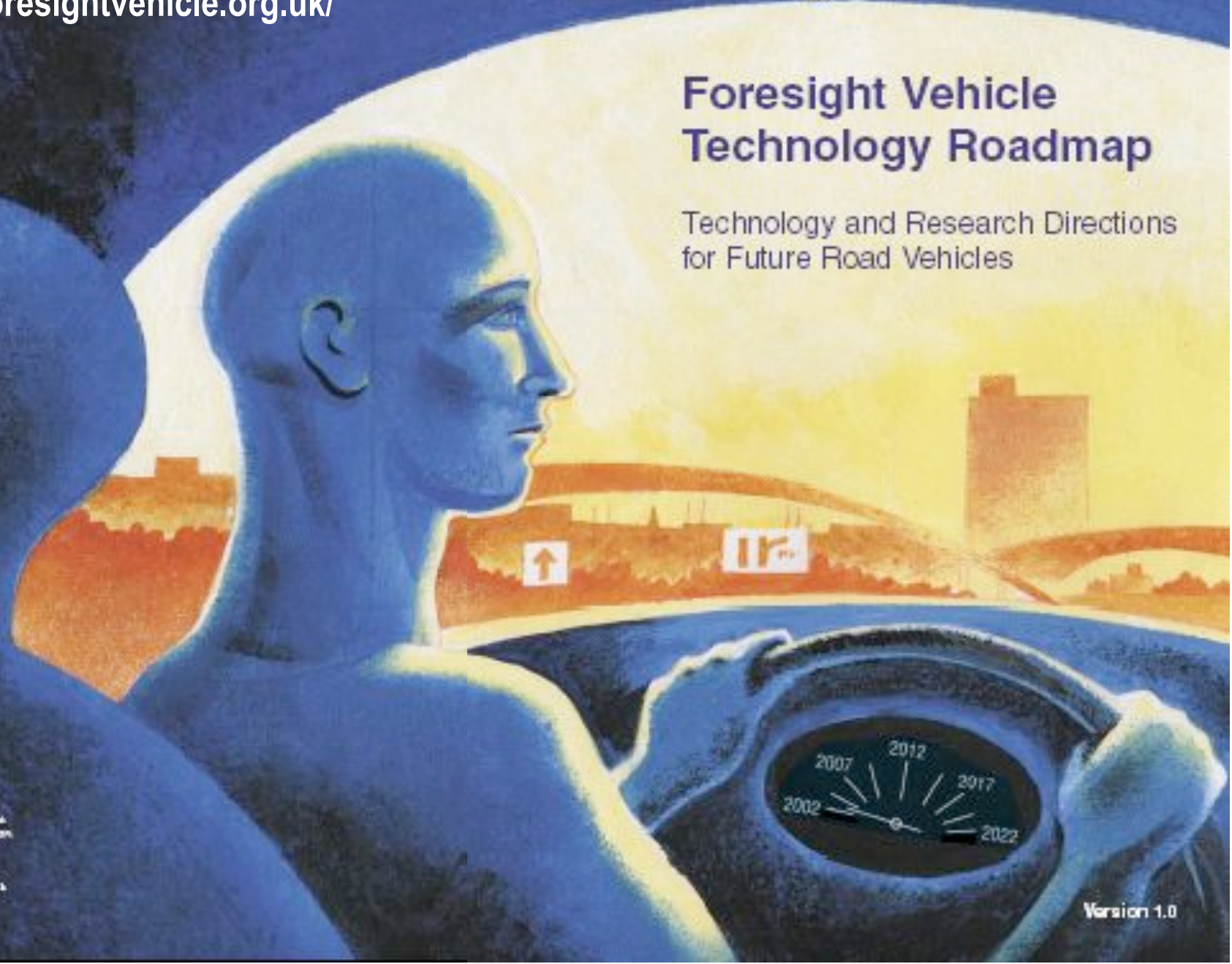


<http://www.foresightvehicle.org.uk/>



Foresight Vehicle Technology Roadmap

Technology and Research Directions
for Future Road Vehicles



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Version 1.0

<http://research.microsoft.com/towards2020science/>

2020 SCIENCE



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www.nature.com

Research challenges

- **Build links to academic and business disciplines**
e.g. R&D management; Strategy; Policy; Innovation; New product introduction;
Knowledge management; Systems integration; Sociology; Change management
- **Integration**
e.g. Frameworks; Tools; Processes
- **Technology**
e.g. Collaborative working; Software
- **Visualisation**
e.g. Dialogue; Communication