

Long Term Planning: Roadmapping and Portfolio Process

Pragmatic Portfolio Management for Product Development

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Key Points

- **Portfolio Management is a Process**

The key link among strategy, product development, and operational processes.

Multiple portfolios of markets, offers, products/platforms, and technologies.

- **Roadmaps and Roadmapping**

Help product teams link business strategy, product plans, and technology development.

Enable clear communication with customers and suppliers, and serve as a guide for the team.

- **Roadmaps and Portfolio Management**

Roadmaps clarify the unknown future and provide information for intelligent decisions

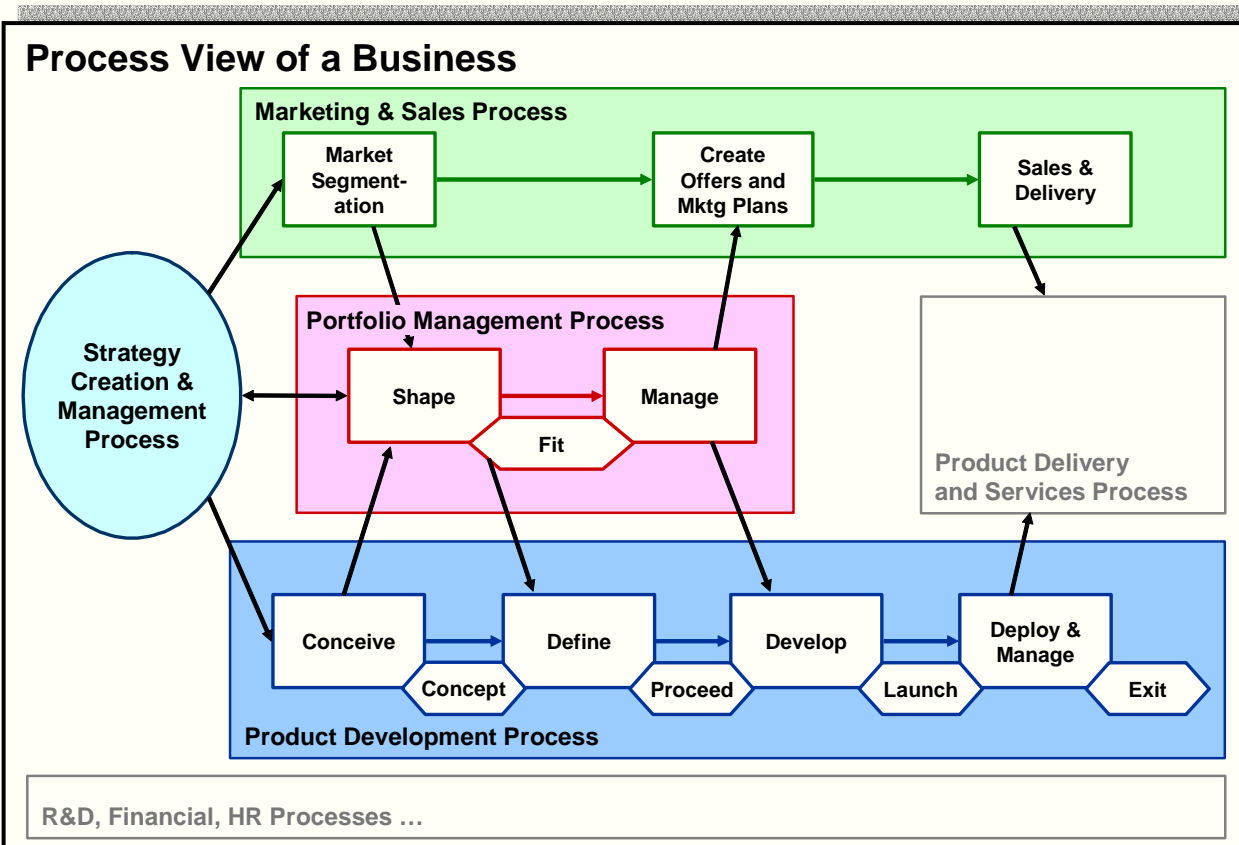
Roadmaps help manage offer, product and technology portfolios

Roadmapping and Portfolio Management are continuing, cyclical processes.

Portfolio Management: In the Context of Business Processes

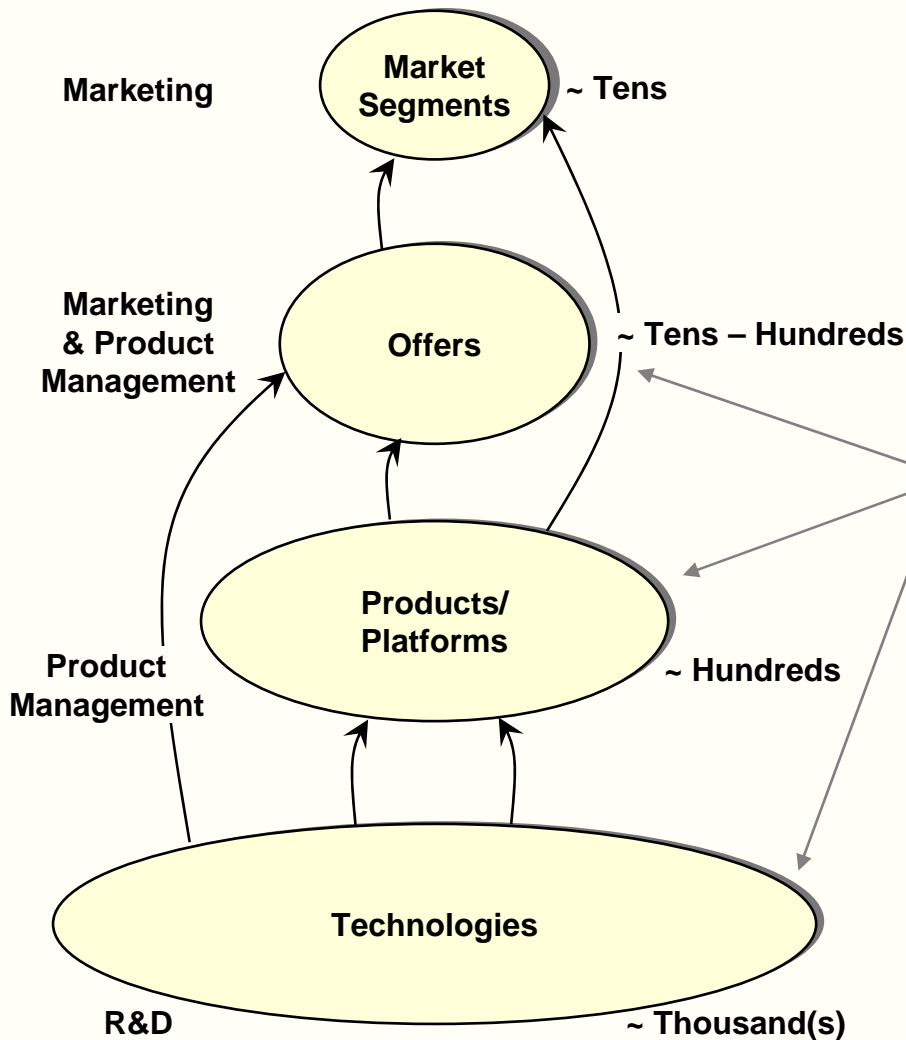
- **Portfolio Management: a critical linking process**
- **Cross-functional responsibility:
Strategy + Marketing + Product Development.**

Portfolio Management Process	
Shape	An unconstrained view of a target portfolio
Fit	Decide on the portfolio – constrained by financial and development resources and capabilities.
Manage	Direct investment plans, market plans, and project plans in line with the approved portfolio.



Product Development Gates	
Concept	Develop prototype
Proceed	With development
Launch	The product in the market
Exit	The market

A Corporation's Several Portfolios



- Multiple portfolios
- Correlated elements
- Portfolio Measures
 - Value
 - Balance
 - Strategic Alignment
- Roadmaps support portfolio management
 - A roadmap defines a product – with links to strategy, market, technology.
 - Roadmaps for offers link products, markets, strategy.
 - Roadmaps include the drivers and plans to manage the technology portfolio.

Primary Responsibility

(Order of Magnitude)

Roadmaps and Roadmapping

A Roadmap

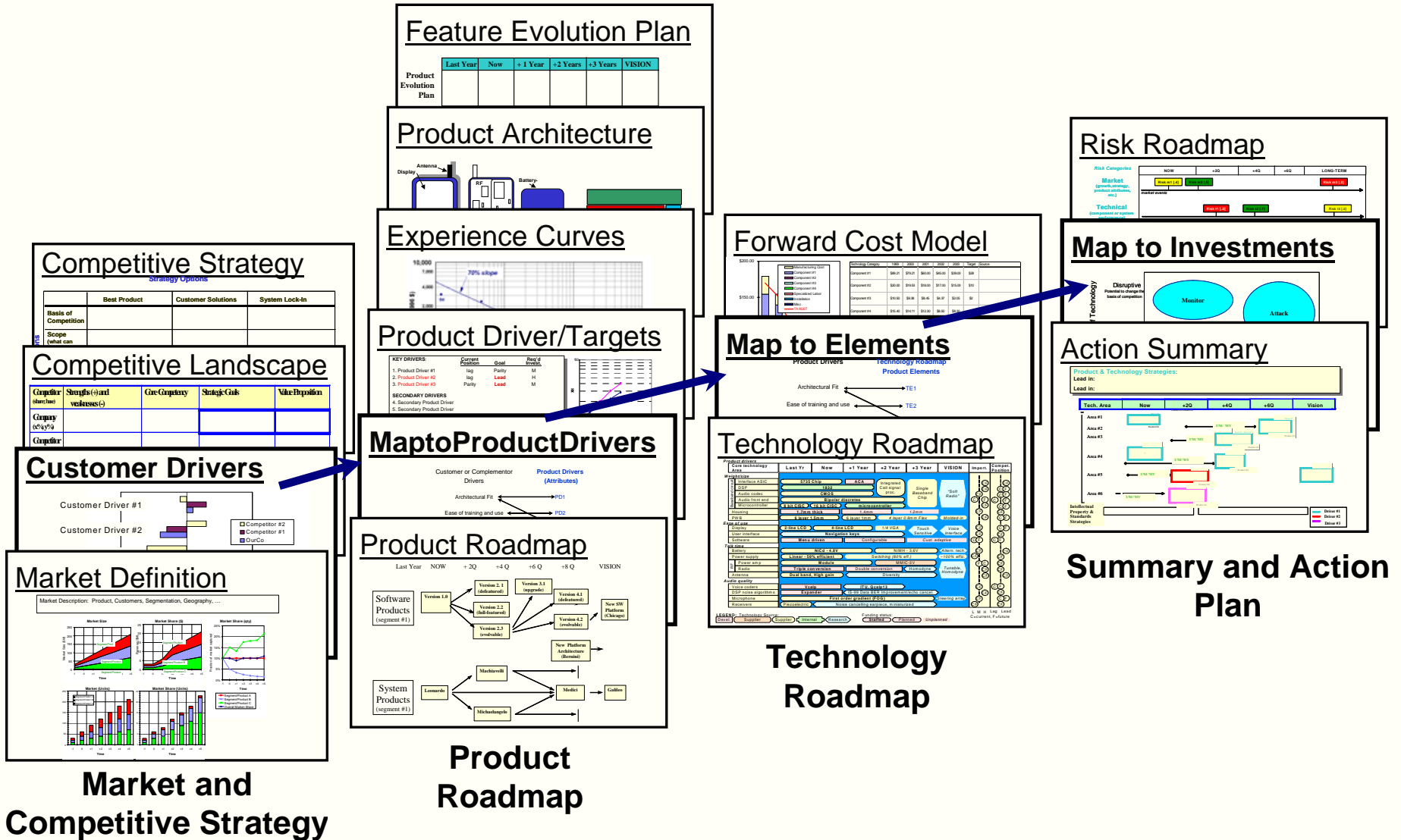
- is the view of a group of how to get where they want to go, or achieve their desired objective. (*Discipline*)
- helps the group make sure the capabilities to achieve their objective are in place at the time needed. (*Focus*)

Roadmapping

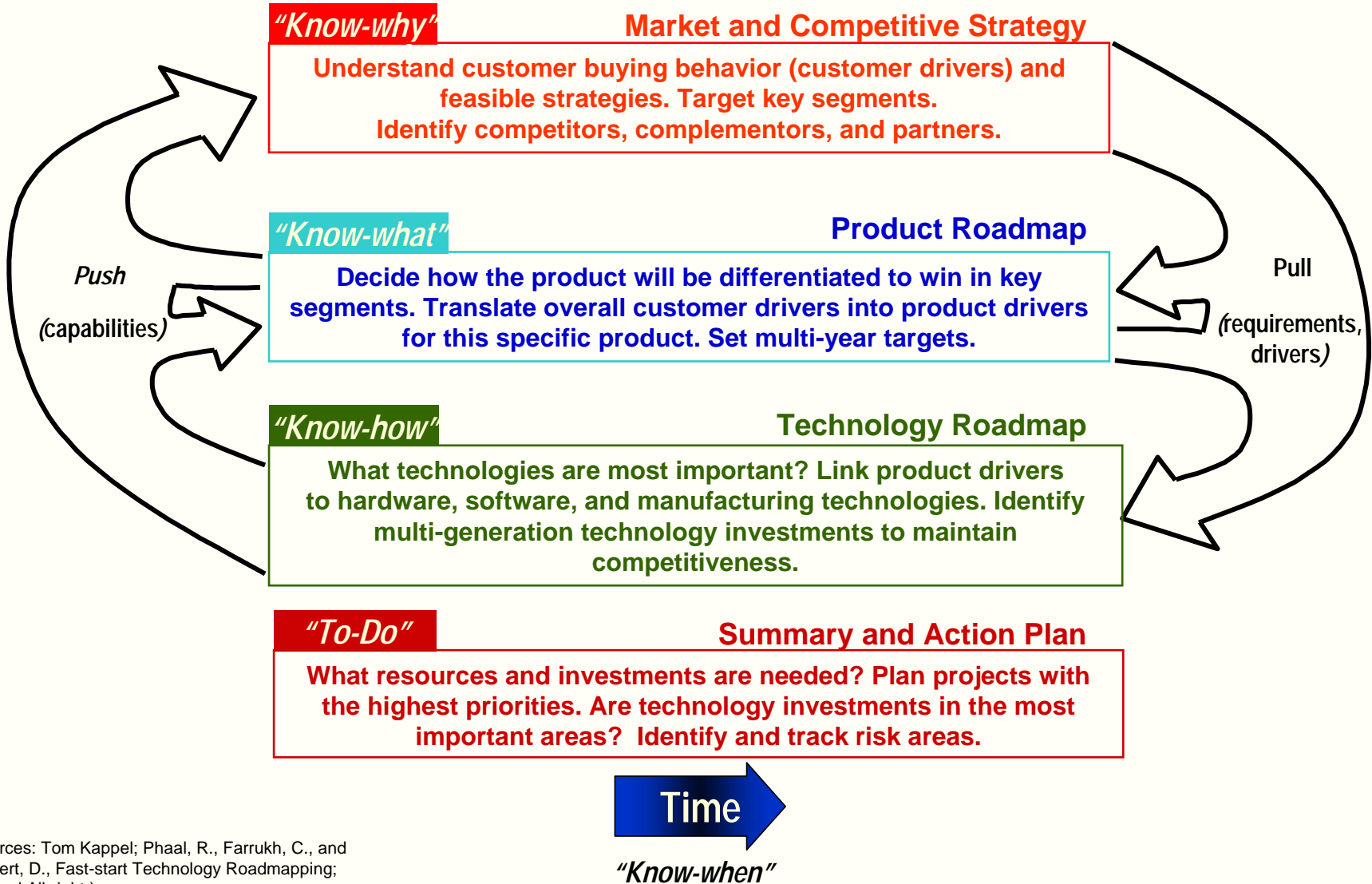
- is a *Learning* process for the group.
- is a *Communication* tool for the group.

Product-Technology Roadmap

A Business Planning Tool



Roadmap Planning in Four Steps



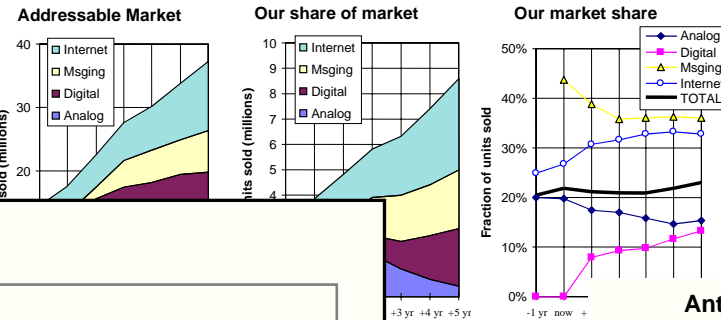
(Sources: Tom Kappel; Phaal, R., Farrukh, C., and Probert, D., Fast-start Technology Roadmapping; Richard Albright.)

1. Market and Competitive Strategy: Wireless Handset Example

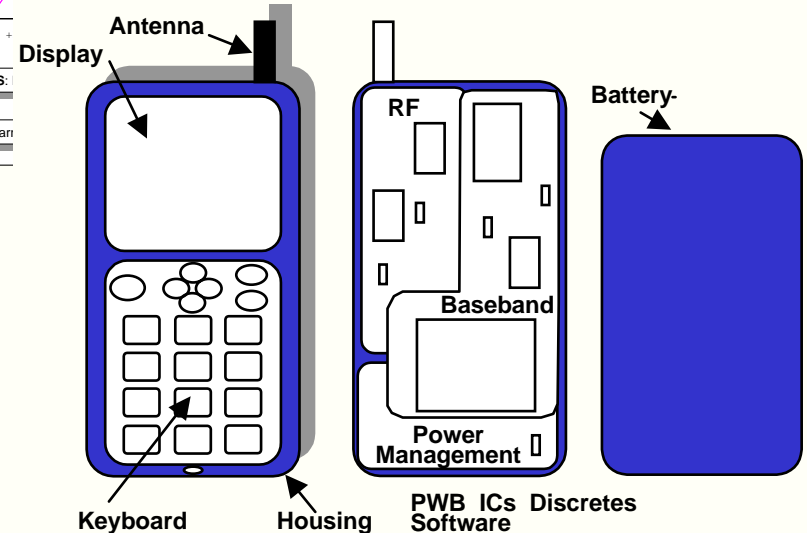
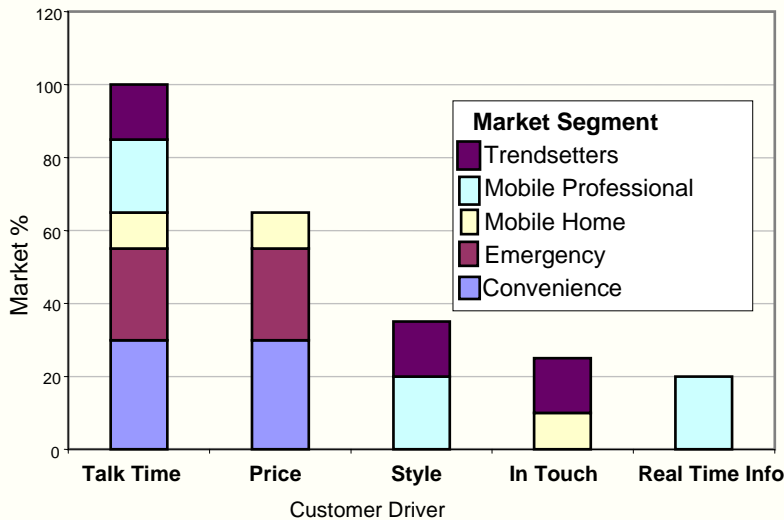
Competitive Landscape

Competitor (Market share annual %; cumulative share %)	Strengths (+) and Weaknesses (-), Competitive Advantages	Core Competencies Partnerships, Alliances	Strategic Direction: business goals/targets, value proposition
OurCo (20%; 10%)	+ Intellectual property + RF design <i>Product, Manufacturing cost</i>	DSPs and algorithms Speech recognition	First to market with CDMA Low-cost GSM phone Mass market (retail outlets) Low size and weight Personalized terminal
		Strategy	Countermeasures
		Global wireless leadership Defend market share Continue quality program	Move market to be style/feature based
		Increase US capacity Fast follow new technol. #2 in everything	Move to outsourced manufacturing. Partner with chipset suppliers
		Make CDMA dominant Control standard	Bring new internet features to market early

Market Share and Growth



Customer Drivers



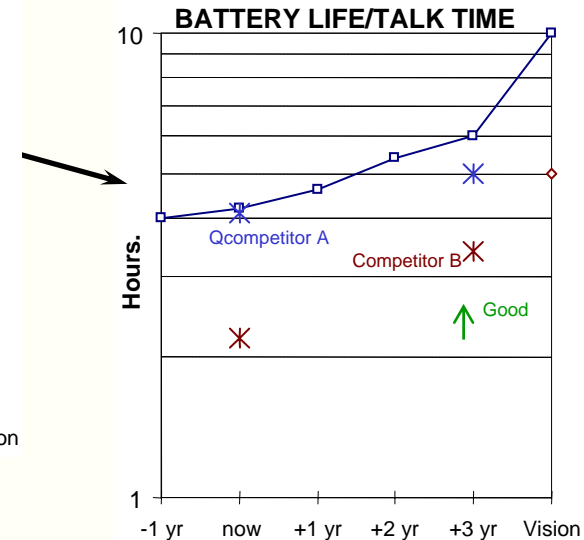
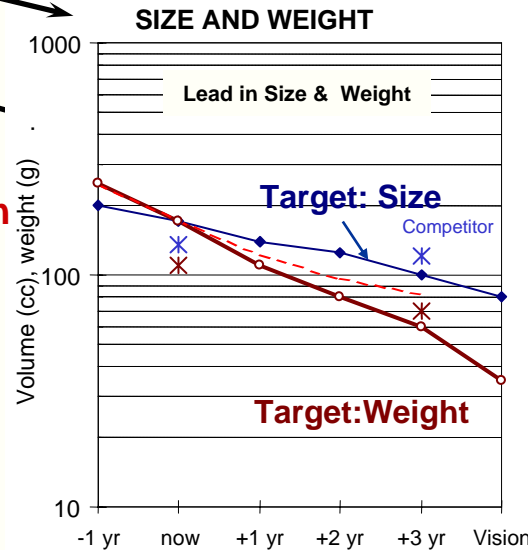
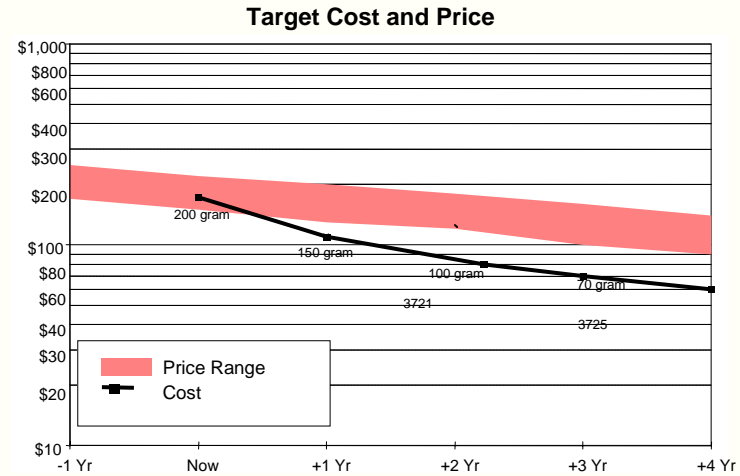
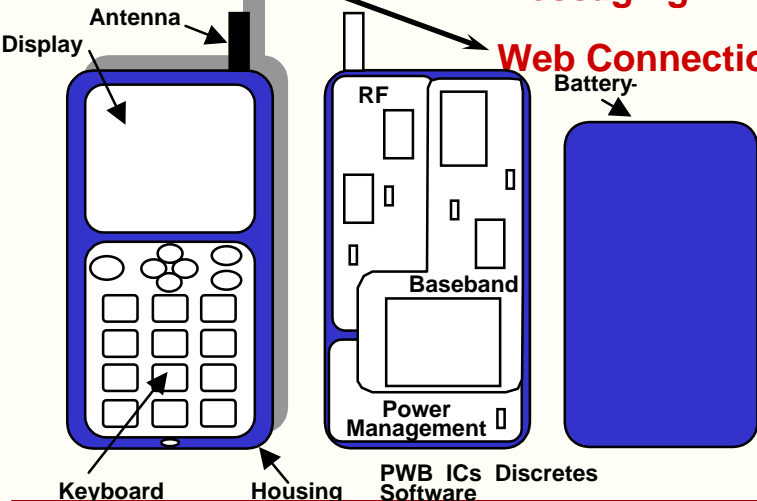
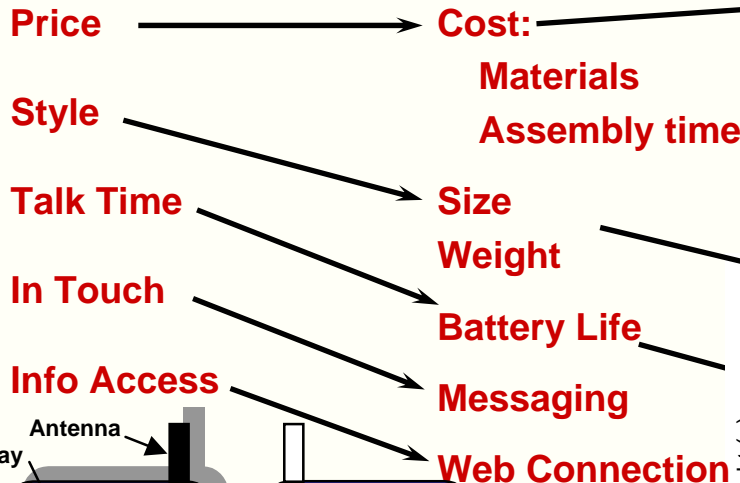
2. Product Roadmap:

Product Drivers link Customer Needs to Technologies and Targets

Wireless Handset Example

Customer Drivers

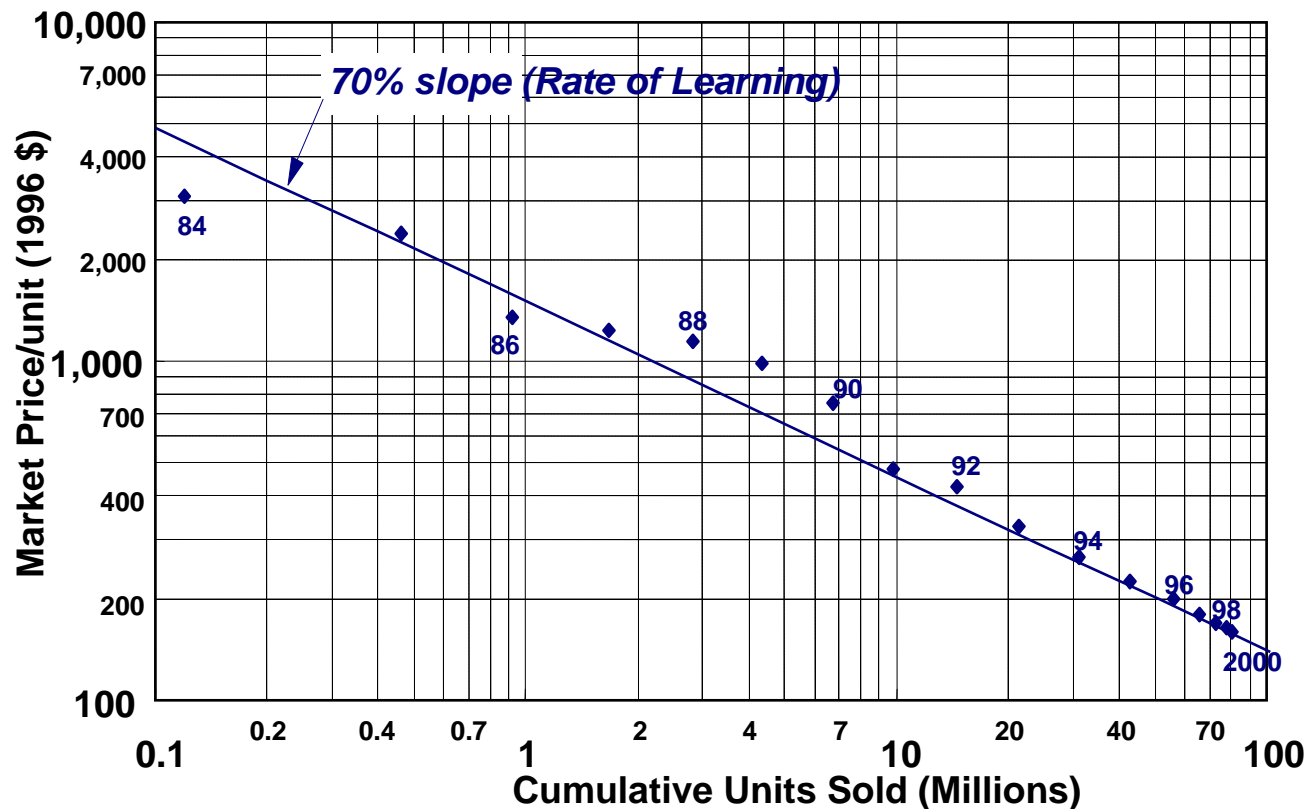
Product Drivers



Using the Past to Forecast the Future

Experience Curves Capture Many Drivers

WIRELESS HANDSET PRICE



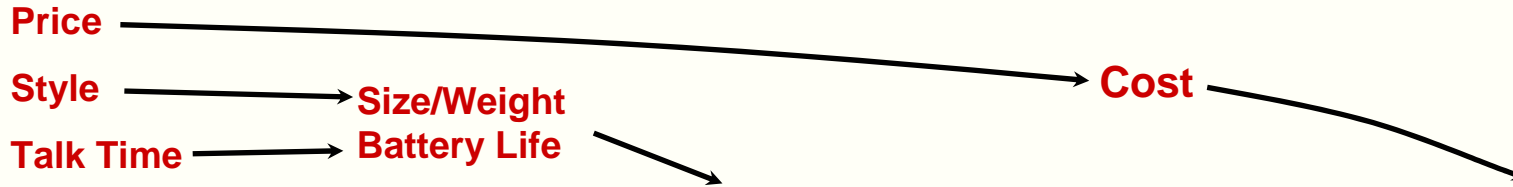
Culture: group, corporate, professional, and industry behaviors

Supply: technology that differentiates or disrupts, product platforms, product realization methods, production

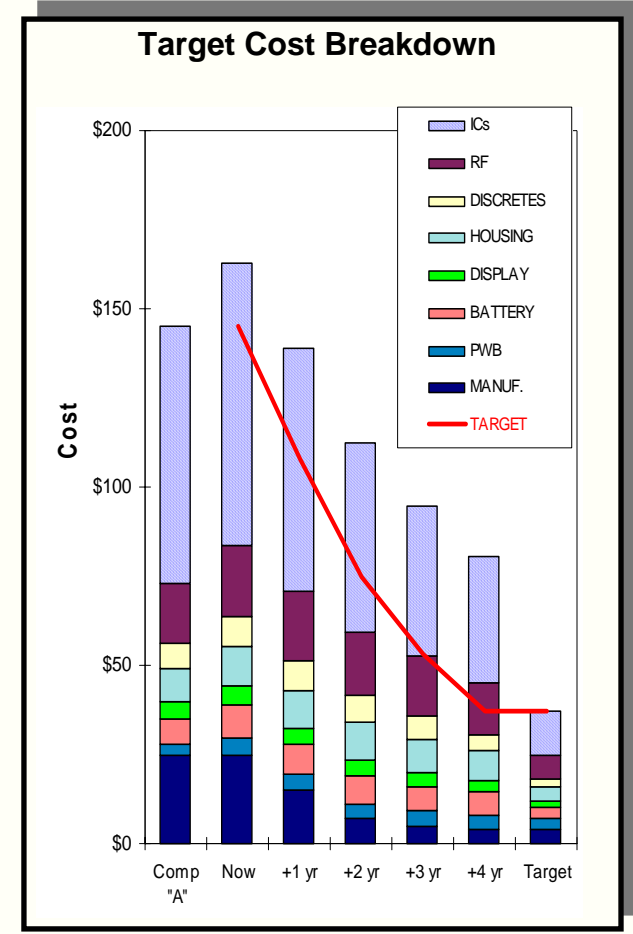
Demand: marketplace, elasticity, competition level, regulatory climate, market learning potential

Operating Environment: system architecture, complex requirements, standards

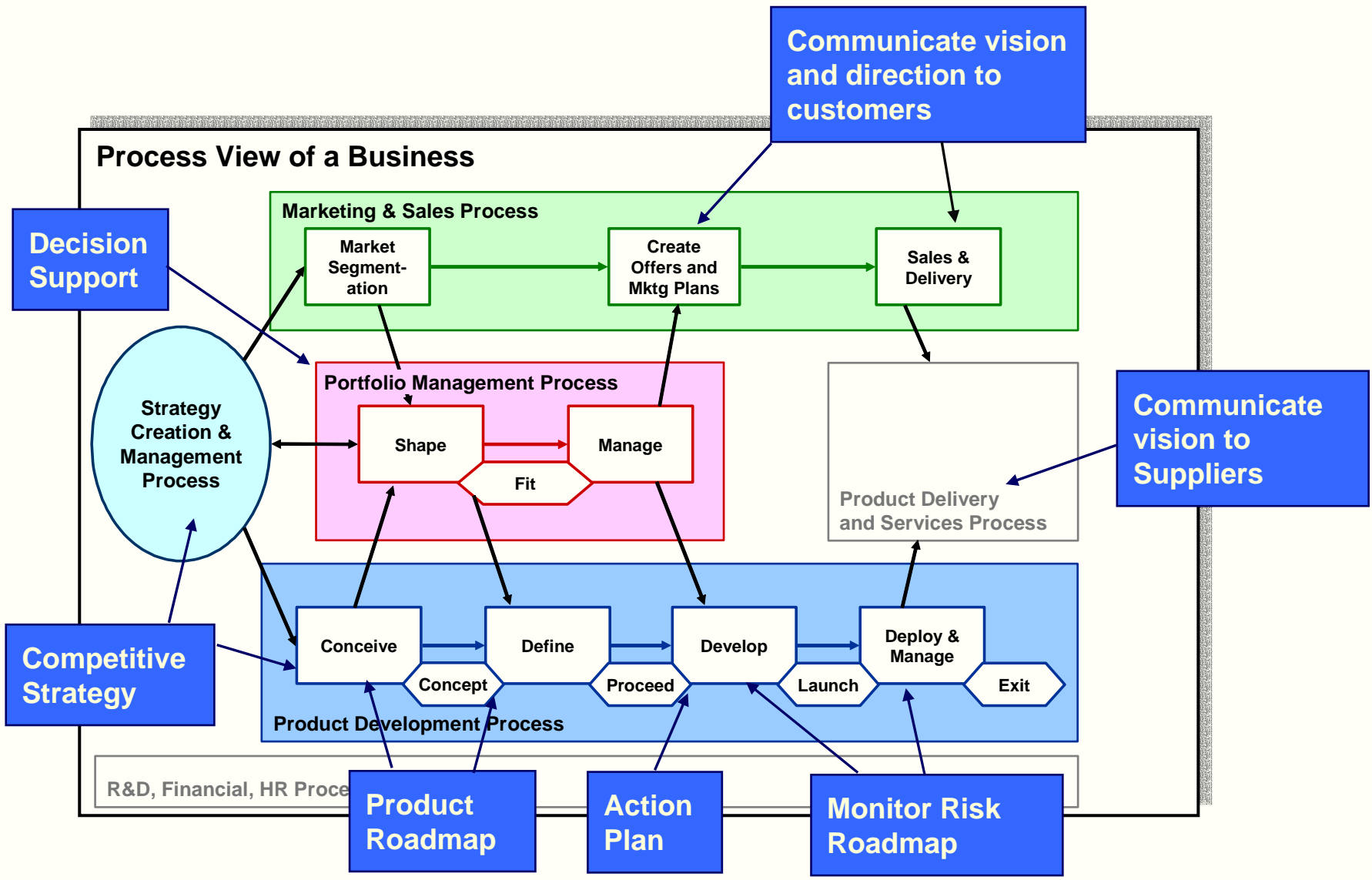
3. Technology Roadmap: Organized by Drivers



Product drivers		Technology Roadmap					VISION	Import.	Compet. Position
Core technology Area	Last Yr	Now	+1 Year	+2 Year	+3 Year				
Weight/size									
Baseband circuit	Interface ASIC	5735 Chip	ACA	Integrated Call signal proc.	Single Baseband Chip	"Soft Radio"			
	DSP	1832							
	Audio codec	CMOS							
	Audio front end	Bipolar discretes							
	Microcontroller	8 bit CISC	16 bit CISC	microcontroller					
Housing	1.7mm thick	1.4mm	1.2mm						
PWB	6 layer 1.5mm	6 layer 1mm	4 layer 0.8mm Flex	Molded-in					
Ease of use									
Display	2-line LCD	4-line LCD	1/4 VGA	Touch Sensitive	Voice Interface				
User interface	Navigation keys								
Software	Menu driven	Configurable	Cust. adaptive						
Talktime									
Battery	NiCd - 4.8V		NMH - 3.6V	Altern. tech.					
Power supply	Linear - 50% efficient		Switching (80% eff.)	~100% eff.					
RF	Power amp	Module		MMIC-3V	Tunable, Homodyne				
	Radio	Triple conversion	Double conversion	Homodyne					
Antenna	Dual band, High gain		Diversity						
Audio quality									
Voice coders	Vcelp		ITU, Qcelp13						
DSP noise algorithms	Expander		IS-99 Data BER Improvement/echo cancel.						
Microphone	First order gradient (FOG)				Steering array				
Receivers	Piezoelectric		Noise cancelling earpiece, miniaturized						

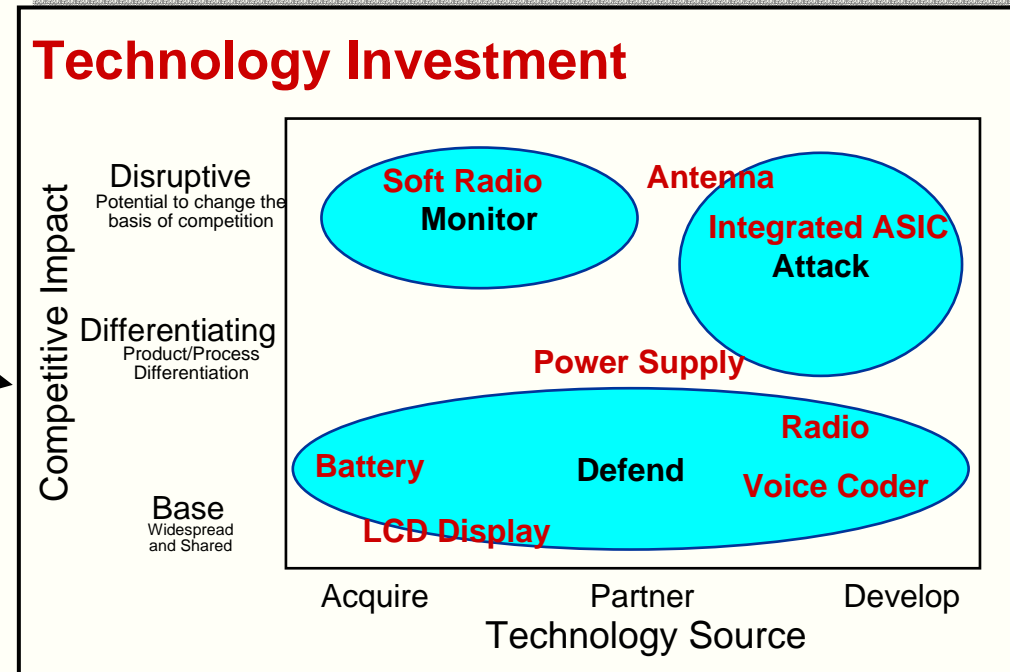
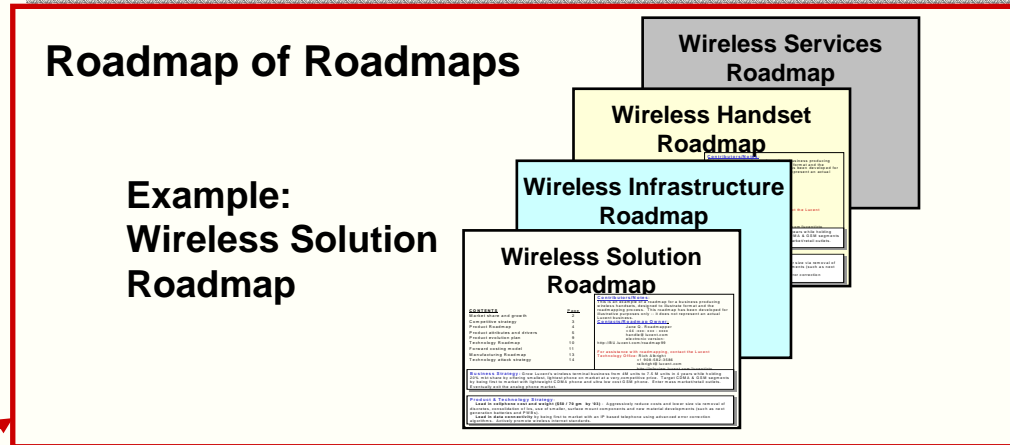


Roadmaps Drive Many Process Steps



Roadmaps and Portfolio Management

- A Product-Technology Roadmap
 - Defines the measures for portfolio management
 - Value, Strategic Alignment, Balance
 - Links strategy, market, technology
- Roadmaps Manage Multi-Product Offers
- Roadmaps are the basis for the technology portfolio



Some Learnings from Roadmapping Experience

- **On Roadmaps**
 - **Product-Technology Roadmaps.**
 - **Linked (strategy to product to technology) roadmaps, not parallel marketing and technology roadmaps -- with increasing emphasis on strategy front end.**
 - **Focus on the 2 - 3 most important drivers, technologies and investments/actions.**
 - **Extend to joint roadmaps with customers and suppliers**
- **On Roadmapping**
 - **The product manager (with P&L) owns and drives.**
 - **A strong leader makes or breaks.**
 - **Cross functional team.**
 - **A facilitator is important.**
 - **Use the roadmap to guide the journey.**
 - **Renewing the roadmap: Buy 'em lunch!**

Resource:
MATI (Management of Accelerated Technology Innovation): Best practices in Technology Management.
<http://mati.ncms.org>

Why Roadmap?

- Roadmapping is just **good planning**, with a heavy dose of technology (not just an afterthought).
- Roadmaps **link** business strategy and market data with product and technology decisions using a series of simple charts.
- Roadmaps reveal **gaps** in product and technology plans.
- Roadmaps **prioritize** investments based on drivers.
- Roadmapping helps set better **targets**: more competitive and more realistic.
- Sharing roadmaps allows **strategic** use of technology across product lines.
- Roadmapping **communicates** business, technology and product plans to team members, management, customers and suppliers.
- Roadmaps provide a **guide** to the team, allowing the team to recognize and act on events that require a change in direction.

Summary: Key Points

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Help product teams link business strategy, product plans, and technology development.

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Roadmaps clarify the unknown future and provide information for intelligent decisions

Roadmaps help manage offer, product and technology portfolios

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Summary:

Discipline & Focus

Learning & Communications