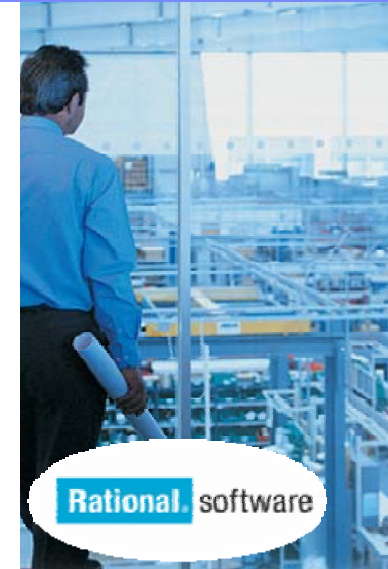# IBM Product Portfolio Management for PLM

Balance strategic and business objectives
to meet market needs

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Rational. software

→ Go to IBM

Agenda

- Trends in Product Development and Delivery

- The Challenges of Managing a diverse Product Portfolio

- Best Practices in Product Portfolio Management

- The IBM Solution

Agenda

- **Trends in Product Development and Delivery**

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Businesses are facing an unprecedented rate of change

Meet increasingly unique customer needs

Make better decisions

React to market shifts

Deliver innovation to differentiate products

Enable business agility while doing more with less

Exploit globalization

Manage regulatory mandates

Excel at quality

Seize business opportunities

Execute with reduced risk and cost

Achieve precision in desired business outcomes

Successful businesses will be those that effectively deliver innovation while controlling cost and risk

Products are getting smarter every time we look

- One billion camera phones were sold in 2007, double that of 2006

- Uniquely customizable phone, e-mail, music, Web, camera, GPS, apps, video recorder, etc. in a single device

- In 1999 this would have been   science fiction, yet productivity has skyrocketed as a result

- In 2010 it's **yesterday's news!**

What's possible by 2019?

35,000 apps. And counting.

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The Product Development Landscape is Evolving

Smarter Products

Reengineering

Tool-Assisted Design

1970 - 1980	1980 - Present	Present & Beyond
- **2D CAD** - **Ad-hoc data management** - **No organization / process change**	- **3D CAD** - **PDM focus on mechanical BOM** - **Organization & process improvement**	- **Full traceability of requirements throughout product lifecycle** - **Holistic system design and interaction** - **Increased focus on software engineering**
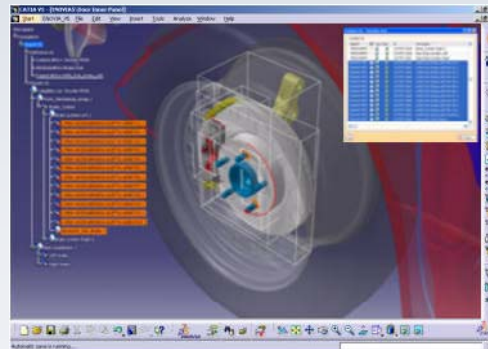
A smarter planet begins with smarter products

Competition and Customer Demand are Driving Changes In Product Development

Aerospace and Defense

- Need for cost reduction/ increased innovation is resulting in extensive design partnerships across legal, technology & security boundaries

Electronics

- Need for product differentiation is driving increasing amount of software into products

Automotive

- 35% increased value of in-vehicle electronics & software by 2010

- 90% of innovation is based on electronics & embedded software

Changes are being driven across the entire supply chain - even to commodity parts that now require sophisticated software & electronics
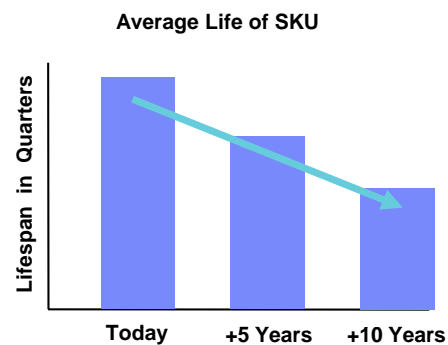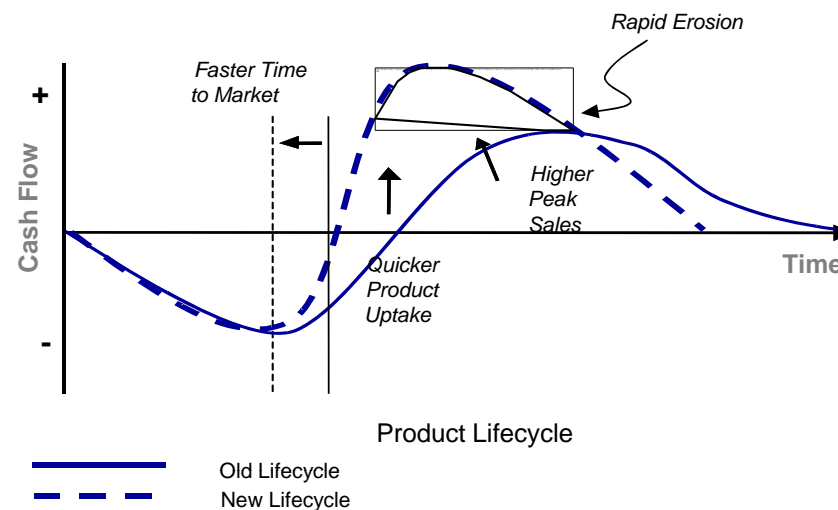
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Shorter Product Lifecycles

- Technological change & convergence drives increasingly shorter product lifecycles.

- Shrinking timeframe to re-coup market advantage from an innovation or IP advantage.

- Product uptake and sales peak occur earlier, and profits erode much sooner.

Shorter Technology Lifespan

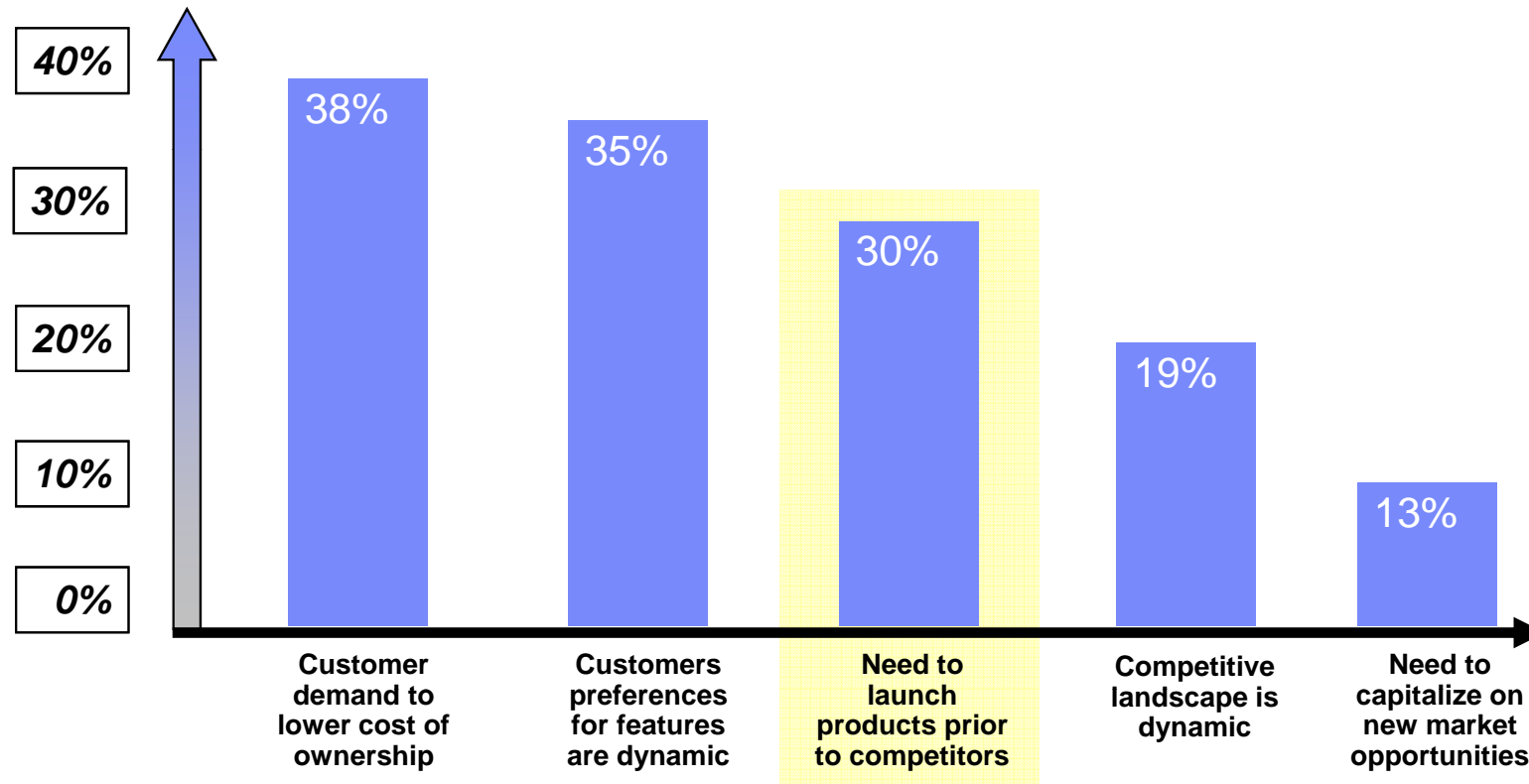At a large semiconductor firm, average product lifespan has been **declining 20% annually**

Average Life of SKU

Lifespan in Quarters

Today   +5 Years   +10 Years

New Profitability Curve

Rapid Erosion

Faster Time to Market

+

Cash Flow

−

Higher Peak Sales

Quicker Product Uptake

Time

Product Lifecycle

—— Old Lifecycle
- - - New Lifecycle

Embedded Software - Critical for Smarter Products

Top Five Pressures Driving Improvements to Embedded Systems Development

Source: Aberdeen Group, Embedded Systems Development, Three proven practices for speed and agility, Michelle Boucher, March 2009
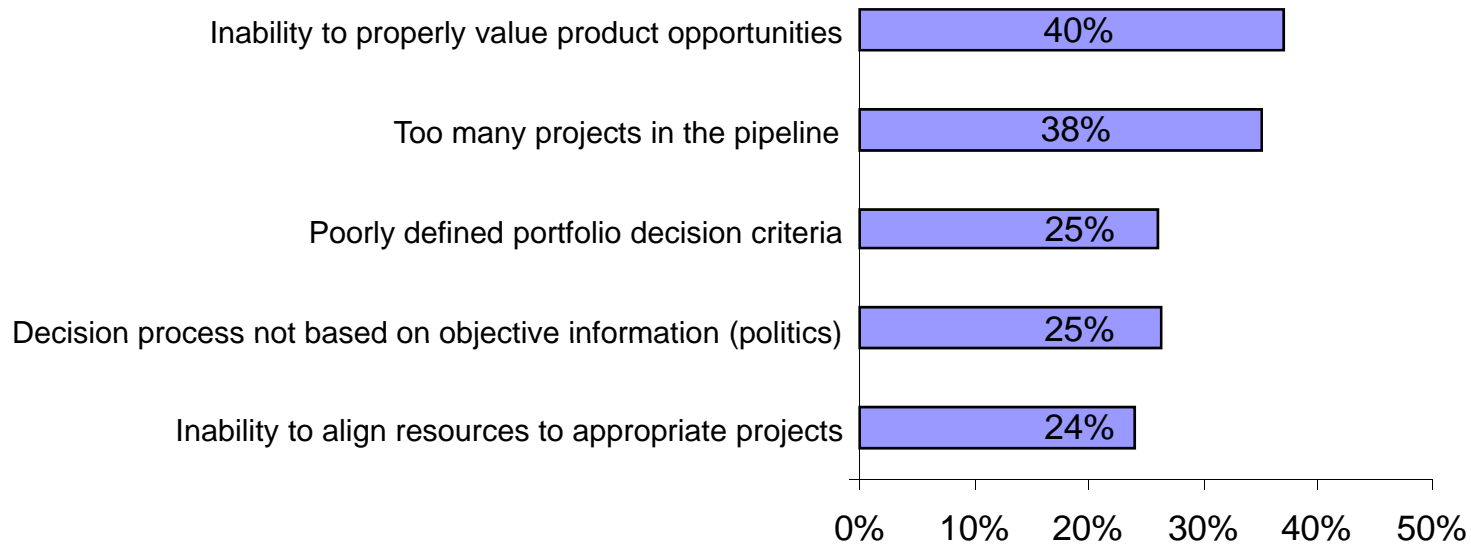

	Customer demand to lower cost of ownership	Customers preferences for features are dynamic	Need to launch products prior to competitors	Competitive landscape is dynamic	Need to capitalize on new market opportunities
	38%	35%	30%	19%	13%

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- Best Practices in Product Portfolio Management

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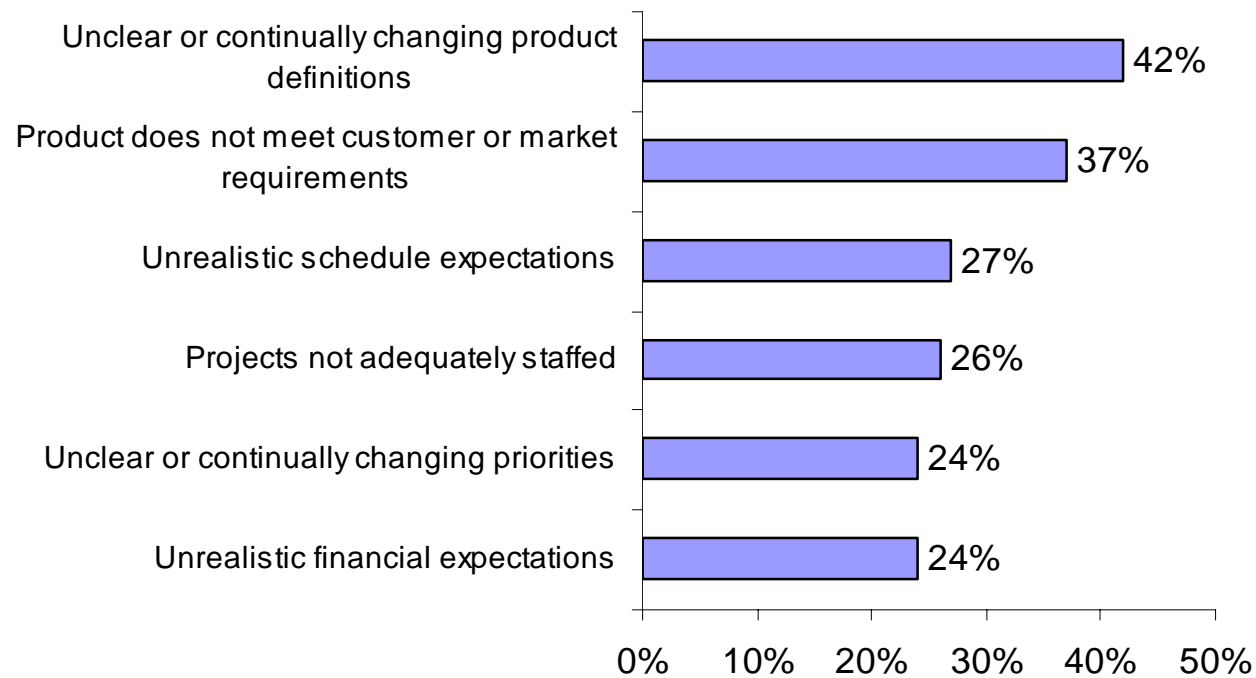# Top Challenges of Improving Product Portfolio Management

Challenge	Percentage
Inability to properly value product opportunities	40%
Too many projects in the pipeline	38%
Poorly defined portfolio decision criteria	25%
Decision process not based on objective information (politics)	25%
Inability to align resources to appropriate projects	24%

0%   10%   20%   30%   40%   50%

Source: Aberdeen*Group*, August 2009

Politics and inertia still win the day, hard to grasp facts for value and properly align resources

Why do products fail?

Category	Percentage
Unclear or continually changing product definitions	42%
Product does not meet customer or market requirements	37%
Unrealistic schedule expectations	27%
Projects not adequately staffed	26%
Unclear or continually changing priorities	24%
Unrealistic financial expectations	24%

Source: Aberdeen*Group*, August 2006

Most products fail due to self-inflicted problems

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Innovation is a Necessity to Increase Margins

- "On average companies enjoy a 20% margin advantage on their new products. However, while new products are critical, the level of innovation in new products also impacts profit margins."

- "…a product portfolio that contains more than 40% "new to the world" products enjoys a new product margin advantage that is 70% higher than a portfolio that is more than 40% "me-too" products."
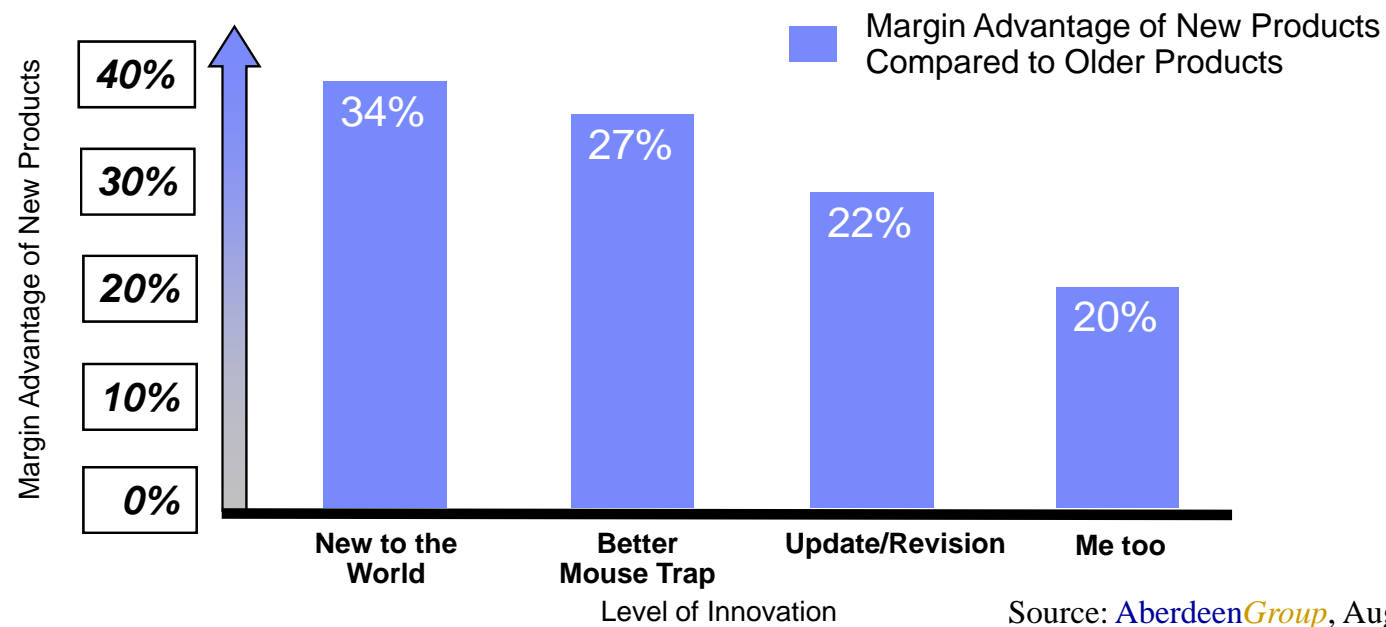
■ Margin Advantage of New Products Compared to Older Products

Level of Innovation

Source: Aberdeen*Group*, August 2009

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"There is no loss to the customer by eliminating activities that do not add value."

– Peter Drucker
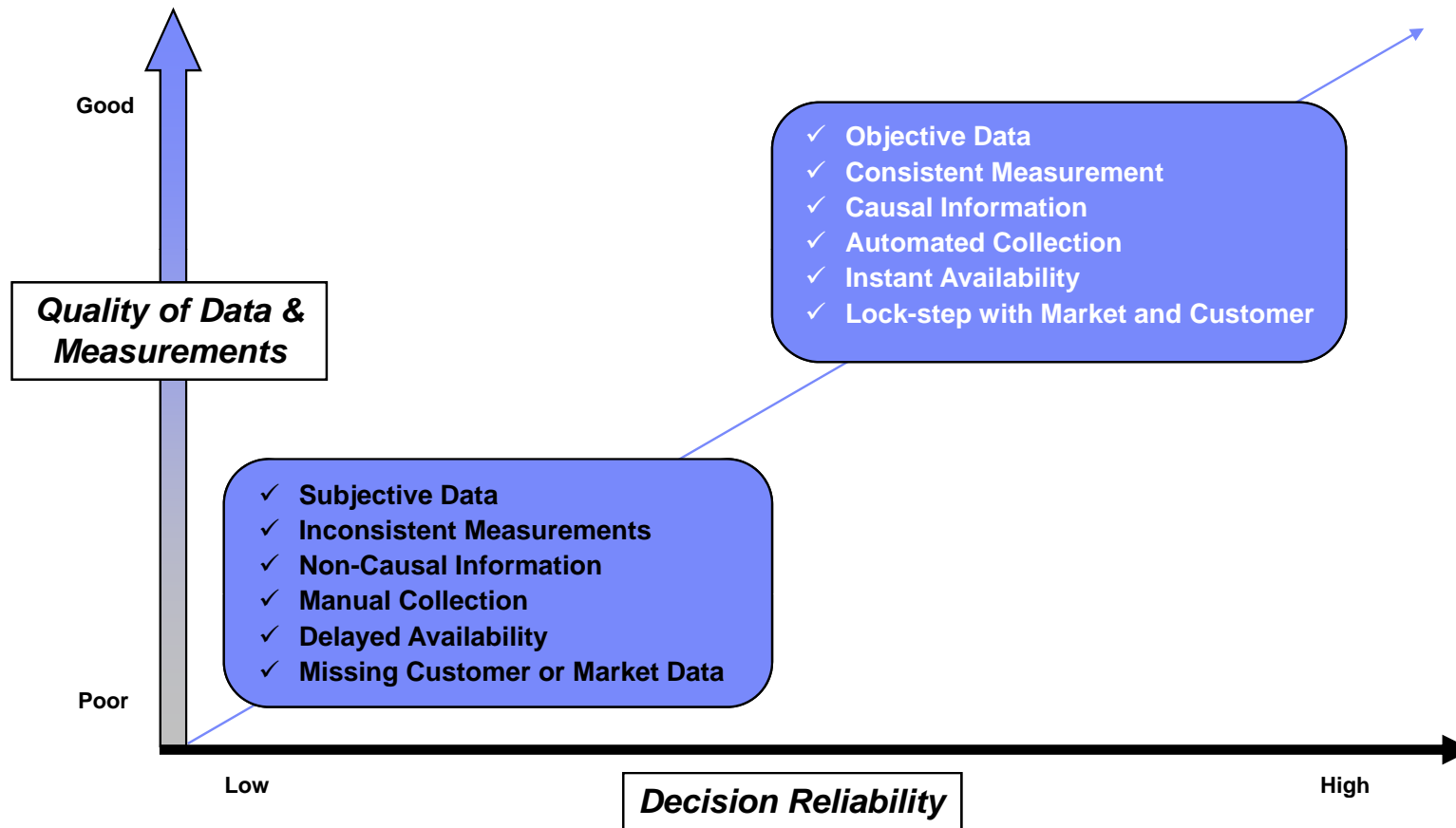
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Product Portfolio Management – Best Practices

Analyze and strategically balance capital and resource allocations across the enterprise portfolio

Portfolio Management

Manage ideas – big or small - from inception to market execution

Connect directly with customers and partners and engage them in setting direction and priorities

Market Management

Idea Management

Manage initiatives and programs that span multiple products and product lines

Program Management

Product Management

Manage product plans, roadmaps, offerings, editions, and scope

Deploy a consistent and open decision making process

Strategic Decisions

Maintain alignment with strategic and business goals by exposing the decision making process to the entire team, and applying consistent criteria at all levels of the organization

Strategy (business)
- ✓Target Markets
- ✓Opportunities

Financial (enterprise)
- ✓Revenue
- ✓Cost Avoidance

ROI (portfolio)
- ✓Value
- ✓Satisfaction

Coordination (initiative)
- ✓Investment Level
- ✓Product-lines

Project / Product (Team)
- ✓Scope
- ✓Quality
- ✓Time

Tactical Decisions

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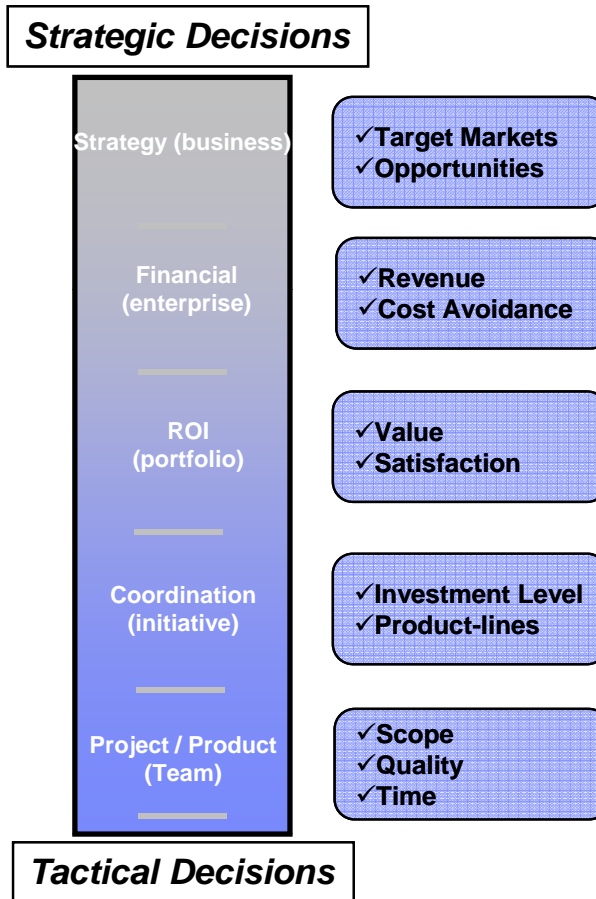
Increase the use of objective data in decision making

Good

Quality of Data & Measurements

- ✓ **Objective Data**
- ✓ **Consistent Measurement**
- ✓ **Causal Information**
- ✓ **Automated Collection**
- ✓ **Instant Availability**
- ✓ **Lock-step with Market and Customer**

- ✓ **Subjective Data**
- ✓ **Inconsistent Measurements**
- ✓ **Non-Causal Information**
- ✓ **Manual Collection**
- ✓ **Delayed Availability**
- ✓ **Missing Customer or Market Data**

Poor

Low

Decision Reliability

High

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Interrogate investment levels across the portfolio

- Establish a "*Target Investment Level*" for each portfolio element:
  - ▶ Measure Strategic Alignment, Risk
  - ▶ NPV, IRR, Payback Period, Cost of Entry
  - ▶ Market Size, Competitive Position
  - ▶ Customer Requests, Competitive Position

- Assure that the portfolio covers the marketscape ➔ note missing category

Target Investment Level   Missing Category   Serious over-investment

P1   P2   P3   P4   P5   P6   P7   P8

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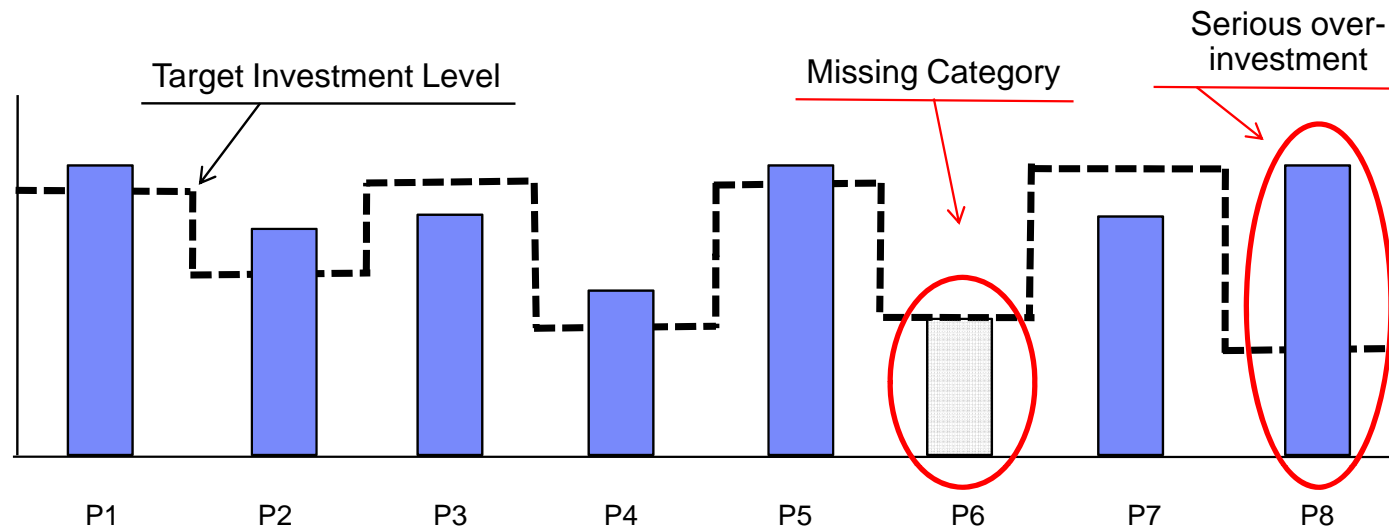
Drill Down into Product Line Sub-Portfolio

Portfolio Drill-Down

Target Investment Level

P1   P2   P3   P4   P5   P6   P7   P8
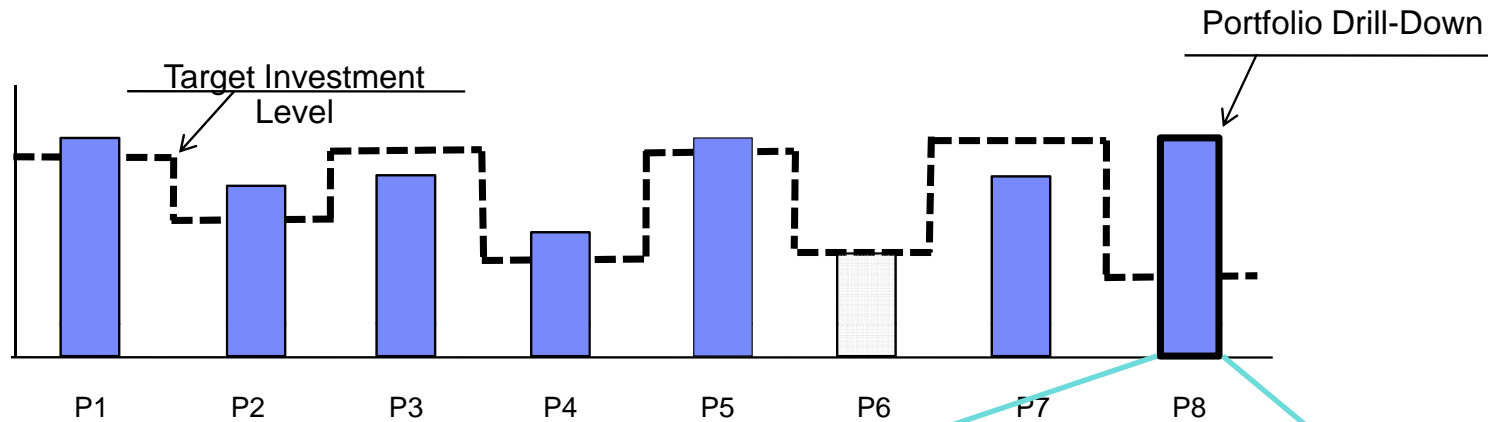
Drill down into product line P8, to evaluate over-investment and review individual products/offerings that comprise the product line and again balance investment against similar drivers.

Product-Line Target Investment Level

P8-a   P8-b   P8-c   P8-d   P8-e

19
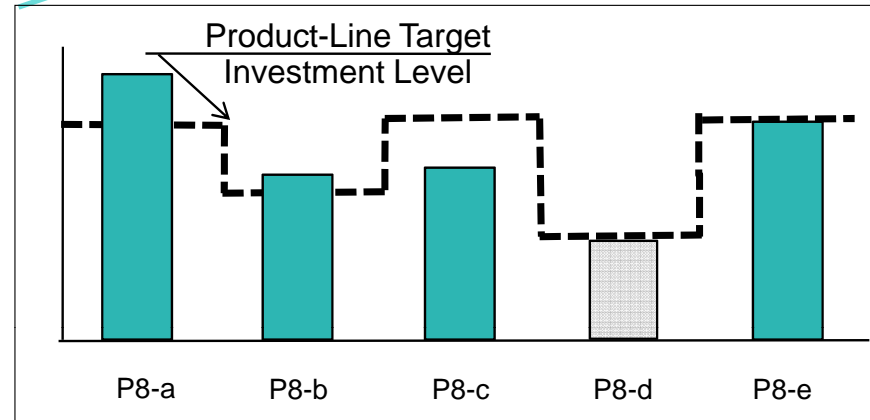
Project level scope decisions, still aligned to strategic goals

Product-Line Target Investment Level

P8-a   P8-b   P8-c   P8-d   P8-e
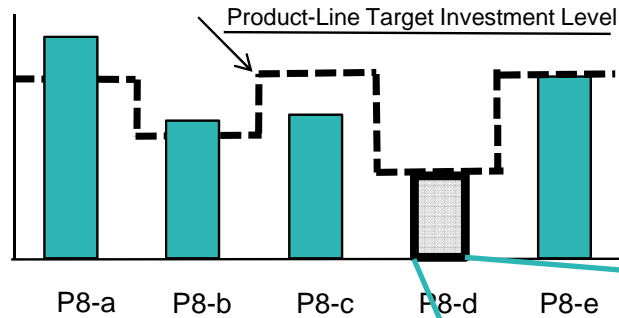
Make tough portfolio choices and strike a balance that achieves business goals and satisfies customers.
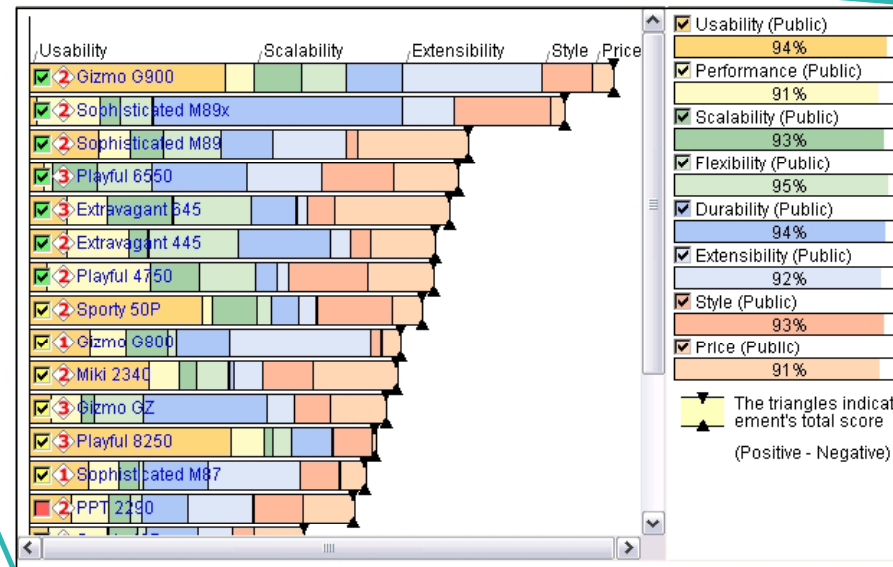
Corporate Product Portfolio

| LOB 1 | LOB 2 | LOB N |

Roadmap

Prod Group 1	Prod 1
Prod Group 2	Prod 2	*Version 1*	*Version 2*	*Version 3*
Prod Group 3	Prod 3
Prod Group 4	Prod 4	Feature 1	Func Req 1	Technology 1
Prod Group 5	Prod 5	Feature 2	Func Req 2	Technology 2
Prod Group 6	Prod 6	Feature 3	Func Req 3	Technology 3
		Feature N	Func Req N	Technology 4
Prod Group N	Prod N
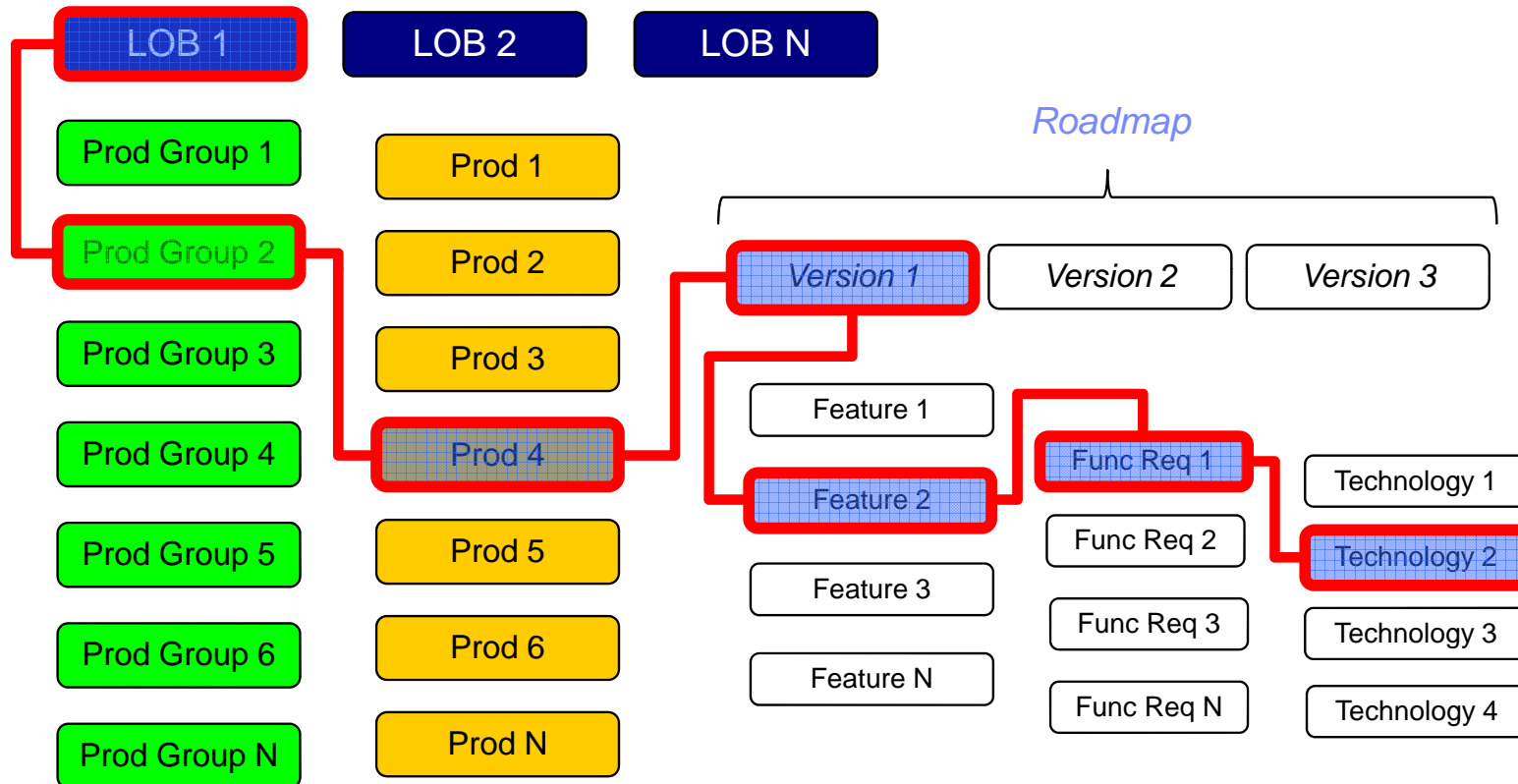
Portfolio, Product/Project, Requirements, Program
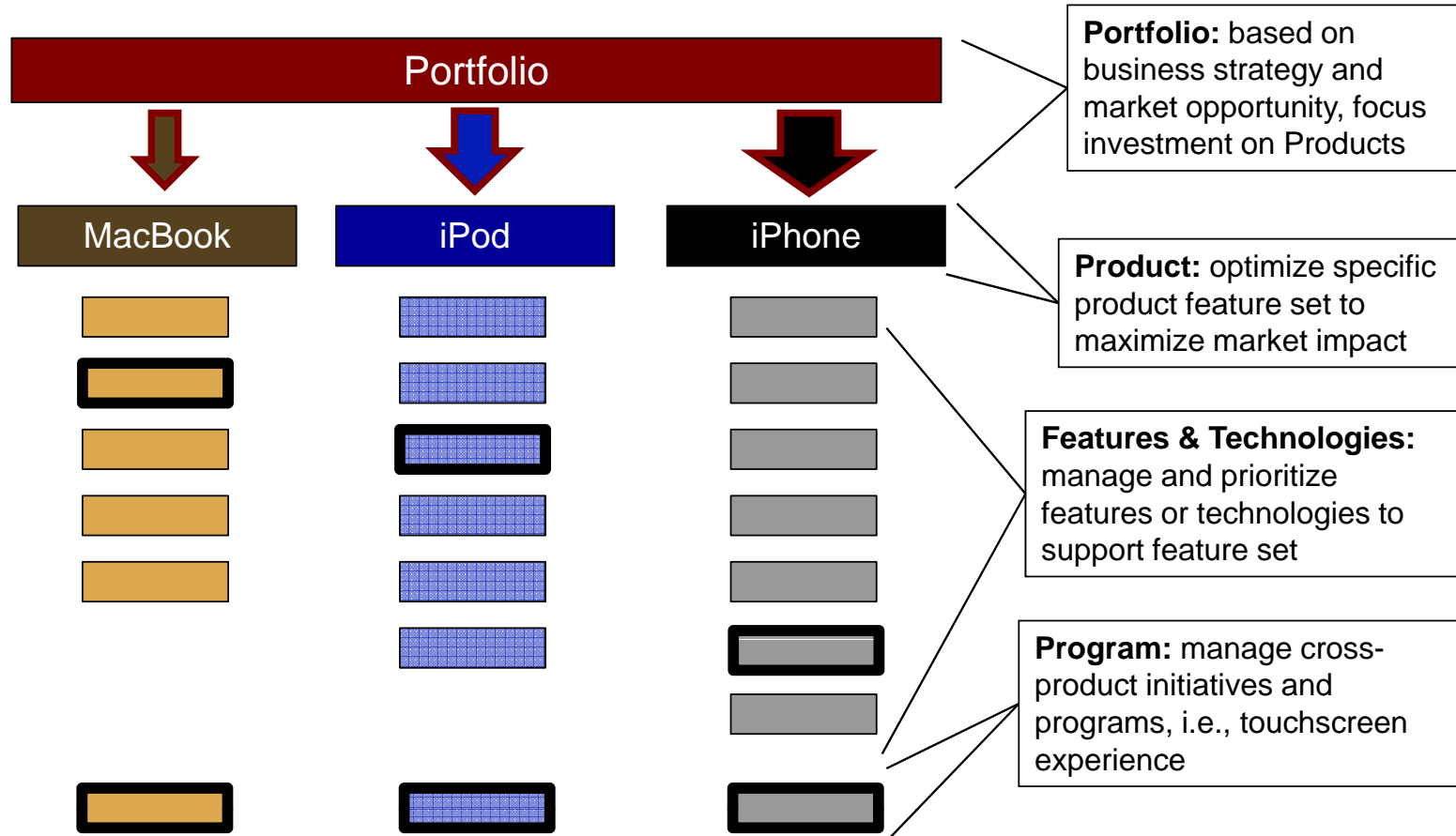
Portfolio

MacBook **iPod** **iPhone**

Portfolio: based on business strategy and market opportunity, focus investment on Products

Product: optimize specific product feature set to maximize market impact

Features & Technologies: manage and prioritize features or technologies to support feature set

Program: manage cross-product initiatives and programs, i.e., touchscreen experience

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Product Portfolio Management with Focal Point

Analyze and strategically balance capital and resource allocations across the enterprise portfolio

Portfolio Management

- View the entire product portfolio, analyze specific product lines, or drill-down to details of a single product

- Include competitor products for easy analysis and comparison

	Status	Quantity	Share
NEW	Product proposal	3	4.3%
	Allocated to investigator	4	5.8%
	Under investigation	3	4.3%
	Ready for prioritization	4	5.8%
	Approved for business case cre...	3	4.3%
	Finalize business case	7	10.1%
	Ready for review	8	11.6%
	Approved for detailed planning	4	5.8%
	Ready for funding decision	4	5.8%
	Approved for development	4	5.8%
	Under development	3	4.3%
	Delivered	13	18.8%
	Approved to be replaced	3	4.3%
	Approved to be retired	3	4.3%
	Taken off market	0	0.0%
	End of maintenance	0	0.0%
	Retired	2	2.9%
	To be clarified	1	1.4%
	Rejected	0	0.0%
	-	0	0.0%
		Sum: 69	

	Total NPV	Portfolio Risk Score
000	$1 759 000	21
000	$1 417 000	21
00	$634 000	26

Strategic Objectives Weig

Title	Importance
Strategic Objectives	

Project Portfolio
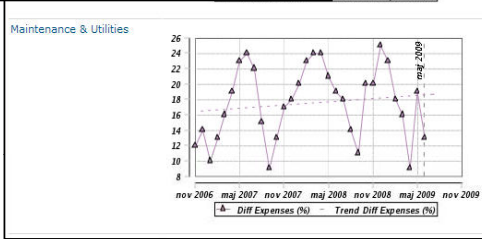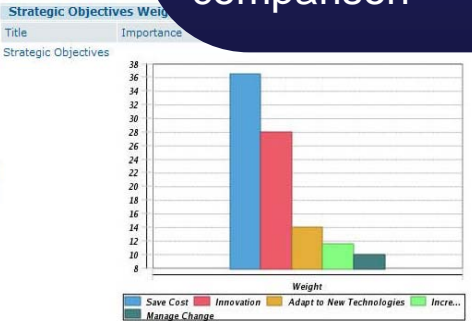
	Project State	Quantity	Share
NEW	Proposed	7	8,6%
	Accepted	22	27,2%
	Assessed	3	3,7%
	Finalize business case	7	8,6%
	Ready for prio	7	8,6%
	Approved for development	5	6,2%
	Delivered	3	3,7%
	Business Requirement	7	8,6%
	Backlog	6	7,4%
	Duplicate	6	7,4%
	To be clarified	2	2,5%
	Rejected	6	7,4%
		Sum: 81	

Product Portfolio Management with Focal Point

Connect directly with customers and partners and engage them in setting direction and priorities

Market Management

- Capture competitive SWOT and other intelligence and link to specific products to analyze competitive position

- Collect Win/Loss reports and link to new requirements, customers, and competitors

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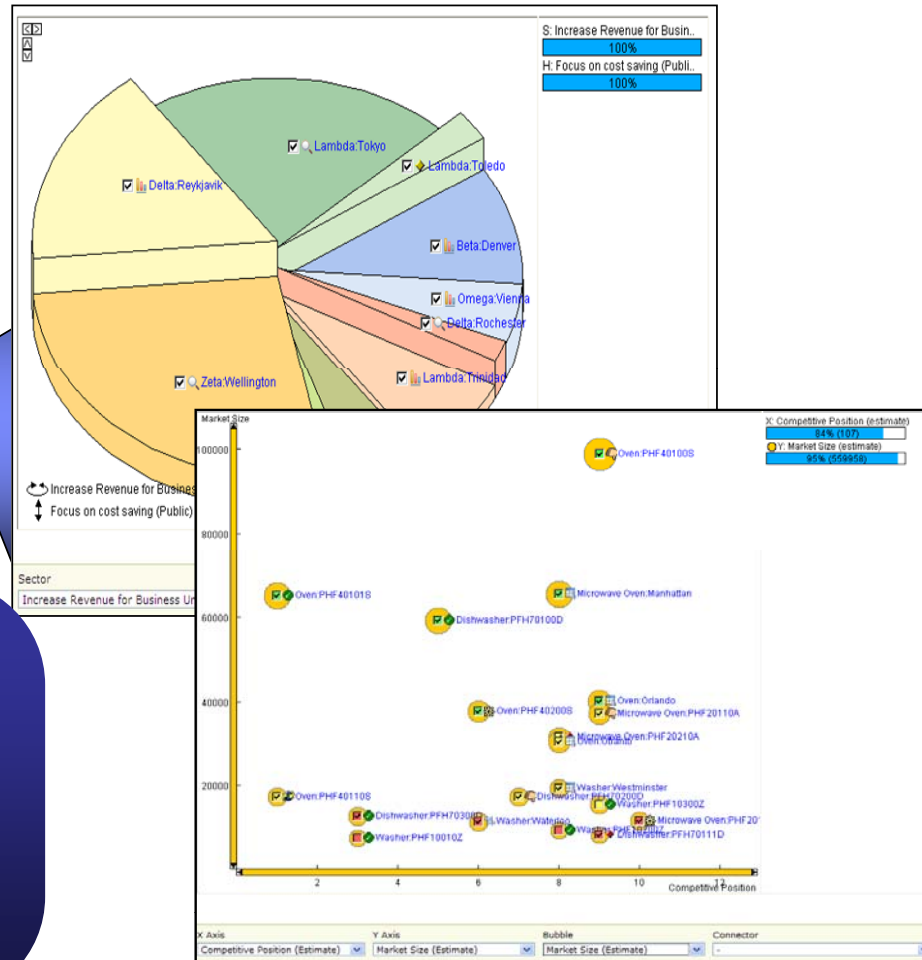
Product Portfolio Management with Focal Point

- Balance and sequence product releases to maximize value and meet strategic goals

- View stages, gates, milestones, requirements associated with each product in the pipeline

Manage initiatives and programs that span multiple products and product lines

Program Management
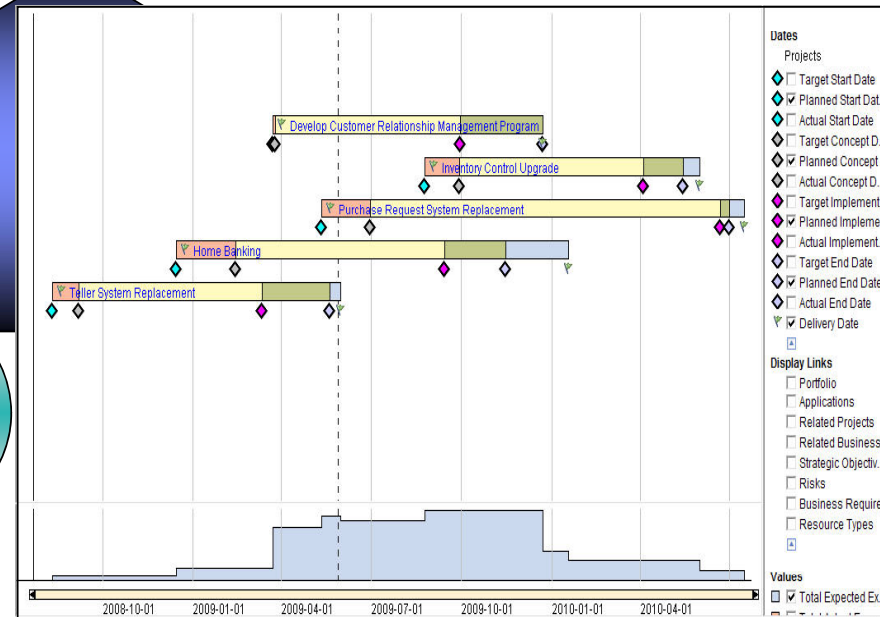
Product Portfolio Management with Focal Point

- Visualize the cost/benefit trade-off and see the impact on value delivered

- Include other criteria to build full picture of value
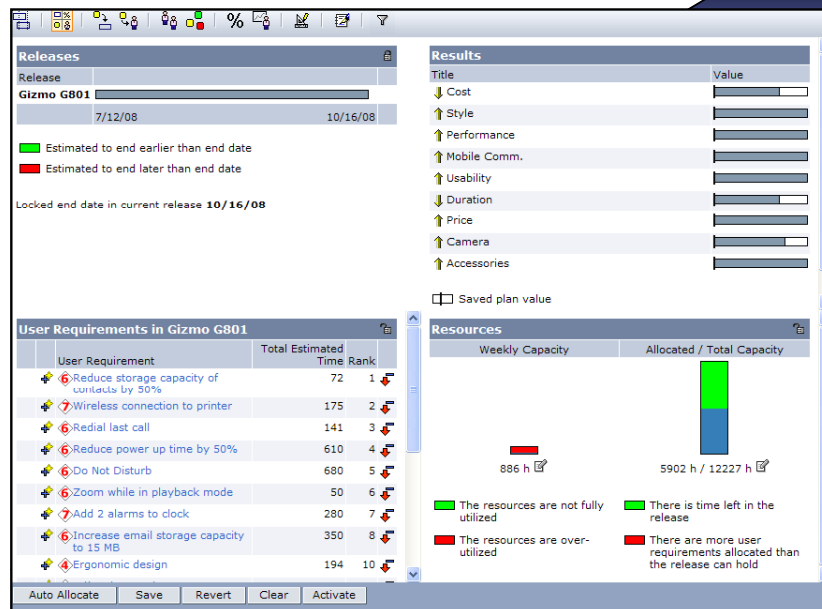
Product Management

Manage product plans, roadmaps, offerings, editions, and scope

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Product Portfolio Management with Focal Point

Manage ideas – big or small – from inception to market execution

Idea Management

- ▪Allow customers or internal stakeholders to vote on the value of features or products

- ▪ Compile the results of all votes to determine which products will be the "winners"

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Product Portfolio Management with Focal Point

Analyze and strategically balance capital and resource allocations across the enterprise portfolio

Structure processes to industry standard: Stage Gate, Pragmatic, Agile, etc.

Portfolio Management

Connect directly with customers and partners and engage them in setting direction and priorities

Manage ideas – big or small - from inception to market execution

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Idea Management

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Program Management

Product Management

Manage product plans, roadmaps, offerings, editions, and scope

Electronics market segments share common trends affecting product / portfolio innovation & decision making

Semiconductor Suppliers & Mfg Services	Industrial Equipment	Network Equipment Providers	Office Products & Computers	Medical Devices	Consumer Electronics & Appliances

Increased use of Software to Deliver Innovation

New Competitors

Brand and Customer Loyalty Erosion

Short Product Lifecycles

Commoditization

Pricing Pressures – Cost Savings

Product Portfolio Management with IBM Rational Focal Point
Deliver the Right Products, for the Right market, at the Right time

Automated Idea Capture
- Listen to your customer for new and innovative ideas
- Automate tactical activities like idea capture, and provide consistency to the evaluation and approval processes

Value-Based Selection
- Keep the focus of decisions on creating value for your customers and your business
- Decision support – prioritization – trade off analysis

Product Investment Visibility
- Manage and monitor your product portfolio as investments
- Release planning/product portfolio planning

Collaboration
- Web-based collaboration with customers and internal users
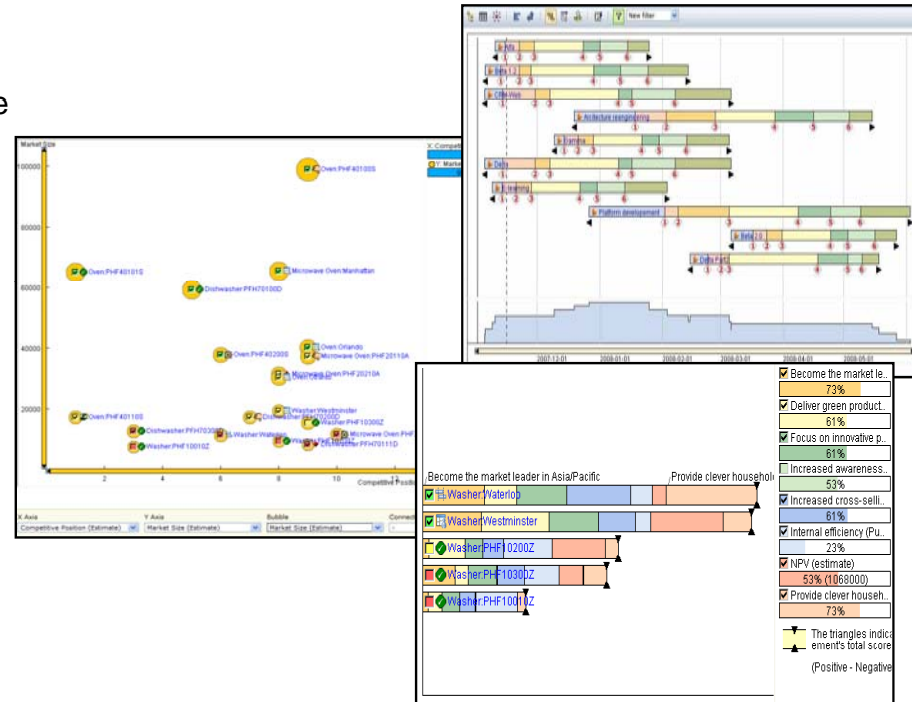
"Focal Point helps us discover the optimal set of customer features and balance those against the needs of our business, allowing us to deliver continual enhancements to our telematic solution."' Daimler FleetBoard

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PLM and IBM Rational Focal Point

- Focal Point closes the gaps in traditional PLM
  - ▸ Placing the business case and business-value at the core of the Portfolio and Innovation management process

- Addressing the high-stakes, high value front end of the lifecycle
  - ▸ Revenue Growth
  - ▸ Market Share Gain
  - ▸ Gross margin performance
  - ▸ Opportunity Cost and Trade-Off Analysis

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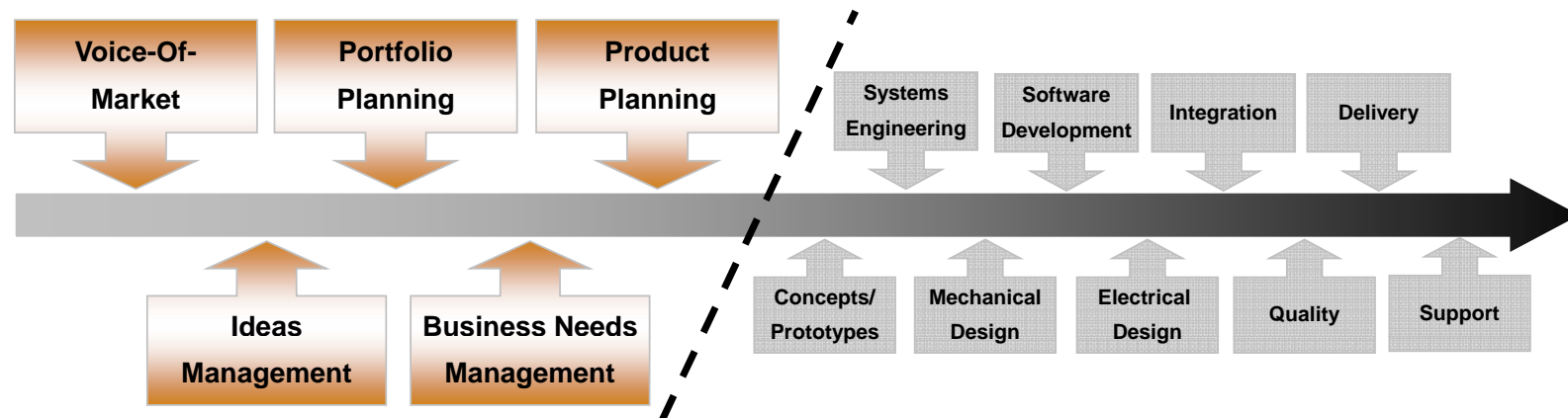
The Innovation Agenda: Something meaningful is happening

Our world is becoming
INSTRUMENTED

Our world is becoming
INTERCONNECTED

All things are becoming
INTELLIGENT
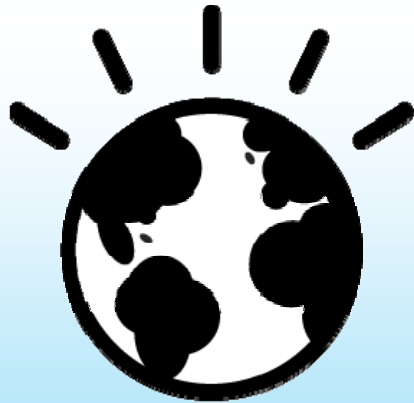
SMALLER. FLATTER. SMARTER.

*Resulting in transformational change
across all industries*

Smart Utilities   **Smart Traffic**   **Smart Offices**   **Smart Retail**   **Smart Telecom**   **Smart Food**   **Smart Banking**   **Smart Health**   **Smart Candy**   * * *

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- Process and portfolio management
- Change and release management
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- IBM Rational TV
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- IBM Rational Case Studies