

The latest research on product innovation

PDMA

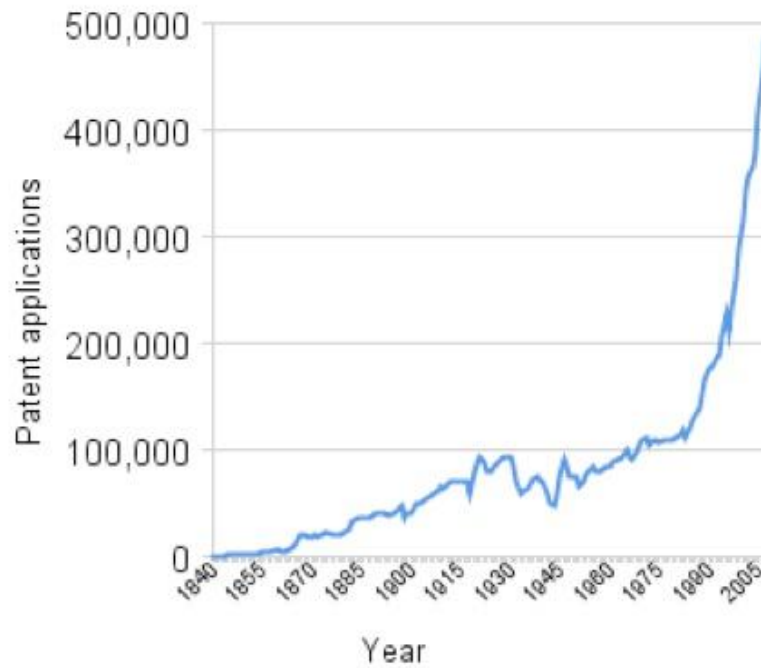
Presentation in Beijing
by Dr Allan M Anderson
16 April, 2016

Agenda

- The changing face of product innovation around the world
- What PDMA has learned about the best practices in product innovation
- Introduction to the Product Development & Management Association (PDMA)
- New Product Development Professional Certification

The changing face of product innovation

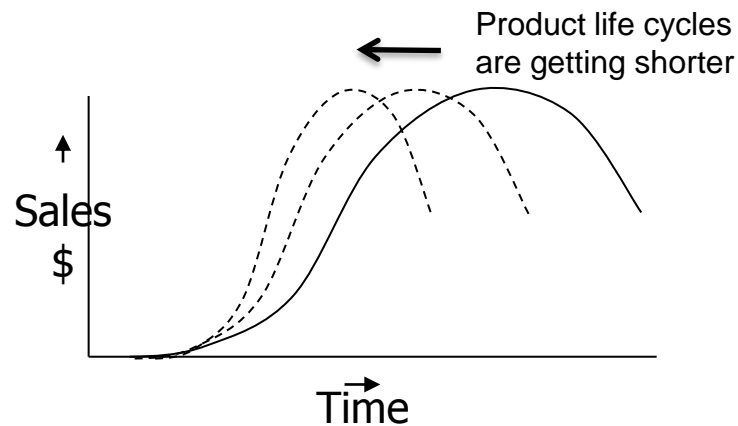
Total Patent Applications



Increase in
consumer wealth

Decrease in
technology
half-life

Communications,
social media



Globalization

Consumer demand
for “things”

Increase in
company capability

Product innovation practice since 1980. Dramatic increase in....

- Academic research
- Books and journal articles
- Conferences, seminars, workshops
- Consultancies
- University courses
- Professional certifications
- Company focus on product innovation

The evolution of product innovation practice



Continuous
improvement &
tailored practice

2000 Strategy

1990 Portfolio Management

1980 Stage-Gate process

What really defines the best companies in product innovation practice?

- They learn from others
- They adapt practices to their own company requirements
- They seek continuous improvement in their practices

It is not whether AGILE or LEAN
or STAGE-GATE is best

It is....
which practice, or blend of practices,
is best for our company

I will use, as the basis of my presentation, results from studies of product innovation practices carried out by the PDMA over the past 20 years.

The CPAS (Comparative Performance Assessment Study)

What PDMA has learned about Product Innovation Practice

The CPAS study

- A survey of a wide range of companies to identify their product innovation practices
- Has been carried out 4 times over the past 20 years – the most recent in 2012
- The earlier studies focused mainly on US companies. The most recent study includes companies from Asia and other parts of the world.

What differentiates the BEST from the REST?

The CPAS study seeks to identify the practices that lead to better product innovation outcomes:

What differentiates the BEST companies from the REST

An important note...

- Although some Asian companies were included in the most recent study these are too few to make any truly reliable conclusions.
- Our conclusions are founded very much of the experience of US companies.
- In extending these conclusions to Chinese companies I am very aware of the political and cultural differences which impact the successful management and organization of these companies.

Key differentiating factors

- 1) Innovation culture
- 2) New products strategy
- 3) Portfolio management
- 4) New product process
- 5) The front end of innovation
- 6) Development tools
- 7) Measures and metrics

1) Innovation culture

- The best companies:
 - Failure is understood
 - Managers establish objectives
 - Innovation considered in recruitment
 - Use external communication
 - Innovation and risk-taking are valued
 - Open to constructive conflict
 - Effective communication internally

1) Innovation culture (contd)

- Clearly the company culture is significantly impacted by the “national culture”
- It would be wrong to assume that the cultural dimensions that are important in the United States are equally important in China
- Surprisingly, the 2012 CPAS study showed a high level of consistency across Europe, the US and Asia for each of the cultural dimensions in the previous slide

2) New products strategy

- The best companies:
 - Use a well defined new products strategy to direct all new product development activities
 - Use a “first to market” strategy
 - More likely to focus on sustainability
 - More likely to apply intellectual property considerations
 - Apply a “geocentric” business model (operations in multiple countries)

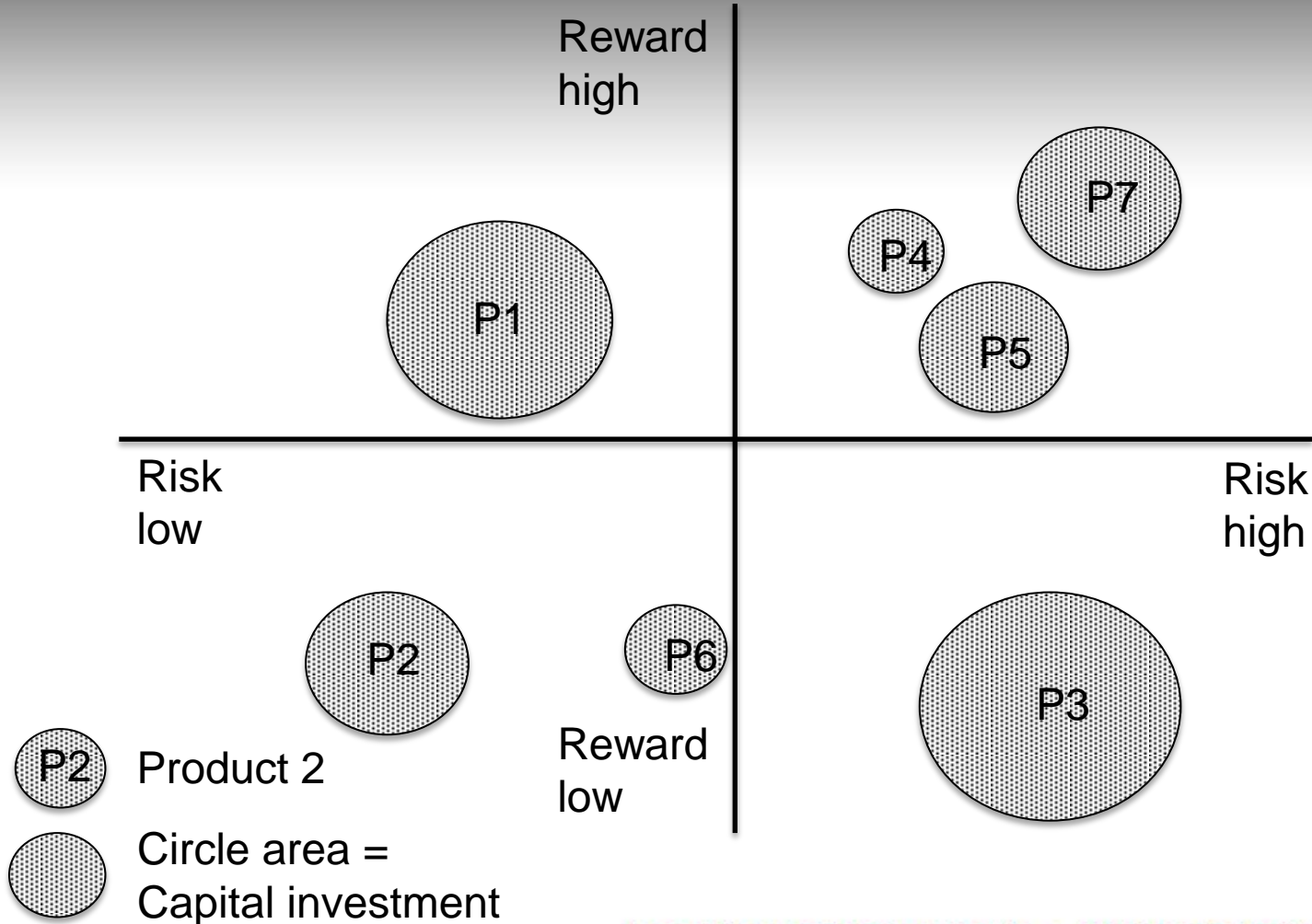
2) New products strategy (contd)

- The best companies focus more on a **globalization strategy**:
 - Use specialized global tools
 - Manage transnational transfer of ideas
 - Manage new product processes globally
 - Develop global sustainable advantage
 - Global collection of “voice of customer”
 - Manage the product portfolio on a global basis

3) Portfolio management

- The best companies:
 - Use portfolio management tools to select projects and to ensure the on-going of balance across projects:
 - Radical vs incremental
 - Low vs high risk
 - New vs existing markets
 - Specific tools that are used include:
 - Scoring models
 - Strategic buckets
 - Financial models

3) Portfolio management (contd)



4) New products process

- The best companies:
 - Use formal, cross-functional processes
 - Continuously re-design the process
 - Use specialized structures to drive new product development
 - Adopt flexibility according to product category
 - Senior managers understand and support the new products process

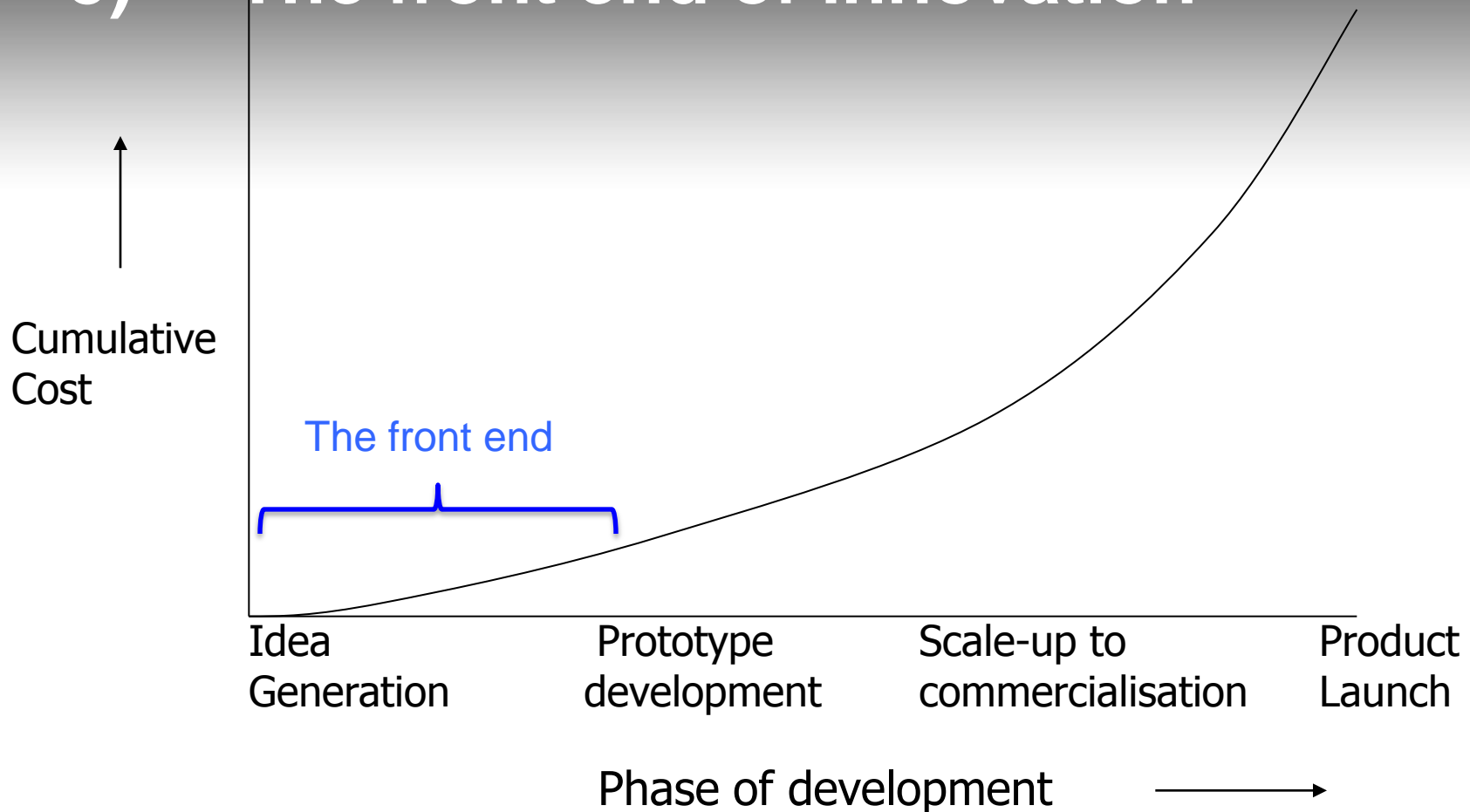
4) New products process (contd)

- The formal process depends on the nature of the company and product category:
 - Stage-Gate®: highly disciplined, idea generation to launch, formal “gate” reviews (Stop/Go decisions)
 - Waterfall: sequential process, strict order of activities
 - Lean: based on lean manufacturing, encourage speed and reduce wasted effort
 - Agile: flexible, focus on speed of delivery, generally suitable for specific stages (like design, prototype, test)

4) New products process (contd)

- Many models have been developed for the new products process
- No single model is right for all situations
- A company should:
 - Select the right model for it company
 - Use different models for different products (e.g. hardware and software)
 - Merge or blend models as appropriate
 - Review and change models over time

5) The front end of innovation



5) The front end of innovation

- The best companies:
 - Spend considerably more effort to understand customer needs
 - Use formal processes for idea assessment (recognizing the importance of making the right decisions at this early stage)
 - Use open innovation to gather and develop new ideas
 - Use social media – discussions forums, blogs, innovation hubs, wikis etc to gather customer information and opinion

Crowdsourcing: Lego

Lego has a dedicated website for fans and customers to contribute their own product ideas. Users can vote for their favourite idea, state how much they'd pay for it and explain why they like it so much. If more than 10,000 people support the idea then it goes to the official Lego review board, who decide whether or not to put it into production.

<https://ideas.lego.com/>

6) Development tools

- The best companies:
 - Use market research tools significantly more
 - Use engineering design tools more frequently
 - Place more emphasis on project planning tools

6) Development tools (Contd)

- Market research:
 - Focus groups
 - On-line communities
 - Lead user groups
 - Ethnography
 - Beta testing
 - Customer site visits
- To the future: BIG DATA???

6) Development tools (Contd)

- Engineering and design:
 - TRIZ
 - Theory of constraints
 - Six Sigma
 - Failure mode analysis
- Project planning:
 - GANTT, critical path, PERT

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7) Measures and metrics

- The best companies:
 - Use formal metrics for measuring and reporting on new product performance
 - They use metrics for both outputs and process:
 - Outputs - such as profits from product development over the past 3 years
 - Process – such as milestones on time or time to market
 - Metrics are used as a basis for learning and continuous improvement

Introduction to PDMA

The origin of PDMA

The Premier Professional Association for
Product Development Professionals
worldwide

PDMA membership

- Global
- Including:
 - Industry practitioners
 - Academics
 - Service providers

The global affiliates

- Based in Chicago in the United States the PDMA has 17 international affiliates in:
 - Europe
 - South America
 - Asia
 - Pacific

PDMA is proud of its body of knowledge

- Through its academic research and publication
- Best practice benchmarking
- Best practice awards
- National and international conferences
- Professional certification

Maintaining a platform of best practice and communicating with companies

Over the past 40 years PDMA has researched product innovation practices to provide a basis for continuous improvement in companies

This research now provides the foundation for
The Product Development Professional Certification

New Product Development Certification (NPDP)

Not all of what has been learned in other countries
will be appropriate to Chinese companies

But this knowledge will enable Chinese companies
to better understand the basic principles of
new product development and apply this
understanding to their situation

New Product Development Professional Certification (NPDP)

- PDMA offers the only internationally recognized professional certification in new product development and product management
- PDMA has formed a strategic partnership with TCSAFEA to launch the NPDP in China

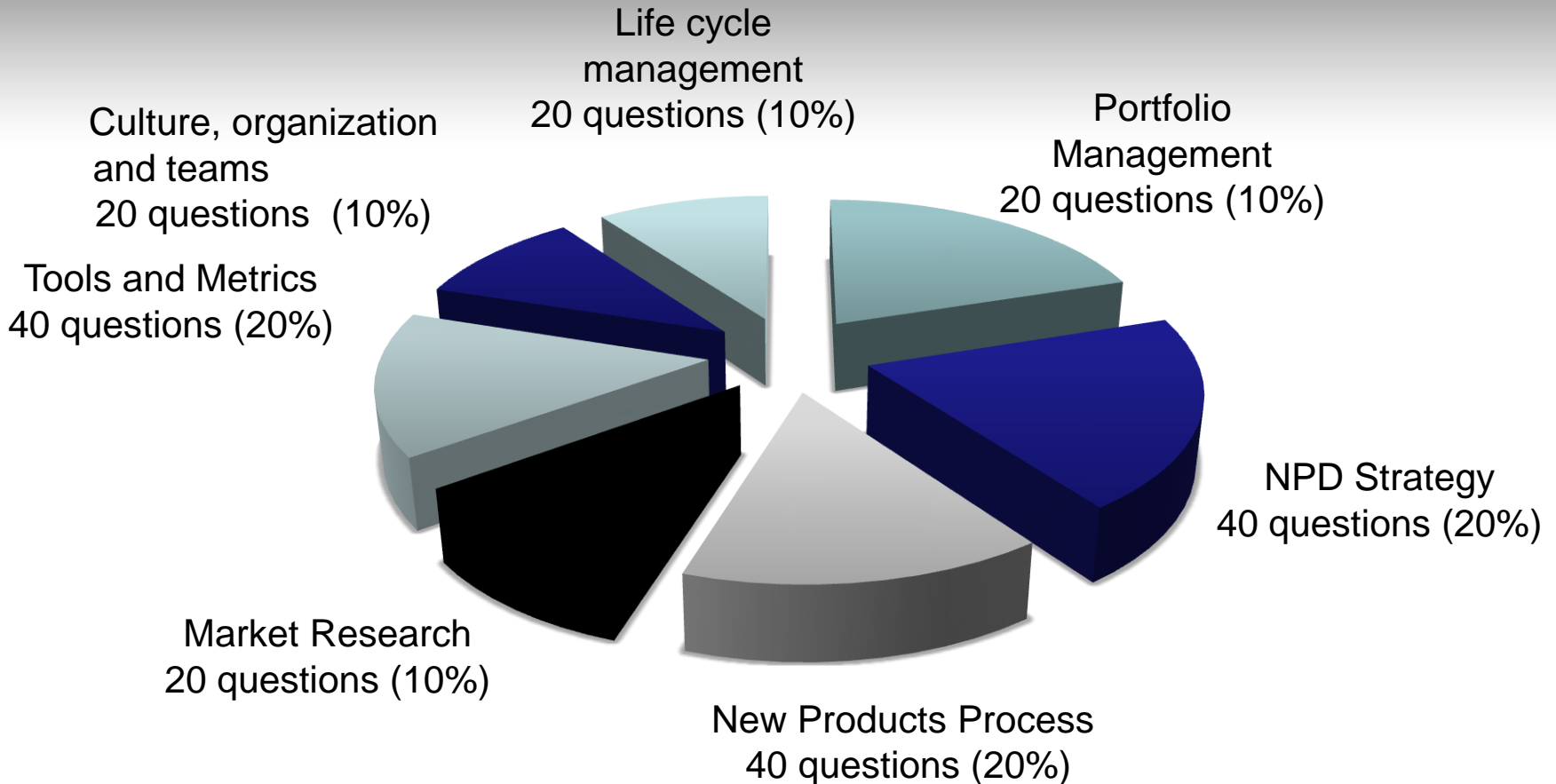
Benefits of certification:

- For individuals
 - Confirms mastery of NPD principles and best practice
- For management
 - Identifies those who have the product development skills and knowledge to move into leadership roles
- For organizations
 - Promotes better NPD practice leading to greater new product success

Specific benefits to Chinese companies

- China's new five year plan places significant emphasis on generating revenue for high value products – both domestically and internationally
- Chinese companies will need to develop:
 - The internal capability to develop, manufacture and market these products
 - The strategies and practices that will enable the effective and efficient development of the new products

NPDP content



Strategy

- What is a strategy
- The role of product innovation and product management in a company
- Frameworks for categorizing and selecting product strategies
- Product platform strategies
- Market strategy frameworks
- Technology strategy frameworks
- Types of innovation – sustaining, disruptive etc

Portfolio management

- What is portfolio management?
- How to develop a product portfolio
- Frameworks for analysis of current product portfolio
- Frameworks for product portfolios – breakthrough, platform, derivative , support
- How to manage an product portfolio
- Capability and resource planning
- Staff and management roles in portfolio management

New product process

- The basic principles of an product innovation process
- Product innovation as a risk vs reward decision process
- Comparison of different models for the NPD process – agile, lean IPD, waterfall, stage-gate
- Selecting the best processes for different companies and products

Tools and metrics

- Financial analysis and opportunity assessment – NPV, RoI, EVA etc
- Ideation tools – TRIZ, brainstorming, 6 hats etc
- Foresighting – scenarios, Delphi
- Project management – basic and related to PMP
- Risk management
- Six sigma, house of quality
- Product design specifications
- Product innovation performance metrics

Organization, people and teams

- Organizational structures to enhance NPD
- Characteristics of high performing teams
- Developing an innovative culture
- The role of senior management

Market research

- Market research at various stages of the product innovation process – to assist decision making
- Types of market research:
 - Secondary
 - Market surveys
 - Product testing – alpha, beta
 - Big data
 - Social media
- Post launch audits

Life cycle management

- Product life cycle
 - Managing the product launch
 - Managing the product through stages of its life cycle
- Sustainability
 - Sustainable innovation
 - Sustainability and strategy
 - Sustainability tools

The Product development & Management Association looks forward to supporting, together with TCSAFEA, the development of the capability required to achieve China's plans.

Thank you