
Creativity & Innovation

Building capability and a path to
Growth

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“Imagination is more important than
knowledge.”

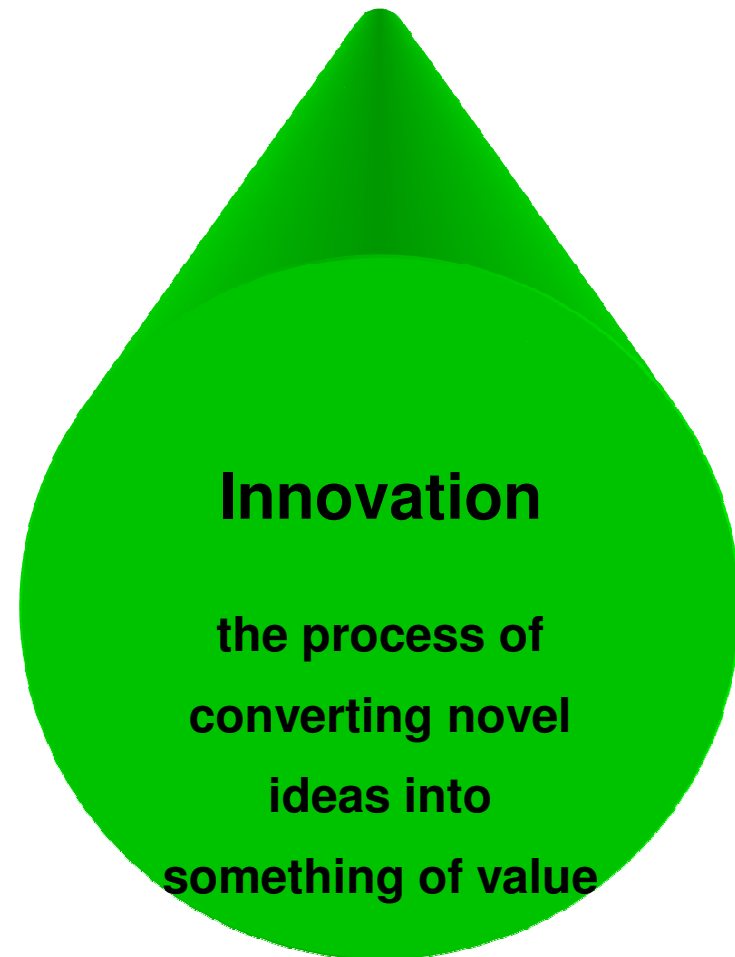
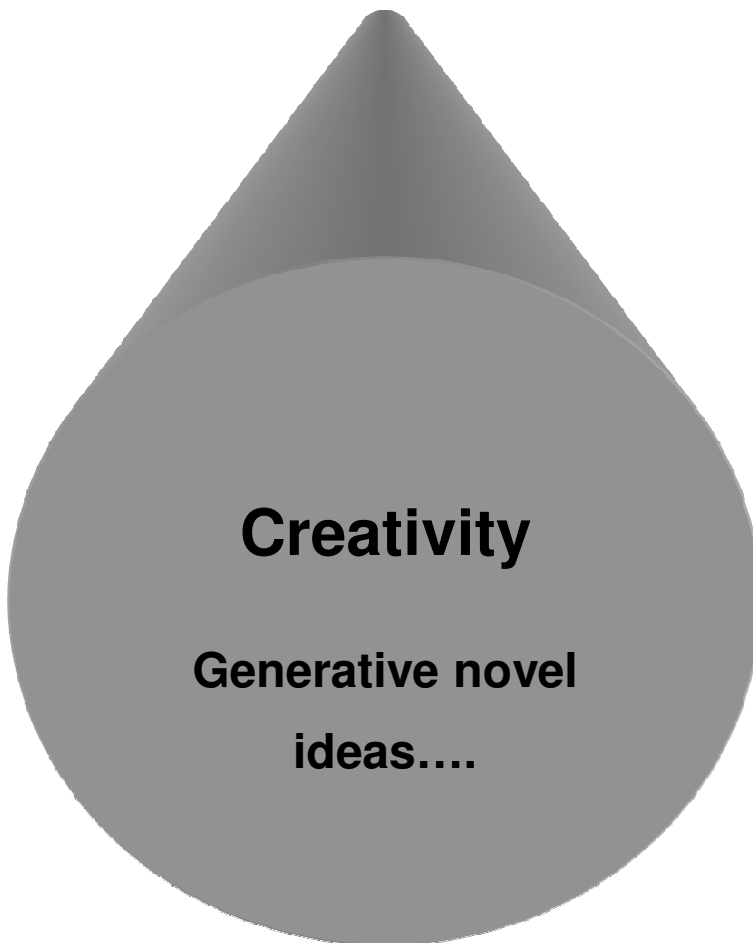
- Albert Einstein

Highlights

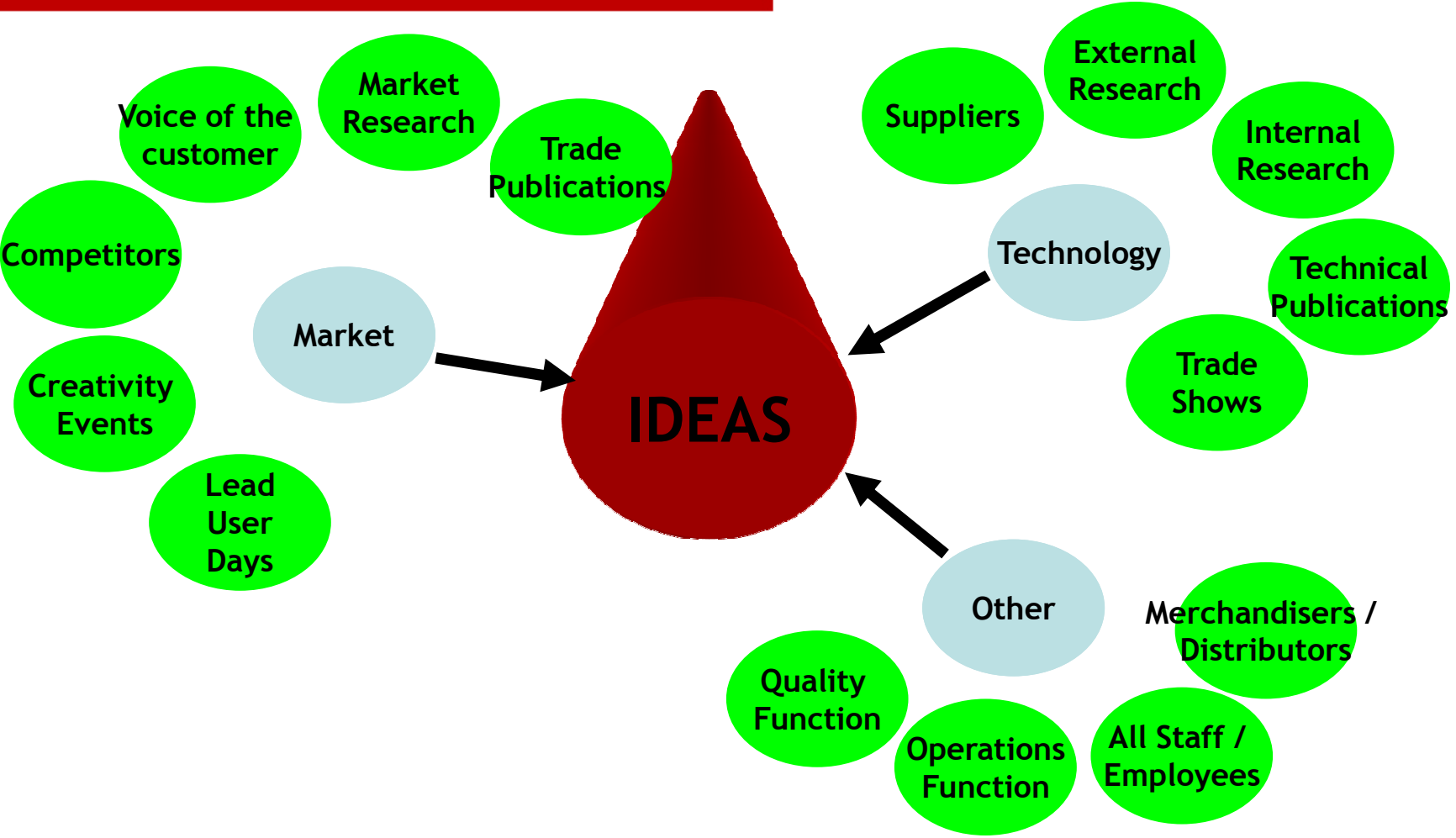
- Creativity & Innovation
- Innovation
- Innovation – Model, Programs & Roadmap
- Innovation - Data Sources / Relationships
- Innovation - Using DMAIC
- Innovation Framework
- Metrics & Measures

Creativity & Innovation

Creativity & Innovation



Ideas



Innovation

Why Innovate

- The enterprise that doesn't innovate inevitably ages and declines
- New products & innovativeness usually increase company value
- Companies that are doing well today invariably have an enviable stable of new products
- New products represent an increasing % of companies' sales revenues & profits

Critical Success Factors

- Innovation culture within the organisation and led by CEO
- Develop unique products that solves and meets customers' needs better than competitive products
- Define the new products strategy along with the process which has acceptance from all stakeholders
- Follow a disciplined and systematic Innovation process
- Define program and project structure including stage gate reviews
- Do your homework with regard to technical, financial and market assessment
- Use an “Outside In” customer focused perspective

Perspective

- Innovation is a strategic imperative
- Requires innovation functions as a core competency within an organisation
- Incremental or radical innovation
- New Products Innovation Process is a key business process

Challenges

- Change management implication
- Process ambiguity
- Visualisation of vision, goals and progress
- Internal and external stakeholder communication
- Collaboration and communication between cross functional teams
- Learning curve

Minimise Risk Exposure

- Base innovative efforts on your experience.
- Focus on products or services that have been largely overlooked.
- Be sure there is a market for the product or service you are hoping to create.
- Pursue innovation that customers will perceive as adding value to their lives.
- Focus on new ideas that will lead to more than one product or service.
- Raise sufficient capital to launch the new product or service.

Innovation – Model, Programs & Roadmap

Innovation Model

Current Practices – Today			Future Growth
Direction	Generate innovation	Sustainable growth	Change competition landscape
<ul style="list-style-type: none"> ▪ Leadership ▪ Vision ▪ Governance ▪ Focus ▪ Creativity 	<ul style="list-style-type: none"> ▪ Operational performance ▪ Technology ▪ Resource capabilities and competencies ▪ Industry partnership ▪ Resource forecast and allocation ▪ Surveys 	<ul style="list-style-type: none"> ▪ Outcomes ▪ ROI ▪ IRR / NPV ▪ Client assessments ▪ Intellectual property ▪ Corporate viability ▪ Industry association 	<ul style="list-style-type: none"> ▪ Competition ▪ Scenario planning / Game theory ▪ Extrapolated trends ▪ Market consequences ▪ Alliances – partner and third party ▪ National association – Thought leader

Innovation Program

Focus	Strategies
Environment Scan ("Know Why")	<ul style="list-style-type: none"> ▪ Understand the markets, customer, competitors, industry trends, legal & fiscal requirements along with the drivers ▪ Segment the market and identify target in the attractive segments ▪ Determine new customer and their purchasing reasons ▪ Develop a marketing communication strategy
Product / Services ("Know What")	<ul style="list-style-type: none"> ▪ Translate current and future customer needs and preferences (unsatisfied / unstated needs) into product performance requirements ▪ Decide how to differentiate our offerings ▪ Set multi-year (3 ~ 5 years) targets and plan for product / R&D evolution
Process ("know how")	<ul style="list-style-type: none"> ▪ Align resources for product performance ▪ Define capabilities and competencies for differentiation and the value proposition along with investments ▪ Identify and capture potential disruptive strategies including technologies ▪ Align demand and supply chain to fill the gaps
Resources competency ("know who")	<ul style="list-style-type: none"> ▪ Understand and integrate process, procedures, systems and people required to deliver the products and services
Time Lines ("know when")	<ul style="list-style-type: none"> ▪ Define time lines and get acceptance from the senior management along with the business case, blue print and governance

Innovation Roadmap

Area	Inputs	Outputs
Market Roadmap	<ul style="list-style-type: none"> ▪ Customer needs ▪ Competitive threats ▪ Emerging markets and trend analysis 	<ul style="list-style-type: none"> ▪ Prioritised customer needs ▪ Opportunities and risks ▪ Key growth area and opportunities to have “first mover advantage”
Product / Services	<ul style="list-style-type: none"> ▪ Window of opportunity ▪ Prioritised customer needs ▪ Existing capabilities 	<ul style="list-style-type: none"> ▪ Product / service evolution plans ▪ Desired attributes – products & services ▪ Fix the gaps
Technology / process	<ul style="list-style-type: none"> ▪ Process evolution plans ▪ Existing capabilities ▪ Benchmarking 	<ul style="list-style-type: none"> ▪ Process / resources / technology development plans ▪ Scorecards ▪ Gaps ▪ Risks and mitigation
Program office	<ul style="list-style-type: none"> ▪ Program process, transformation change, governance and outcomes 	<ul style="list-style-type: none"> ▪ Project process, transition, product outputs and business case management

Innovation - Data Sources / Relationships

Innovation Data Sources

Scope	Data	Customer Connection	Research
<ul style="list-style-type: none">▪ Trend analysis▪ Competitive intelligence▪ Purchasing scenarios	<ul style="list-style-type: none">▪ Customer database & CRM▪ Benchmarking▪ Sales Data	<ul style="list-style-type: none">▪ Customer immersion techniques▪ Personal contacts▪ Observation and shadowing	<ul style="list-style-type: none">▪ Quantitative and qualitative research▪ Ad-hoc research

Use (Six Sigma / Lean / TQM) – PDCA or DMAIC

Innovation Relationship

System	Example 1 = transportation	Example 2 = Health care	Example 3 = Healthy Society
Sub System	Engine Brakes Seats Paint	Equipment Doctor Nurse Records	Hospitals Healthcare Drug companies Doctors
Current System	Car	Doctor's surgery	Healthcare
Super System	Transportation	Healthcare	Healthy Society

Innovation - Using DMAIC

For Idea Generation..

- A vision for change
- Remove fear of change
- Move thinking towards a venture capitalist
- Incorporate dynamic suggestion scheme
- Introduce lateral thinking
- Give everyone 2 jobs
- Collaborate
- Welcome failure
- Environment for calculated risk taking
- Build prototype
- Be PASSIONATE

Using DMAIC - Define

- Realise that there is a decision to be made.
- Define the problem statement
- Form the issue as a single sentence. An issue is the statement about the problem being solved or the question being answered.
- List the stakeholders. The stakeholders include everyone who will be affected by the decision.

Using DMAIC - Measure

- Develop multiple alternatives for resolving the issue.
- Identify necessary and sufficient conditions for the mode of failure
- Work to generate a set of discriminating criteria and their targets.
 - Identify targets as 1) qualitative, 2) quantitative (<, >, =)
- Assign the appropriate criteria to the appropriate stakeholder(s).

Using DMAIC - Analyse

- Study the system to identify conditions present during failure and eliminate potential causes until mode is verified
- Assign cause and create cause and corrective action
- Evaluate the alternatives relative to the criteria by
 - level of evidence,
 - level of certainty
 - rationale.
- Manage and visualise the evaluation uncertainties (using belief maps, for example).
- Fuse the evaluations using a structured method to find
 - alternative satisfaction
 - alternative risk

Using DMAIC - Improve

- Base future activity on a what-to-do-next evaluation.
 - understand the cost and benefit of doing more work to improve the decision.

Using DMAIC - Control

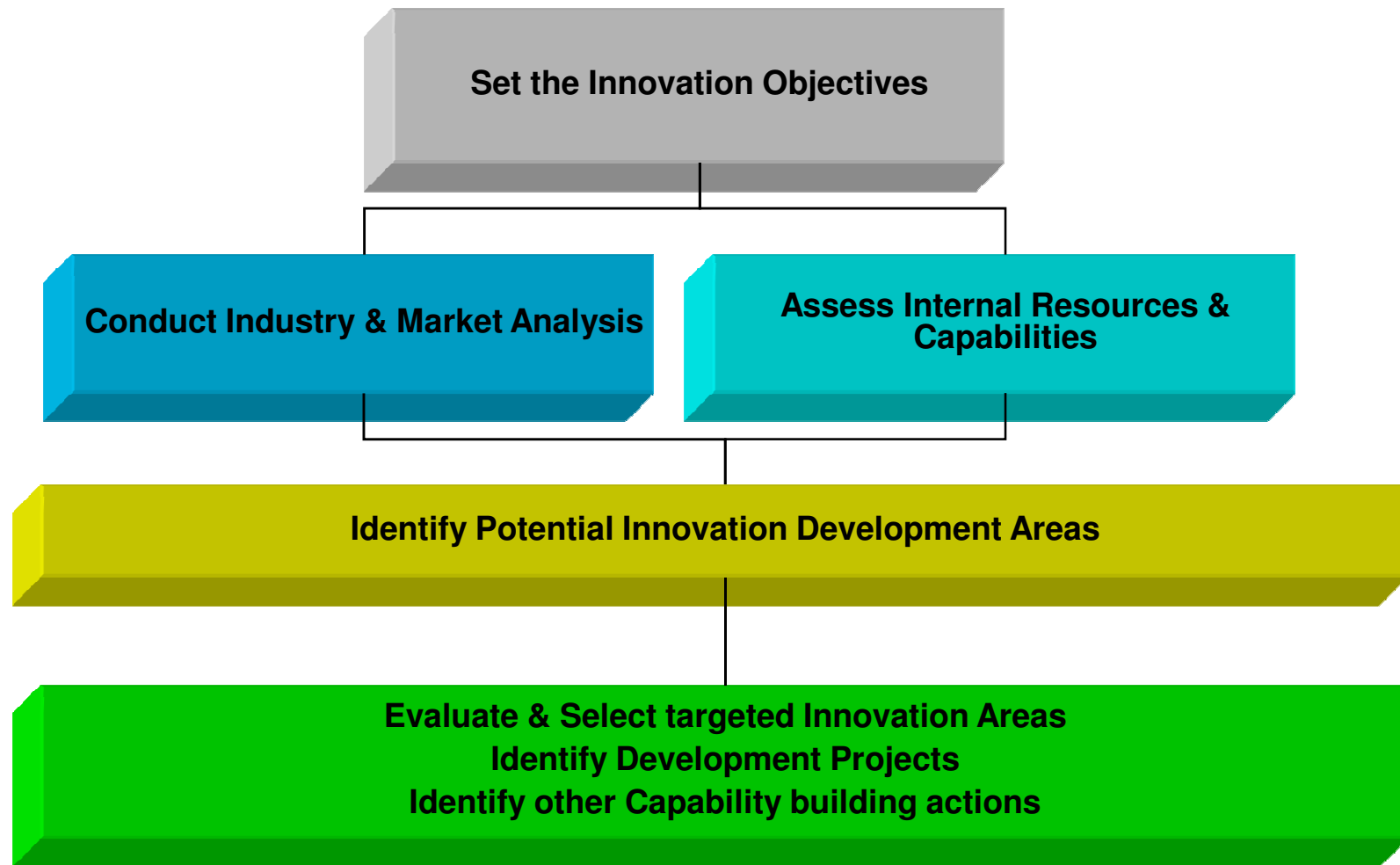
- Document the decision and the reasoning behind it.

Innovation Framework

Need for a Framework

- Framework for cross-functional alignment and integration
- Enables effective decision making in line with the vision
- Align future goals and product plans
- Align R&D spending and product development initiatives
- Aligns product portfolio with corporate and market needs
- Provides visibility into strategic and program direction
- Integrates data, product plans, and goals
- Identifies gaps in product, technology & capability plans
- Provides direction to project teams
- Shared vision of strategy alignment and execution
- Capture knowledge as the effort progresses

Framework



Innovation Objectives

- Sales/Profits from new products
 - By product group
 - By market
 - By geographic areas
- Percentage of sales/profits from products that are less than 3/5 years old
- Product strategy objective statements
 - Gain a presence in a new market
 - Exploit new opportunities in an existing market
 - Defend market share

Industry / Market Analysis

- Industry / Market Analysis
 - Understand the industry structure
 - Market segment, sizes and trends
 - Changing customer needs

- Competitor Analysis
 - Outline the market / segment share
 - Understand products offered and how they are differentiated

Resource Capabilities & Competencies

- Core capabilities & Competencies
 - In / Out bound logistics
 - Marketing
 - Research & Development
 - Manufacturing
 - After Sales
 - Finance
 - Operations

Development Areas

- Industry segment / value chain attractiveness
- Changes in customer needs or values & impact on the industry and its key players
- New opportunities that better meet customer needs and / or capitalise on a changing environment
- Opportunities for new product development options

Evaluation & Selection

- Business Strength / Market Opportunity Matrix
 - Business Strength
 - Ability to leverage capabilities (Marketing, R&D, Technical, Manufacturing and Customer Relationships)
 - Potential for gaining product advantage
 - Market Opportunity
 - market attractiveness
 - technological possibilities
- Selection
 - Plot options on strategic map
 - Select preferred options
 - Priorities, scope, project selection

Innovation Metrics & Measures

Metrics / Measures

- Macro
 - Amount of innovation budget
 - Ratio of innovation projects sponsored by senior management

- Volume
 - Number of innovations made
 - Number of patent applications filed
 - Number of trademarks obtained
 - Number of people involved systematic problem solving
 - Number of systematic innovation projects completed

- Speed
 - Amount of time per innovation
 - Research cycle time
 - Product development cycle time
 - Mean time to solve and implement an innovation solution

Metric (Contd.)

- Financial Performance
 - % of Sales from New Products
 - % of Profit from New Products
 - % of Sales invested in NPD
 - Sales Potential of Pipeline

- Project Performance
 - Actual Time Performance vs. plan
 - Actual time taken to complete stage
 - Actual Cost Performance vs. budget

- Process Performance
 - Time to Market (by project type)
 - Market Launch Hit Rate
 - Number of New Product Ideas reviewed

“Every act of creation is first of all an act of destruction.”

- Pablo Picasso

Good Luck

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