

Innovation at Buckman

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*Gateway to Success:
People, Planet and Innovation*

Innovation Freeway

“In order to have a good idea, you need to have lots of ideas.”

Linus Pauling

Innovation Freeway

“Don't worry about people stealing your ideas. If your ideas are any good, you'll have to ram them down people's throats.”

Howard Aiken

Innovation Freeway

**“You will never stub your toe standing still.
The faster you go, the more chance there is
of stubbing your toe, but the more chance
you have of getting somewhere.”**

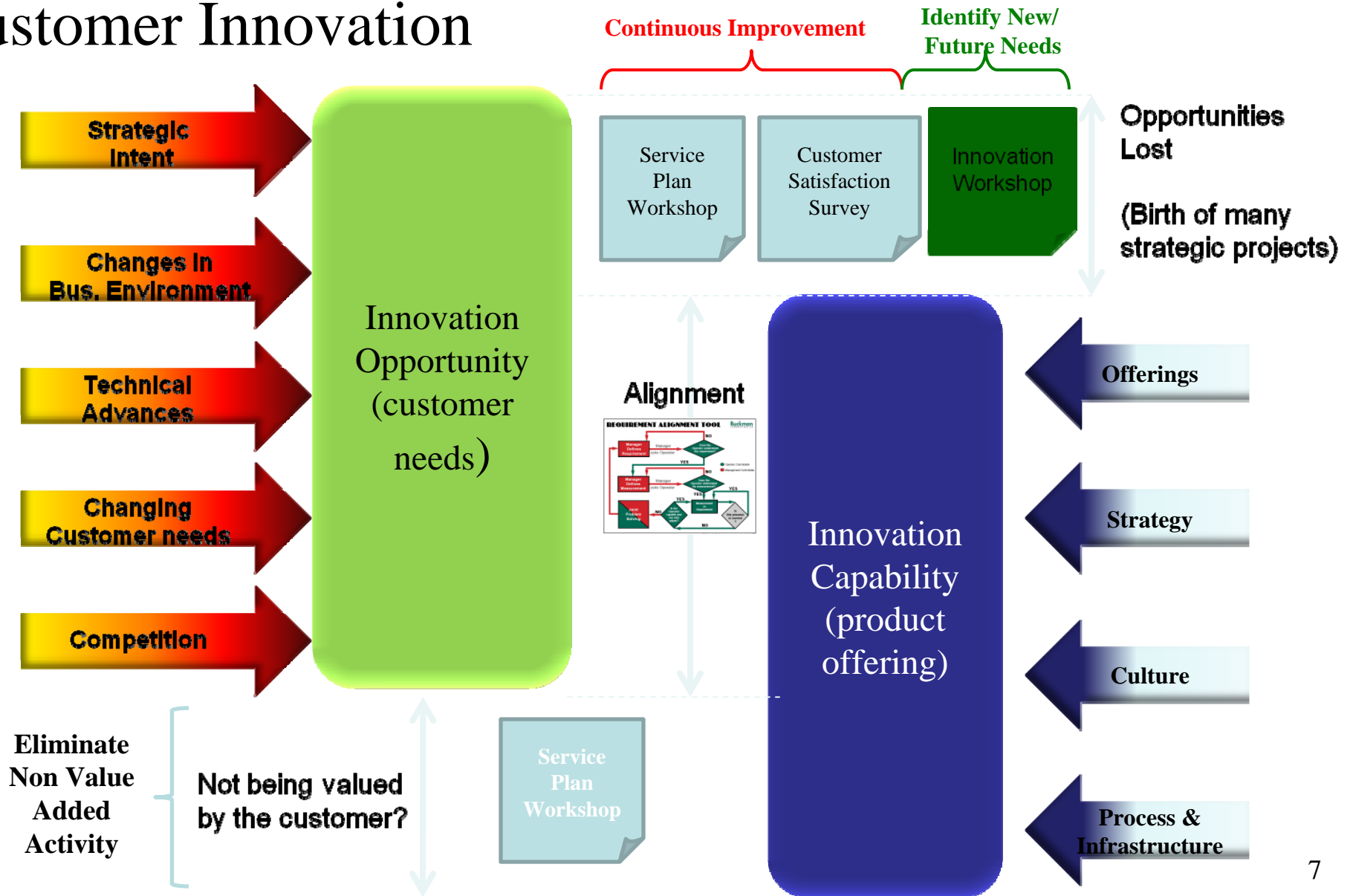
Charles Kettering

Innovation – Business Model

Businesses have often relied solely on technology for competitive advantage. However, as many products have become commoditized due to global competition and relentless technological advances, a major battleground for differentiation and customer value creation will continue to be customer driven innovation, customer intimacy and service.

- Buckman has modeled itself on the customer intimacy approach
 - **Taking responsibility for our customers' results.** This emanates from sharing information and [building trust](#).
 - **Seeing our customers' problems as our own.** Remembering that customer intimacy is the best way to create hard, tangible, rewarding results for both sides.
 - **Engage in truly cooperative partnerships with our customers.** [Integrating our operations with those of our customers to develop new products, services, and solutions](#)

Customer Innovation



New Product Development - Innovation

- Innovation is the conversion of knowledge into new products and services. It is not a one-off event, but a continuing response to changing circumstances.
- Innovation needs to be matched by the ability to implement the new ideas / technology

Some thoughts on Innovation

- “Innovation is the conversion of knowledge into new products and services.”
- “Innovation is the ability to see change as an opportunity - not a threat”
- "Imagination is everything. It is the preview of life's coming attractions."
- Albert Einstein



A Brief History

- Buckman's research efforts started before the establishment of the company.
- It was research into the causes of slime in paper mills that led to our founding and first product in 1945.
- Since then we have maintained a focus on R&D, although our areas of concentration have changed through the years.

The Beginning

- We began with an emphasis on the control of micro-organisms.
- Our research was focused in two main areas:
 - Understanding micro-organisms in industrial environments.
 - Inventing the chemicals to control these micro-organisms, and the processes to produce the chemicals.

Changes

- Our research expanded to include other areas of deposit control of interest to pulp and paper makers:
 - Pitch control.
 - Scale control.
 - Felt conditioning.
 - Boilouts, etc.
- Always with an emphasis on unique solutions and in-house manufacturing processes.

More Changes

- We expanded our research from a concentration on micro-organisms and deposits into areas of functional chemistry.
- We introduced unique retention aids, and a number of systems and process designed to improve the performance of conventional additives.

Today

- We spend roughly 3.5% of revenues on research and development.
- Our efforts are broadly based on:
 - Functional additives and applications.
 - Deposit control.
 - Fibre processing.
 - Water treatment.
- We manufacture those items where we have the capacity and expertise.
- We partner with technology leaders to jointly develop and manufacture products outside of our usual scope.
- In 2008, 10% of our sales were from products less than 4 years old.
- In 2008, 10 new products were introduced on a global basis, with many others introduced locally.

**Outside commercial
Inputs**



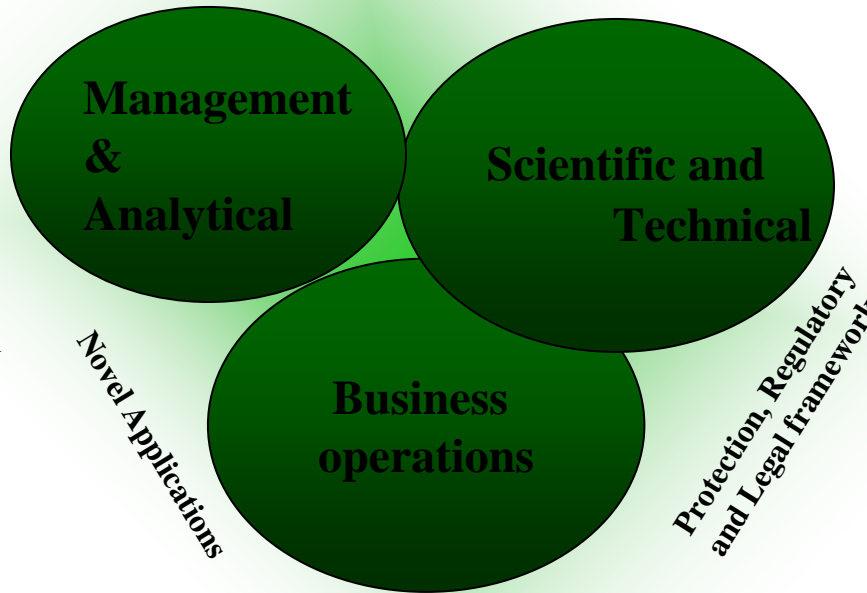
- Customers (specific problems)
- Suppliers (specific solutions)
- Consultants (specific topics)

Customer solutions

Internal Inputs



- Discovery and Innovation
- Product Development
- GWG
- Technology transfer



**Outside academic
Inputs**



- International Universities
- Private culture collections
- BioTech companies
- Conferences

Outside stimuli



- Market changes
- Economic environment
- Move to green chemistry (12 principles)
- Technology/business change

How does Buckman manage knowledge and product innovation

CONTINUOUS INNOVATIONS™



TAPPI
people resources solutions

Buckman
LABORATORIES

perCon '09

The “Unmanaged” Process



Customer's Initial Requirement



How Sales Understood it



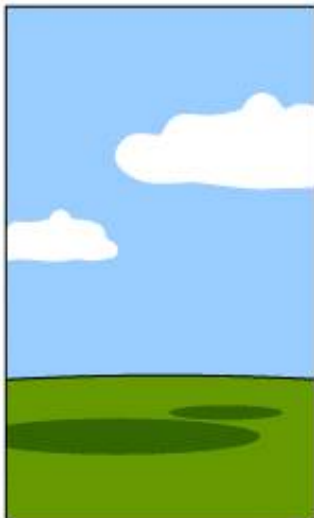
How Technical Team Interpreted it



How R&D designed it



How marketing described it



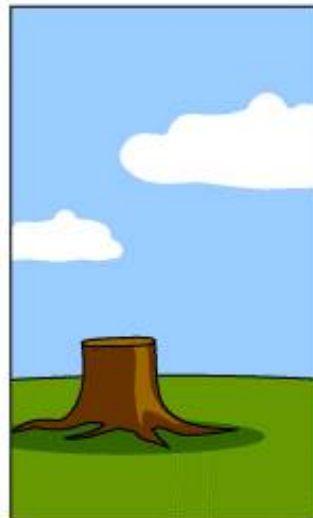
How the project was documented



What equipment operations installed



How it performed



How it was supported

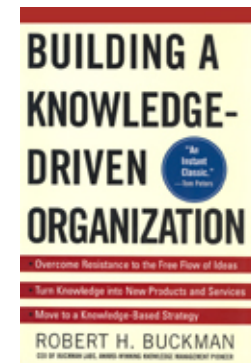


What the customer really needed



Knowledge Sharing

- Buckman has developed a knowledge sharing network called K'Netix_{TM} available to all Buckman employees, which facilitates the rapid sharing of knowledge to help solve customer problems
- Most Admired Knowledge Enterprise (MAKE)
 - A global award recognizing world-class leaders in knowledge management
 - Created 12 years ago
 - Buckman has been in top 10 every year
 - Top six : IBM, Buckman Laboratories, McKinsey & Company, Dell Computer, Microsoft, Toyota Motor



The Team Approach

Team –

People working collaboratively, who are committed to a common purpose, performance goals, for which they are mutually accountable. Team performance is comprised of both individual results and collaborative work-products, which require synergy among the team members. The output of the team is greater than the sum of its inputs.

- When [ideas meet](#) and information comes together, you bring innovations to market smarter and faster.
- A [diversity](#) of ideas and opinions are needed to generate high quality solutions.
- [Innovation](#), depends upon the individual and collective expertise of team members

How and Why is Technology Managed in Buckman Laboratories ?

The Big Picture

Functions of R&D

- Find and develop new technology for the target markets.
- Find new markets for existing technology.
- Replace older lower margin products with new higher margin products.
- Profitably replace purchased products for MIM products.
- Evaluate new technology & new ideas.
- Constantly improve products, processes, and technology.
- Bottom line – bring value through innovation.

The R & D Process

- Ideas – all ideas are welcomed and documented
- Managed Ideas
 - Screened by Tech Directors
 - Presented to Discovery Team using Idea Form
- Feasibility Study
 - IF passes team scrutiny, brief qualifying lab study
- Initiated Projects
 - IF feasibility study is favorable
 - Project Request completed, more lab work initiated
- Completed Projects – last lab stage, summary report issued
- Controlled Development – R&D field evaluations
- R&D Data Package – successful field evaluations included
- Controlled Commercialization – Sales Managers review and provide target accounts and sales projections

Idea to Commercialization Stages

- Unmanaged Ideas (exist in various places, all are welcome)
 - ↓ IF form completed with Technology Directors
- Managed Ideas
 - ↓ Must meet criteria, Discovery Team
- Discovery Team Idea Acceptance
 - ↓ Feasibility form, Technology Directors
- Feasibility Study
 - ↓ PRF, Technology Directors
- Product Development Process
 - ↓ Pre-Trial Form, Lead Scientist
- Field Trials
 - ↓ R&D Data Package, Lead Scientist
- Global Commercialization (Sales Managers review and provide target accounts and sales projections)

Some Final Thoughts on Innovation



- Ideas come from everywhere
- Share everything you can
- Your brilliant – we're hiring
- A license to pursue dreams
- Innovation – not instant perfection
- Don't politic – use data
- Creativity loves restraint
 - Give people a vision, rules on how to get there and deadlines
- Worry about usage and users not money
- Don't kill projects – morph them!

Thank You

Any Questions???



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