

Innovation Strategies of Globally Competitive Indian Companies

Rishiksha T. Krishnan

Professor, IIM Bangalore

Visiting Scholar, CASI, University of Pennsylvania

rishi@iimb.ernet.in

Competitiveness/Innovation Trajectory in Developing Countries

**Production
Capability**

**Investment
Capability**

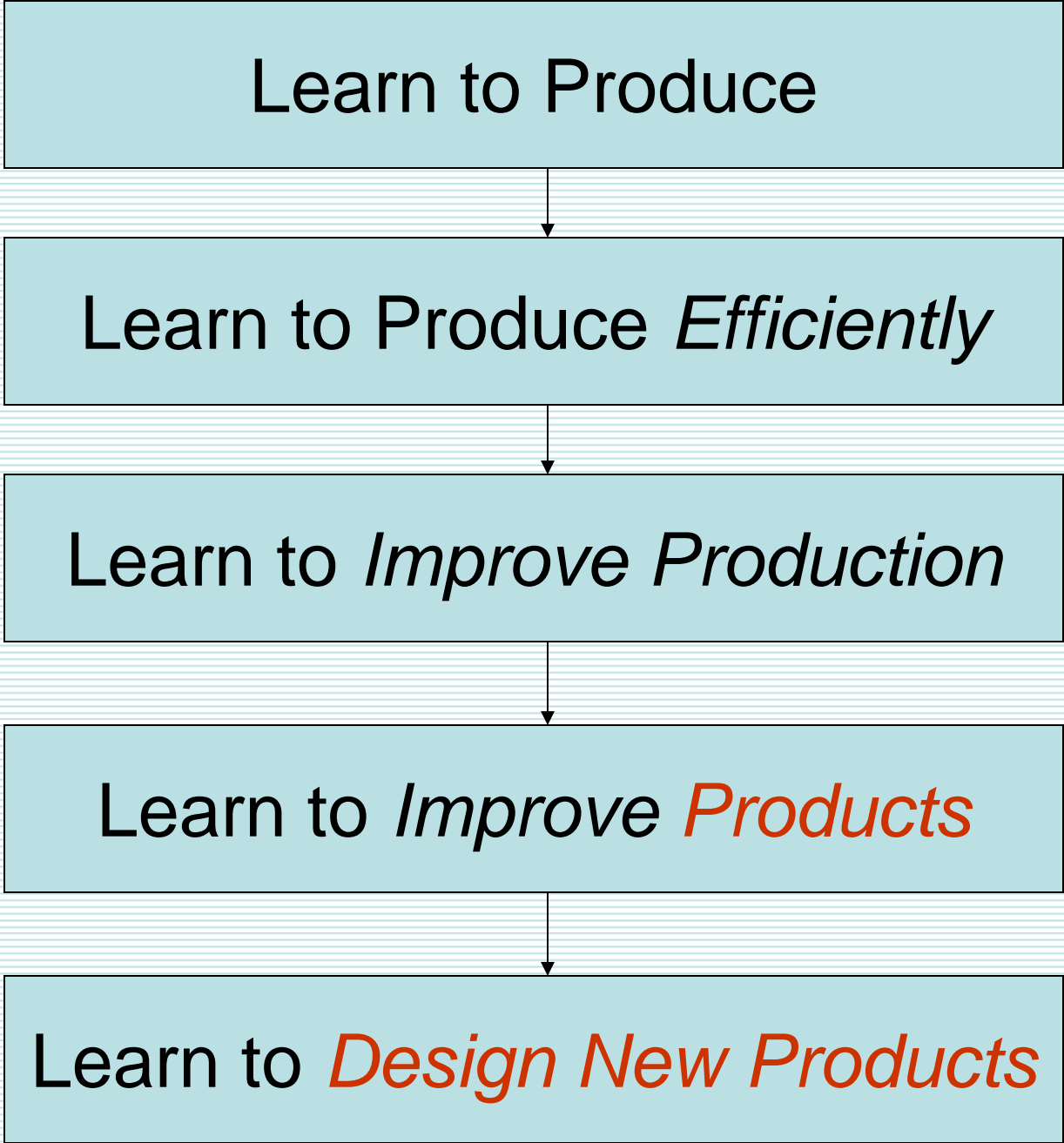
**Innovation
Capability**

Know-how

Know-why

Create New

Adapted from Dahlman, Westphal & Ross-Larson, 1987



Source:
Forbes & Wield,
2002

Technology & Innovation Management in India

Traditionally, technology management in India focused on...

- Absorption of imported technologies
- Development of local alternatives
 - E.g. for intermediates [import substitution]
- Adaptation of processes to local materials
 - E.g. high ash content in coal, high sulphur content in crude
- Development of new processes
 - Particularly in industries with IPR issues e.g. pharma
- Technology transfer
 - Typically from laboratory to firm

“Next Practices” in Technology-driven Innovation

- Adoption of Best Practices in Product Development
 - Structured PD processes, Innovation Pipeline
 - Use of advanced tools – e.g. PLM
- Acquisition of foreign companies for
 - Intellectual property
 - Standards
 - Access to advanced technologies
- Business Model Innovation
- Innovation for affordability and market growth

***Product Development
comes of age...***



TATA Indica



A Recent Success Story



Source: ET Corporate Dossier,
August 25, 2006

The Opportunity

Need for a safe and comfortable “last mile”
vehicle to transport goods

Need to compete with 3-wheelers on cost

At the same time, 4 wheels for status

Good looks

Identification of User Needs

- Marketing involved early in the product development process
- 600 customers (drivers, owners, end-users, mechanics, opinion makers) interviewed over 6 months
- Performance measures translated from customer expectations rather than product specifications
- Customers involved at every stage

Typical Customer Statements

- “If I have a four-wheeler, then better marriage proposals will come”
- “Reduce the 407 to half the size and price and give it to me”

Design Objectives

- Design to cost
 - Cost per tonne per kilometer critical
 - Management told the team that the project would be abandoned if it didn't meet cost requirements

Other Innovations

- On-line bidding by suppliers
- Co-location of suppliers
- Reduction in number of suppliers
- Partnering approach with vendors
- “Slice Indica engine into half”
- Sales & service as close to customers as possible
- Dedicated “Suvidha” service network in small towns

Team Composition

New concept ⇒
Fresh thinking required

Refreshing mindset, Passion

Young people
with good leadership abilities,
network well within the organization

The Results



30,000 units sold within 8
months of launch

New Organizational
Dynamism

Competitor for Maruti
Omni on the anvil



**The high-leverage innovators
and the companies with best overall performance
distinguish themselves
not by the money they spend...**

Booz Allen Hamilton Global Innovation Study 2006

**... But by the
capabilities they demonstrate in
ideation, project selection,
development, or commercialisation**

New Product Development: *Other Prominent Examples*

- Pharmaceuticals:
 - New Drug Delivery Systems & New Chemical Entities (*Ranbaxy, DRL*)
- Life Sciences:
 - Software Tools for Molecular Structures (*Strand Life Sciences*)
- Telecommunications:
 - WLL (*Midas* based on IIT Madras), Optical Multiplexing (*Tejas*), Phone-on-a-chip (*Sasken*)
- Electronics/IT:
 - DSPs for Video (*Ittiam*), Short Range Wireless Apps (*Impulsesoft*), Low-cost computers (*Ncore, NetPC*)

***Acquisition for Standards,
Intellectual Property &
Advanced Tech. Capabilities***

**Familiarity
with
technology
within the
organization**



High

***Candidates
for
Outsourcing***

***Internal
R&D***

Low

***Little
investment***

***External
acquisition***

Low

High



Strategic Importance

Source: Leonard, 1994

**Relative
Difficulty
of
Change**

High

Low



Values

***Skills/
Knowledge***

***Managerial
Systems***

***Physical
Systems***

Indian companies in format wars!

- Moser Baer holds 16.5% of the world's global recordable optical media market
- It recently acquired OM&T BV, a Philips' optical technology and R&D subsidiary
 - A significant part of the Blu-ray Technology development & commercialisation was done by OM&T
 - At that time, OM&T was the only company outside Japan shipping Blu-ray discs
- This will enhance the leadership position of Moser Baer in the next generation optical format race

Buying of Companies for IP comes to India!



- In early 2006, *Biocon* acquired *Norbex* a US-based company
 - *Norbex*'s human oral insulin product HIM2 was licensed by *Norbex* to *GSK* though it was ultimately not commercialised
- This acquisition gave *Biocon* ownership of over 300 patents/patent applications related to oral insulin
- *Biocon* is now working on a 2G Oral Insulin drug that is expected to have higher specific activity
- Acquisition of *Norbex* will help fend off patent challenges

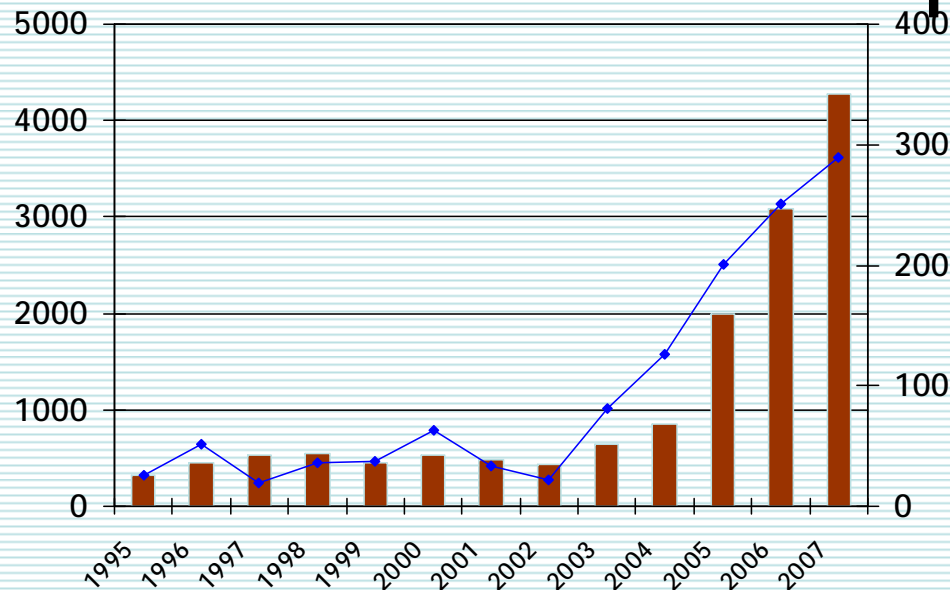
The challenge: To come up with a human oral insulin drug (unlike injected insulin, oral insulin mimics the way the human body uses insulin to control glucose)



- In early May 2007, Wockhardt acquired Negma Laboratories, the 4th largest independent pharma company in France with sales of \$150m
 - Negma is a research-based pharma company with 172 patents
 - Key areas: Osteoarthritis/rheumatology, arterial hypertension
- Wockhardt's aim: “To extend the patent portfolio to other European markets where Wockhardt has a strong presence”
- ***Europe now accounts for 60% of Wockhardt's revenues***

Source: Company website

Bharat Forge: Acquiring Advanced Tech. Capabilities

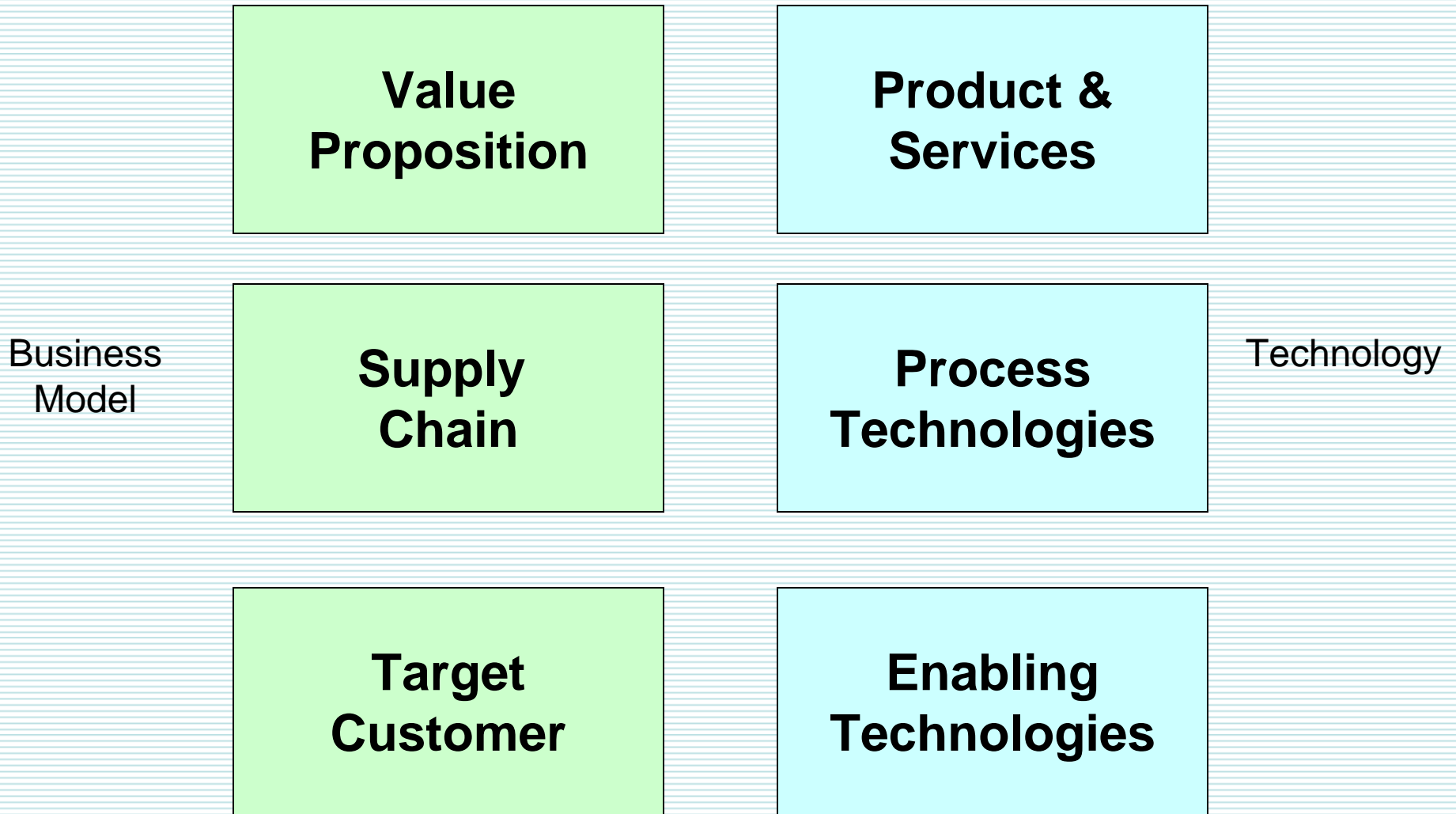


- World's second largest forging company
- India's largest exporter of auto components
 - 70% revenues from overseas markets
 - 40% of global workforce (~ 2500) are non-Indians
 - 9 manufacturing facilities, 7 abroad

- In January 2004, BFL acquired the assets, IP and labour force of Carl Dan Peddinghaus GmbH & Co. (CDP)
 - Founded in 1839, CDP is renowned for its technology, product design and development capabilities
 - CDP has a history of working with BMW on suspension components for new vehicles and getting sole supplier contracts
- In December 2004, BFL acquired CDP Aluminiumtechnik (CDP-AT), a major developer and producer of aluminium forgings for BMW, Audi, Volkswagen and Ford

Source: Ramachandran & Mukherji, 2005

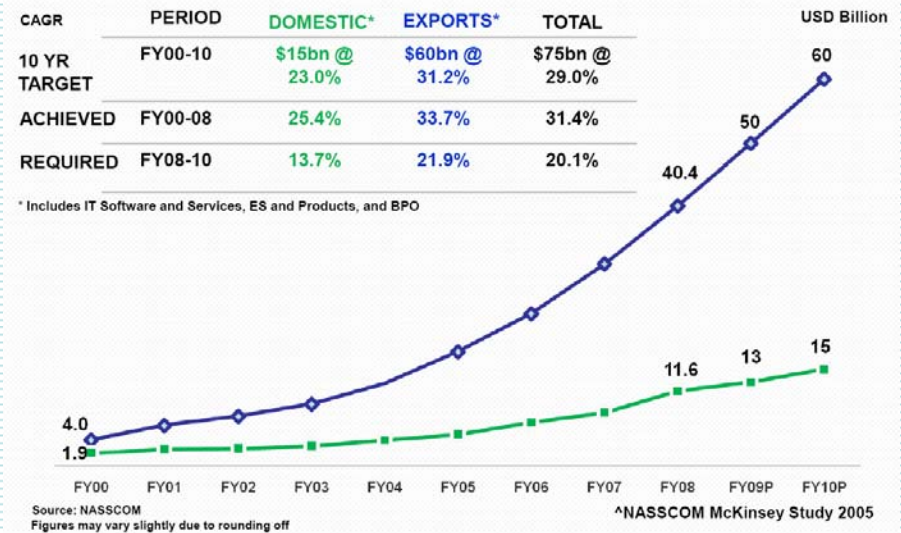
Six Levers of Innovation



***Business Model
Innovation...***

Indian Software Companies

- Pioneered new paradigms such as
 - offshore devtpt centers,
 - proximity devtpt centers
 - global delivery models
- Exported \$ 40B worth of software in 2007-08
 - CAGR 40%
- Some of the best known names in outsourced services



Ranbaxy's Problem

- The Problem – How can you develop pharmaceutical products in the face of patents, government laws and regulations, and court decisions that limit your options; the mandate being a product approved and on the market by a particular date.
- The Solution – ***Make legal and scientific innovation a necessity, rely on it regularly, and set up an organization that permits such reliance.***

Source: Bill Hare, Ranbaxy Patent Attorney,
December 2004

The *Ranbaxy* IP Group

- Thirty-plus technical specialists in different time zones working together in a mutually dependent relationship
- Tasks:
 - Prepare and prosecute patent applications,
 - Prepare and clear product formulations,
 - Analyze and develop patent noninfringement and invalidity positions,
 - Support worldwide patent litigation efforts,
 - Look for new product opportunities,
 - Monitor competitors' litigations,
 - Evaluate IP aspects of business deals,
 - Operate in the area between patent law and FDA regulatory law

***Innovation transcends
technology and the law...***

We now see a number of innovations targeting the “bottom of the pyramid”

Bharti Airtel has architected a new business model

**Value
Proposition**

*What is sold &
delivered to the market:*
**Low-cost, reliable, life-long
telecommunication services**

Business
Model

**Supply
Chain**

*How it is created &
delivered to the market*
**Outsourcing of network and
IT backbone**

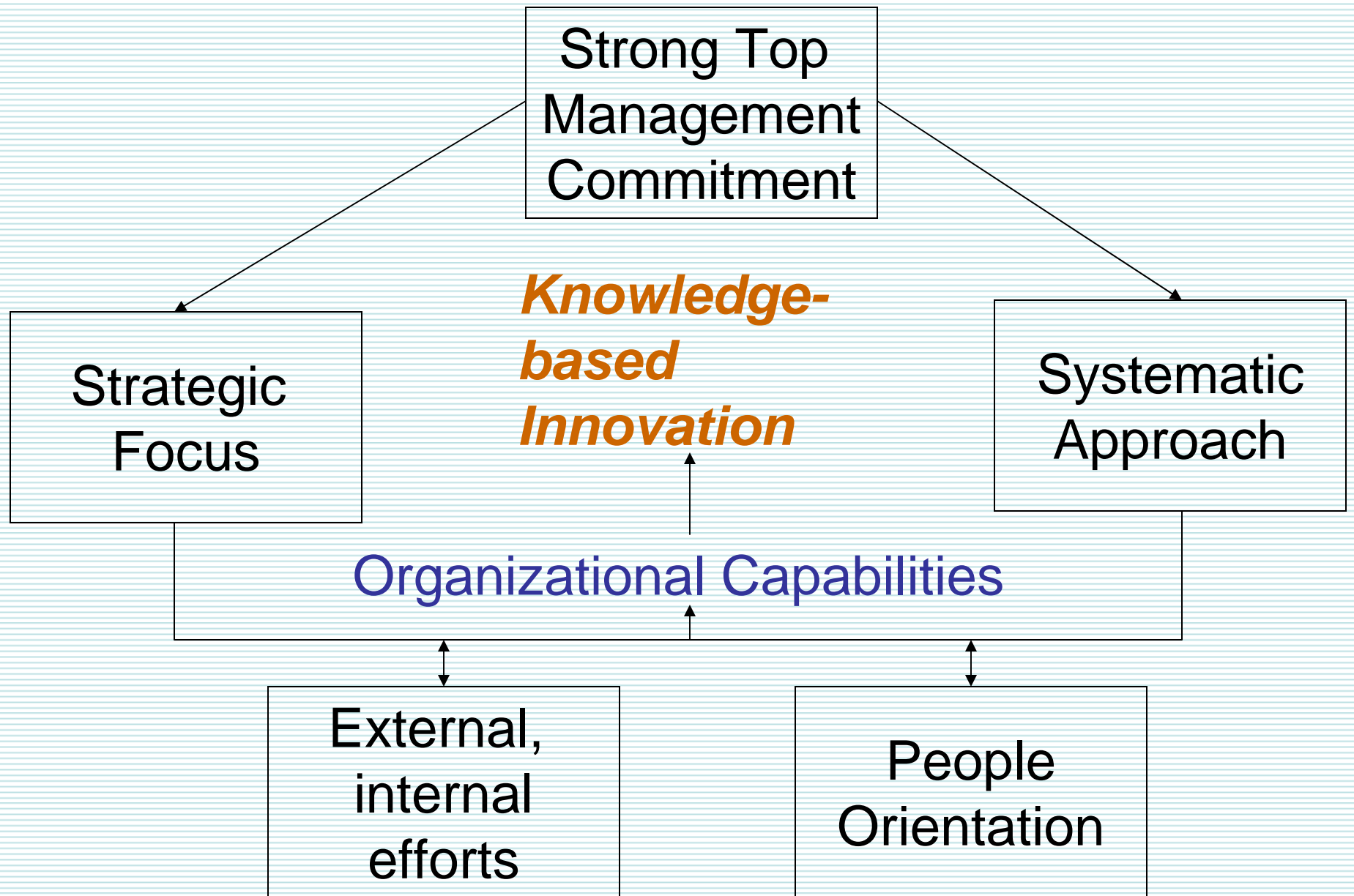
**Target
Customer**

To whom it is delivered
**People who would never have
dreamed of owning a mobile**

Characteristics of Innovative Indian Companies

Indian Companies Spearheading Innovation

- Led by technically-qualified entrepreneurs
- Strong top management support/interest
- Focused business strategy
- Largely financed by internal accruals
- Investment in capability-building
- Learning mechanisms
- People orientation



Thank you

You can reach me at:

rishi@iimb.ernet.in

+91 98450 22710