LESSON Ticker: Innovation Management

Definitions
Innovation is an opportunity for something new, different. It is always based on change. Innovators do not view any change as a threat but as an opportunity.

Technological innovations are defined as new products and processes and major technological modifications to products and processes. An innovation is considered performed if it is introduced to the market (product innovation) or implemented in the production process (process innovation). Innovation includes many research, technological, organizational, financial and commercial activities.

Types of innovations

Product innovation
A good or service that is new or significantly improved. This includes significant improvements in technical specifications, components and materials, software in the product, user friendliness or other functional characteristics.

Marketing innovation
A new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing.

Organizational innovation
A new organizational method in business practices, workplace organization or external relations.
Process innovation
A new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.

Degree of novelty as an indicator for innovation
Incremental innovation
Radical innovation
Systemic innovation
All innovations can be done on system or component level.

Characteristics of successful innovating companies
Creativity of employees
Good team work
Continued education of employees
Employees’ motivation

Systematic collection of all impulses that could lead to innovation
Project-based approach and ability to manage projects
Proper rate of risk-taking
Ability to evaluate the possibility of the innovation idea
Ability to finance the innovation activities
Cooperation with external experts

Innovation categories
sustaining—better products that can be sold with higher margin to demanding customers; incumbents win, focused on demanding customers; both incremental and radical. Incumbents have resources and motivation.

disruptive—commercialization of simpler, more user-friendly products, which are cheaper and targeted to new or less demanding customers; new entrants win, introduce products and services not as advanced as existing ones, but offering other advantages

Key elements of disruption
Customers at each market have limited absorption capacity, technological progress is faster that the ability of the market to employ it, companies
focus on better products to be sold with higher margin to unsatisfied customers.

**Closed innovation - requires control**
All the best people are working for us
Winner is who gets the innovation to the market first. If we develop the product ourselves, we will be the first on the market. R&D creates profit only when we invent, develop and market everything ourselves.
We will win if we develop most of the ideas (an the best of them).

**Open innovation**
companies use external as well as internal ideas and both external and internal ways to market, internal ideas can be taken to the market through external channels to generate additional value.

*Not all the best people are working for us. We must work with clever people within and outside our company.*
*R&D can create profit even if we do not initialize and perform it ourselves.*
*We will win if we make best use of internal and external ideas.*
*To develop better business model is more important than to be the first in the market.*
*External R&D can create remarkable value; to employ it, we need absorption capacity, often as internal R&D.*
*We must be able to profit from others using our intellectual property and we must license the intellectual property if it supports our business model.*

**Innovation potential of an organization**
An organization with high innovation potential scores high in the following areas:
(1) Strategy and planning, (2) marketing, (3) technological process, (4) quality management, (5) logistics, (6) human resources. For an organization, it is important to know its innovation potential.
(1) **Strategy and planning**: Idea about the organization’s future, vision and employees, company innovation programs, plan modifications, financial indicators of the plan, project management

(2) **Marketing**: Monitoring of current market trends, evaluation of the market competition position, customer-orientation, monitoring of customers’ attitudes to the company product, market information flow inside the company, marketing and financial control

(3) **Technological process**: Future company’s competitiveness in the industry, changes of technologies, collection of impulses for implementation of technology changes, evaluation of the return on investment, calculation of production costs and their monitoring, creation of resources for development

(4) **Quality**: Monitoring of changes conditioning the quality management in the company, employees’ personal contribution to the quality system, external quality audit in the company, monitoring of the environmental impact, impact of quality monitoring on the company processes, covering of costs resulting from modifications of standards, regulations and legislation in the sphere of quality and environment

(5) **Logistics**: Organization of purchase and distribution channels in the company, optimization of the company logistics, information and communication flows between the company and its partners, flexibility of logistics processes, introduction of innovations in logistics, logistics and financial control

(6) **Human resources**: Employees satisfaction, employees motivation, management and communication, conflict resolution, company information system, company culture

**Change as a driver for innovation**

**Categories of change**: people, structure, technology

**External forces of change**: competition, economic conditions, government programs, technology

**Internal forces of change**: internal operations, impact of external effects

**Agents of change**: managers, staff specialists, outside consultants
Techniques for reducing resistance to change: education and communication, participation, negotiation, manipulation, coercion, support

Techniques for managing change
- structure: authority, coordination, centralization
- technology: processes, methods, equipment
- people: attitudes, expectations, behavior

Organizational development techniques
- inter-group development
- process consultation
- survey feedback
- team building

Organizational stress factors
Task demands, role demands, interpersonal demands, structural dimensions, leadership techniques

Creativity and innovation
What is creativity?
Combining new ideas in unique ways or associating ideas in unusual ways

What is innovation?
Turning creative ideas into useful products, services, or methods of operation

The creative process
Perception, incubation, inspiration, innovation

Sources of innovation
- structural variables
- organizational culture
- human resources

Sources of innovation impulses

General approach
Own R&D
Technical divisions—design, technology
Production divisions (production, provision of services)
Logistics (purchase and supplies)
Marketing and sales

**Drucker approach**
1  Internal factors
1.1  unexpected event
1.1.1  Unexpected success
   What will the use of the offered opportunity mean to us?
   Where will its introduction take us?
   What do we need to do for its implementation?
   How can we achieve that?
1.1.2  Unexpected failure
1.1.3  Unexpected external event
1.2  Contradiction: Non-compliance with economic reality, contradiction between reality and anticipations about it, contradiction between the anticipated and real behavior of customers and their values
1.3  change of work process: realize the necessity of change, identify the weak point of the chain, be convinced that if something does not work the way it should, then it is necessary to attempt a change, the solution must be convenient for those who will implement it. It must place moderate and feasible requirements
1.4  change in the structure of industry or market: rapid growth of the industry, identification of new market segments, convergence of technologies (e.g. use of computers in telecommunications), rapid change of the industry and resulting need of a structural change

2  External factors
2.1  demographic changes
2.2  changes in the world view
2.3  new knowledge

**Market pull**
improvement of the existing products, extension of the existing offer or decrease of price
impulses for continuous, incremental innovations or for process innovations
looking for the best way of satisfying a newly emerging customer demand

**Research and development push**
generating of new markets for conceptually different products
looking for commercial use of new impulses resulting from the R&D results

**Impulses from market environment**
1. Customers
   product presentation (realistic, simple, demonstrative and precise, moderate, representative sample of customers)
2. Suppliers
3. Competitors

**Impulses from Research & Development (R&D)**
1. identification research: to monitor the scientific, technical and economic information and identify innovation impulses applicable in the company
2. basic research
3. applied research: acquire knowledge and means applicable for the meeting of specific, beforehand-defined goals
4. development: systemic use of knowledge and means acquired in the applied research for the creation of a new or improvement of the existing product or for the creation or modification of processes

**Internal impulses**
usually combined with external sources; supported by creative techniques and innovation tools

**General innovation tools**
- value analysis
- brainstorming
- business process reengineering
- benchmarking
change management
• technology forecasting
• technology audit

Managerial innovation tools
• peer evaluation
• team building
• effect analysis

Process innovation tools
• lean thinking
• just in time approach
• concurrent engineering
• continuous improvement