

Developing Innovation and Creativity for Business Advantage

**Week – 7:
Innovation, SME Intellectual Pproperty**

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Recap

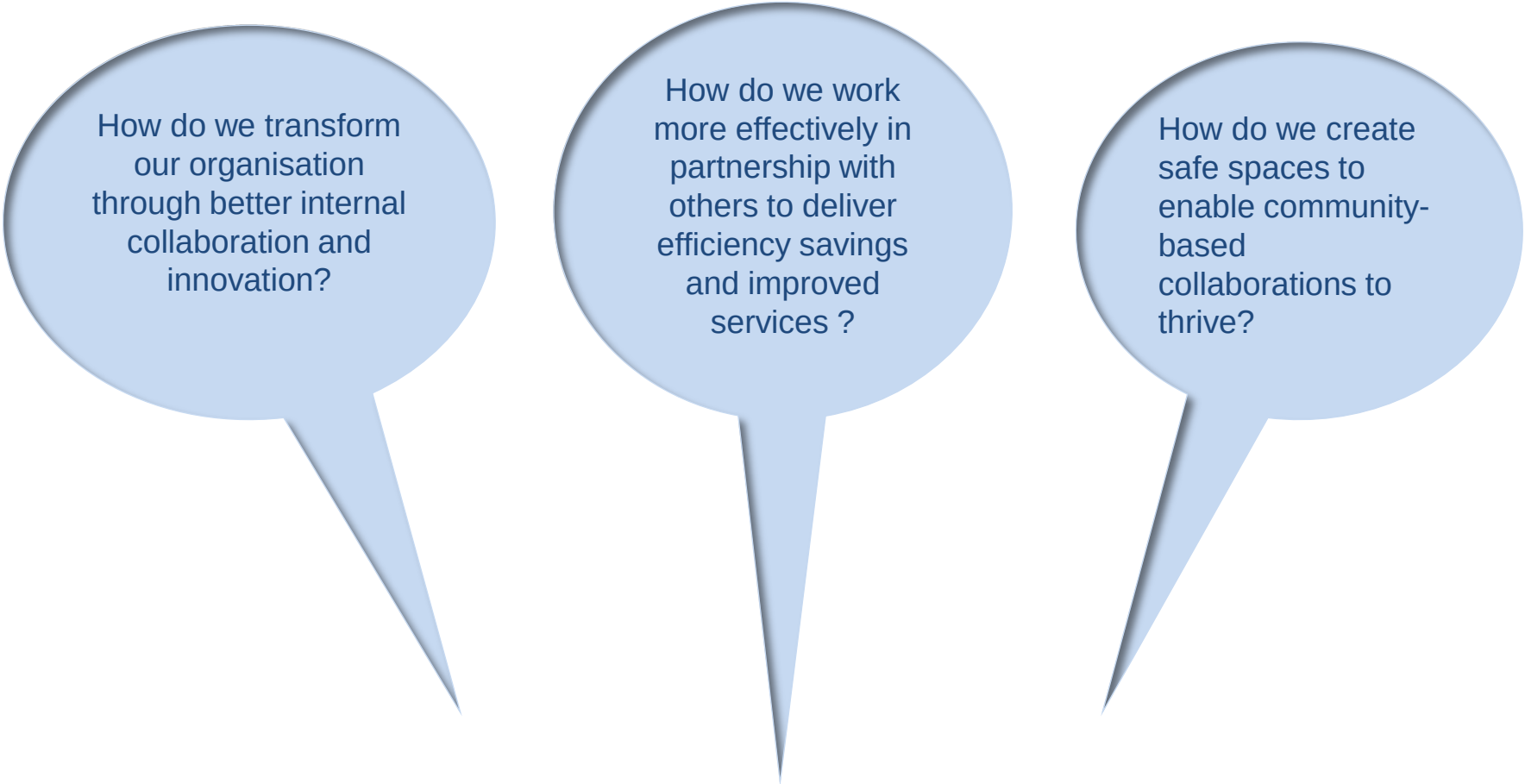
- Week 1 – Introduction to innovation
- Week 2 – Concepts & techniques of innovation & creativity
- Week 3 – Innovative eBusiness / eCommerce
- Week 4 – Developing Innovation and Creativity for Business Advantage
- Week 5 – Creativity, Innovation, and Entrepreneurship
- Week 6 – Innovation, Invention & Week 6 –

This week – we will look “Innovation, SME & Intellectual Property

Learning Outcome

- Explore collaborative leadership from an organisation's internal perspective:
- Shade a light on the strategic context for collaboration between departments, silos and management.
- Gauge internal stakeholder interest and appetite for collaboration.
- Understand how to develop and nurture a culture of collaborative working within your organisation.

Collaborative leadership



How do we transform
our organisation
through better internal
collaboration and
innovation?

How do we work
more effectively in
partnership with
others to deliver
efficiency savings
and improved
services ?

How do we create
safe spaces to
enable community-
based
collaborations to
thrive?

About SME

- Definition and characterization of SMEs, relevance of SMEs in the economy
- Definition of basic terms (Open Innovation, Outside-in/Inside-out, Absorptive Capacity)
- Main challenges for SMEs to adopt the Open Innovation Concept
- Practical implications
- Future research

SME – definition and relevance

- **Definition of SMEs (EU)**

Company category	Staff headcount	Turnover	or	Balance sheet total
Medium-sized	< 250	≤ € 50 m		≤ € 43 m
Small	< 50	≤ € 10 m		≤ € 10 m
Micro	< 10	≤ € 2 m		≤ € 2 m

Important: These ceilings apply to the figures for individual firms only. A firm that is part of larger group may need to include staff headcount/turnover/balance sheet data from that group too.

Open Innovation (SME – Definitions)

Open Innovation → targeted opening of the innovation process to include external knowledge such as of customers, suppliers and research institutes etc. into the innovation process (outside-in) with the aim to successfully implement new products or services on the market and/or to exploit own knowledge via collaboration with third parties (inside-out), e.g. by way of licensing

Outside-in Collaboration (SME – Definitions)

- ***Outside-in Collaboration:*** ➔ ability to build solid communication and working relationships with the appropriate external sources of knowledge and expertise in order to support the identification and acquisition of knowledge

Absorptive Capacity (SME – Definitions)

- ***Absorptive Capacity*** → ability to
 - sense, value, assimilate, and apply new (outside-in) knowledge internally
 - establish capabilities for the identification of technological and market-based options that are relevant to the company (cf. Mortara et al. 2009),
 - to evaluate and to build compatibility with the company's existing expertise (cf. Schroll 2009, Schreyögg/Kliesch 2002, Boscherini et al. 2009, Cohen/Levinthal 1990, Mortara et al. 2009).

SME – Main Challenges in OI

Benefits and Drawbacks of OI

<i>Benefits</i>	<i>Drawbacks</i>
Access to state-of-the-art knowledge, assets, and resources	Risk of opportunistic behaviour/partner selection challenges
Cost and risk-sharing	Benefits of joint innovation need to be shared
Speed and efficiency of innovation	Takes away resources from mainstream operations
Increased new product or service quality	High coordination costs/joint decision-making and reconciling different approaches takes time
Increased competitiveness	Only pays off on the long run

Source: Pop et.al. 2015

SME – Opportunities in OI

Opportunities (1)

- Following a collaborative strategy enables SMEs to access, for example, contemporary knowhow and assets that would not be accessible otherwise.
- In their effort to survive and overcome their liability of smallness (Chesbrough, 2010) SMEs are increasingly looking for competent partners that provide them with complementary assets and resources (Almeida and Kogut, 1997; Audretsch and Lehmann, 2005; Hite and Hesterly, 2001; McEvily and Zaheer, 1999; Narula, 2004). Collaborating on joint innovation projects with suppliers, complementors, and peers allows SMEs to share some of the risks and costs associated with innovation with these partners. In an SME context where resources are scarce the latter is an important benefit of joint new product/service development.
- SMEs that make use of their innovative strengths (e.g. flexibility, risk-taking behavior, etc.) and compensate for their resource shortages by embracing OI strategies feel they are better positioned for keeping up with the pace of development and are better able to create high-quality innovations in a joint effort with their partners.

SME – Opportunities in OI

Opportunities (2)

- SMEs can gain benefits from open innovation due to characteristics such as less bureaucracy, increased willingness to take risks, and faster ability to react to changing environments (Parida et al. 2012)
- Open innovation approach can offer promising ways for small firms to overcome their difficulties (Gassmann et al., 2010; Hotho and Champion, 2011). It may reduce their time-to-market, their costs and risk, and increases the acquisition of missing knowledge (van de Vrande et al., 2009).
- SMEs are already strongly customer-oriented as they often provide unique products, which require high customer participation. Hence, they are used to collaborate directly with their customers and to perfectly respond to their needs (Hutter et al. 2013)
- SME more rely on intermediate organization or individuals that are supporting SMEs innovation activities, where an intermediary assumes research activities, the creation of adequate collaboration structures, consulting services and targeted marketing support.

SME – Risks in OI

Risks

- SME often face difficulties in finding partners and often lack the knowledge base and internal structure to acquire and absorb the required knowledge (Kirkels and Duysters, 2010)
- Insufficient knowledge and awareness of managers or owners (Parida et al., 2012)
- SME in general lack structured internal knowledge sharing, gathering and utilization (Varis and Littunen, 2010) as well as structural fostering of an innovation culture to exploit the novel knowledge (Terziovski, 2010), Thus, before SMEs incorporate external knowledge, they need to develop and structure their own capacities (Bougrain and Haudeville, 2002)
- SMEs have less time and fewer resources to spend on learning, to acquire and exploit novel knowledge outside their own industry (Lavie and Rosenkopf, 2006; European Commission, 2005; Edwards et al., 2005; MacGregor, 2004; Narula, 2004; Powell et al., 1996)
- Joint innovation efforts (and innovation activities in general) take time to generate beneficial financial results and many SMEs are struggling to survive in the short-term and thus do not have the fortitude to embrace long-term strategies (Pop et.al. 2015)

SME – Differences Large Companies and SME (1)

Item	SME	Large Companies	Pro or contra Open Innovation in SME?
Speed of decision-making	Flexible and fast	Organizational hierarchy's slow decisions	Pro SME OI
Allocation of resources	Fewer resources (time, money and knowledge)	More financial leeway	May be a motivator pro SME OI especially in the exploration phase
Attitude toward risk	The whole business is a risk, focus on their affordable loss instead of acceptable risk	Risk adverse, because the relevant business may only be "one project" out of many	Pro SME OI, since larger companies may be more reluctant
Business model understanding	Mutual understanding of what the company wants to accomplish. The manager/owner has main control and is often the main liaison for relations	Much more fractured; More effort has to be put into generating a mutual understanding of the business model and creating <u>complementary</u> innovation activities together	Pro SME OI once the owner has experienced the benefits of OI
Management processes	Intuitive processes in place to drive innovation; chance for radical innovation, since goals are more open	Well defined processes and actions; because of this behavior large firms get foremost involved in incremental innovation	Pro SME OI, since goal definition may be part of the exploratory OI phase

Source: (Spitshoven et al., 2013)

SME – Differences Large Companies and SME (2)

Item	SME	Large Companies	Pro or contra Open Innovation in SME?
Rules	SME break rules; they do not try to predict the future, but are more inclined to embrace opportunities as they come along	Large firms follow rules, they preoccupy themselves with competitive analysis and careful planning	Pro SME OI
Definition of innovation	No special teams; whole company is involved in new developments	Special product teams in large firms are dedicated to their product development roadmap searching for innovations that exactly fit to their roadmaps	SMEs need <u>complementary</u> partners who are interested in the opportunities of their developments and not partners who search for innovations that exactly fit to their roadmaps
Contribution to earnings from OI	OI practices in SMEs contribute to their earnings from new innovations, mostly based on IP. Earnings from new innovations affect their total turnover considerably	More effective in generating new products and services through OI, than SMEs, but relatively less impact on total turnover.	Motivator for SMEs OI

SME – Practical Implications

Practical Implications (1)

- SMEs lack absorptive capacity and hence technology intermediaries are useful for them.
- SMEs' collaboration with external agencies increases their chances of launching products and services, vertical collaboration is relevant for radical innovation, and horizontal collaboration is appropriate for incremental innovation.
- Vertical and horizontal co-operations with customers, suppliers, and other agencies plays more distinct role in the innovation process of SMEs than horizontal cooperation with research institutions, academic institute and state agencies.
- Open innovation SMEs tend to collaborate for product introductions whereas closed innovation SMEs tend to collaborate for incremental changes of their existing products.
- Collaboration for SMEs is more important and useful in the commercialization stage than in the early (R&D) stages of innovation.
- SMEs that are more open to external sources or channels are more likely to gain higher level of innovation performance.

SME – Practical Implications

Practical Implications (2)

- Networking is an effective way to facilitate open innovation among SMEs.
- However, due to resource and other limitations, SMEs are not able to maintain numerous networks. Therefore their skills in maintaining few relevant networks are essential for open innovation activities. A relatively closed, focused, and consistent networking approach results in high innovation performance.
- SMEs' open innovation via external collaboration has a curvilinear (inverted U-shape) relationship with innovative efficiency, i.e. there is a collaboration and networking density optimum to be explored.
- Compared to large firms, SMEs need to be more careful in terms of their intellectual property (IP) as they protect very selective technologies. Patenting activities also significantly help SMEs to license out their knowledge to external parties.

SME – Future Research

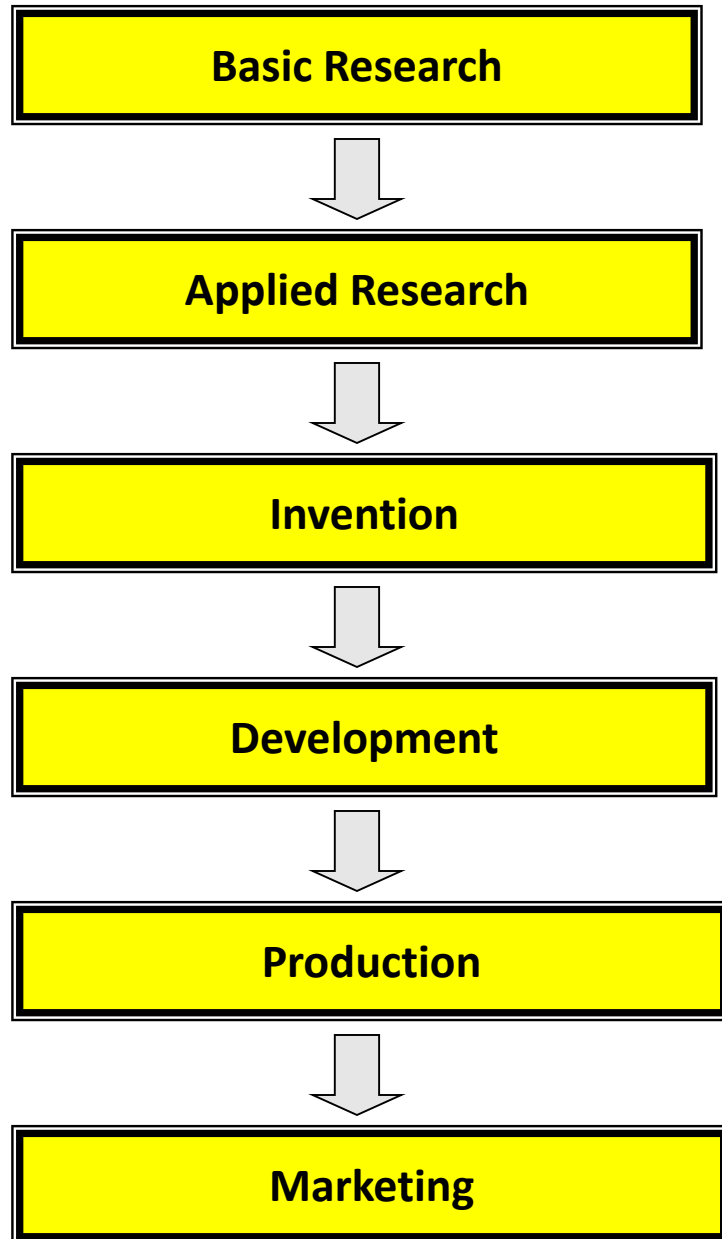
Future Research

- Explore the conditions under which different categories of SMEs can reap the full benefits from OI practices while effectively managing the potential risks of becoming too dependent on external sources (Spithoven et al., 2013)
- Explore effective ways for appropriability regimes: SMEs do not take a systematic approach to IP, and this leads to unintended knowledge spillovers. This is even more important in an OI setting where firms collaborate with several technology partners (Spithoven et al., 2013).
- Researchers should be aware that in open innovation the focal unit is a community and not a single firm. Although the nature and social structures of communities are explored, the impact of such a community on SMEs is not well understood (Benner and Tushman, 2015).
- High-tech versus low-tech SMEs: High-tech SMEs are already more into OI, at least as upstream activities are concerned. Future studies should also investigate firms that are not related to High-tech industries (Hossain, 2015).
- Open innovation involves various issues such as culture, trust, and litigation. These issues remain unexplored in the existing literature (Hossain, 2015).
- The role of state, public organization and intermediaries in supporting open innovation opportunities is still not clear (Howells, 2006; Kirkels and Duysters, 2010). Especially in knowledge exploitation studies about commercialization stage, etc. are still relatively low (Hossain, 2015) .

IP for Business Series

- Making a Mark (Trademarks)
- Looking Good (Designs)
- Inventing the Future (Patents)

“Technology-Push Linear Model of Innovation”



The Innovation Process

- An innovation starts as an idea/concept that is evaluated, refined and developed before it is applied or acted upon.
- Innovations may be inspired by reality (known problem). The innovation (new or improved product development) process, which leads to useful technology, requires:
 - Research
 - Development (up-scaling, testing)
 - Production
 - Marketing
 - Sale
 - Use/Consume
- Experience with a product results in feedback and leads to **incrementally or radically improved innovations.**

New/Improved Product Development

- Stages in a New/Improved Product Development process:
 - Ideas Generation
 - Ideas Screening
 - Concept Development and Testing
 - Business Analysis
 - Beta Testing and Market Testing
 - Technical Implementation
 - Commercialization

Spotlight is on **knowledge** in today's economy

- Knowledge, Weightless, Information, Digital or Service Economy
- **Factors of production**: Land, Labor, Capital, **Intangibles (Knowledge)**
- Knowledge as **useful** Information (or Service)
- Information as a “**Public Good**”
- Information as Property

Market-oriented Economy

- Playing Field: Unfair competition; **free riding**
- National Legal Systems: Diversity (bilateral/regional/international treaties or agreements)
- **Adding Value : Meeting or exceeding market needs or expectations**
- Market research: Consumers' needs, competing products or substitutes, gaps
- **Technological innovation as an element of marketing**

Challenges in Today's Economy

- Government regulation, market participants and consumers; globalization, deregulation, quotas, tariffs, subsidies, market access or non-tariff barriers
- Supply exceeds demand; fickle demand, risk, lean retailing
- **Trust and relationships: Consistency vs Innovation**
- Changing needs: need for creativity and/or innovation
- Mass production, custom made, personalization, co-creation/designing
- Supply, demand, production, value chain or network
- Innovation/creativity: Customer, supplier, consultant, partner, competitor, standards, product liability, risk sharing, ownership

Competition and Cooperation in Today's Economy

- Property: Right to Exclude/use/enjoy
- Share/leverage
- Physical vs. Intellectual Property
- **One to one vs. one to many**
- Physical manifestation/link to carrier/medium or fixation
- Nature of competing/substitute products:
Functional, equivalent, class, set, related goods

The Challenges to the IP System

- Expand, adapt, fine tune, harmonize
- New categories (Sui generis systems)
- National, regional or global
- National treatment vs. reciprocity
- Digital environment and E-commerce
- Legal jurisdiction, applicable laws
- Fit for purpose: Clear, fast, cheap and effective
- Simple and cogent

The challenge of **adding value** in today's economy

- Raw materials/Inputs: Processing (Value addition) = Value added output/component; product; sale; **Profit**
- Value addition: **Better**: Functional/technological or aesthetic/non-technological; Rational/Emotional (**More for Less**)
- Price; access/availability; consistency
- Individual, Enterprise (legal person), Chains, Networks; consortia; **Open Innovation** (Industry-Government-Academia)
- Ownership vs. access to knowledge

Ideas, Creativity and Innovation

- **Creativity**

The ability to make or otherwise bring into existence something new, whether a new solution to a problem, a new method or device, or a new artistic object or form.

- **Innovation**

1 : The introduction of something new

2 : A new idea, method, or device

- **Creativity = Idea + Action**

- **Innovation = Creativity + Productivity**

- **Innovation = Idea + Action + Productivity**

IDEA to PRODUCT



@Entrepreneur@

Internal,
External, or Joint

Internal,
External,
or Joint

Idea

Invention

Business
model

Business
Strategy

Manufacturing or
Business Process

Functional or
Technological

Form or
Appearance

Marketing (Branding)

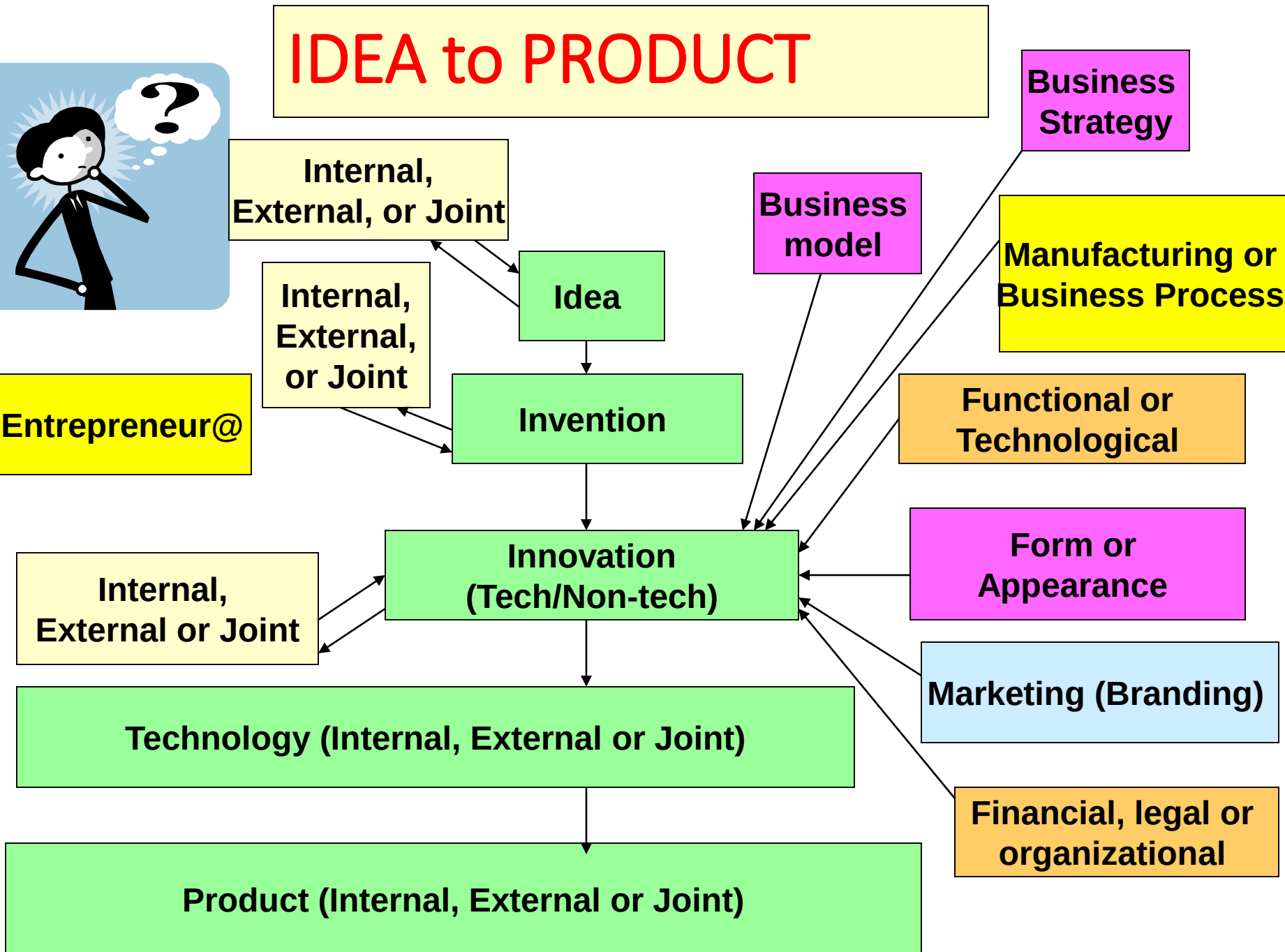
Financial, legal or
organizational

Internal,
External or Joint

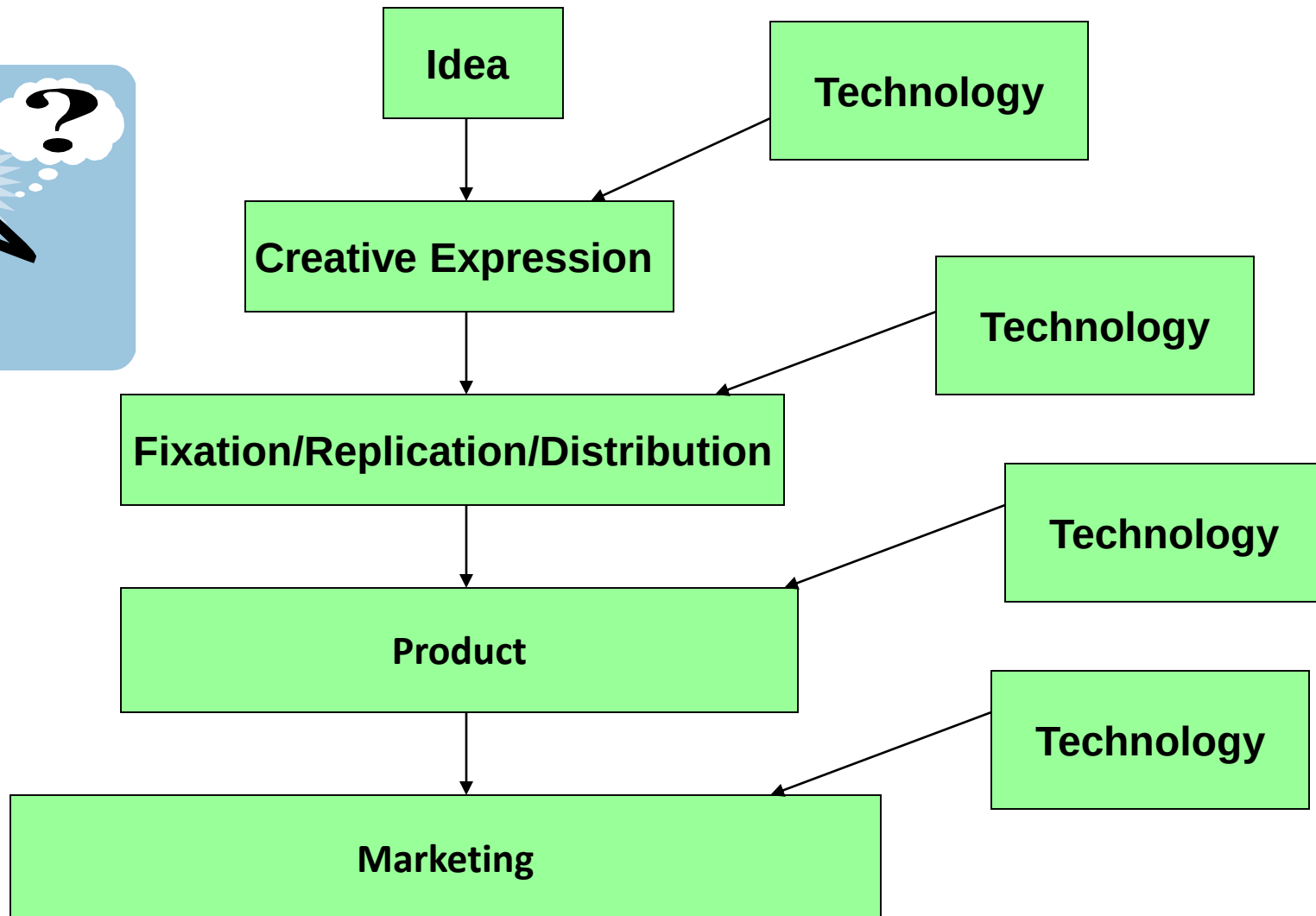
Innovation
(Tech/Non-tech)

Technology (Internal, External or Joint)

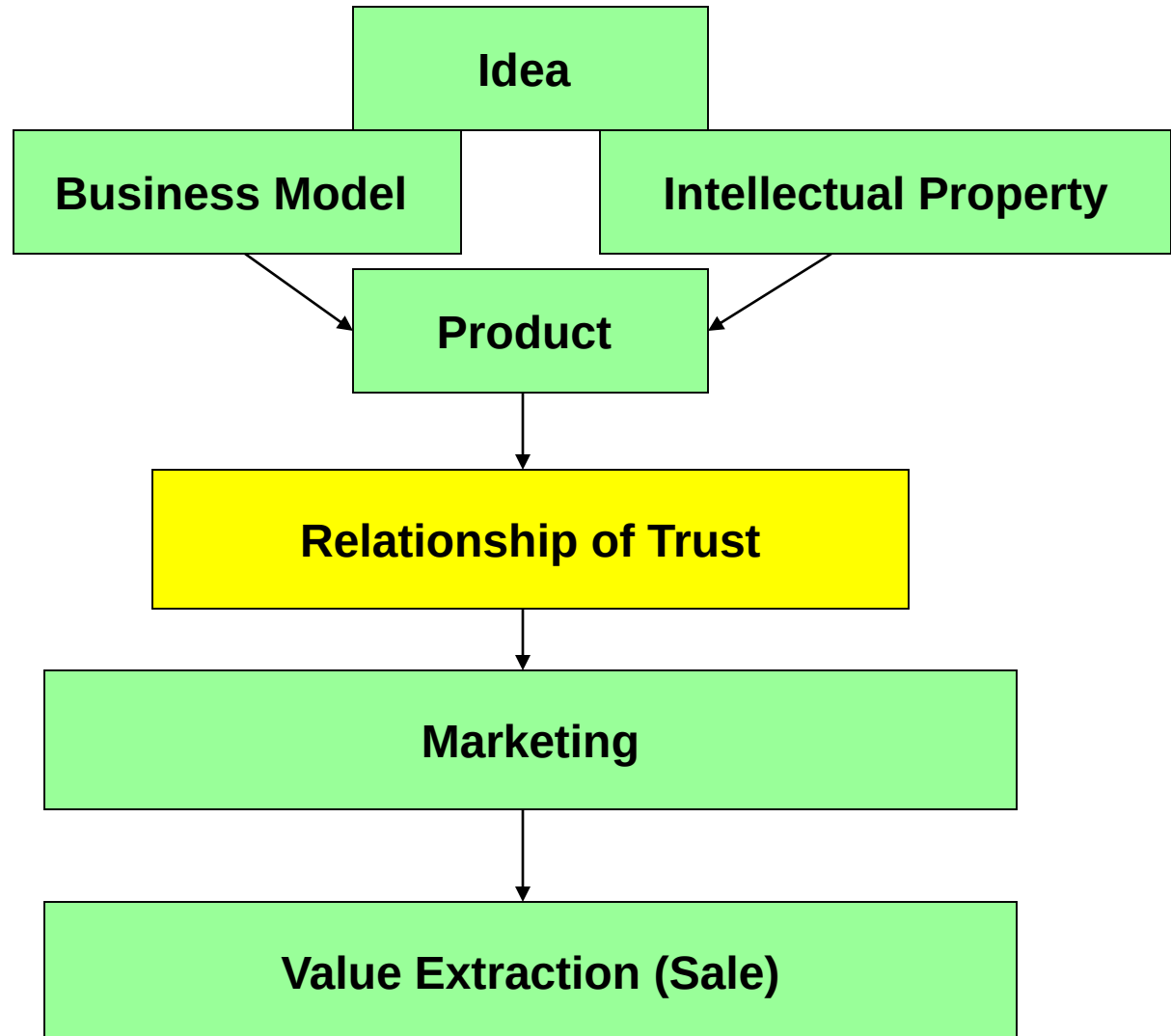
Product (Internal, External or Joint)



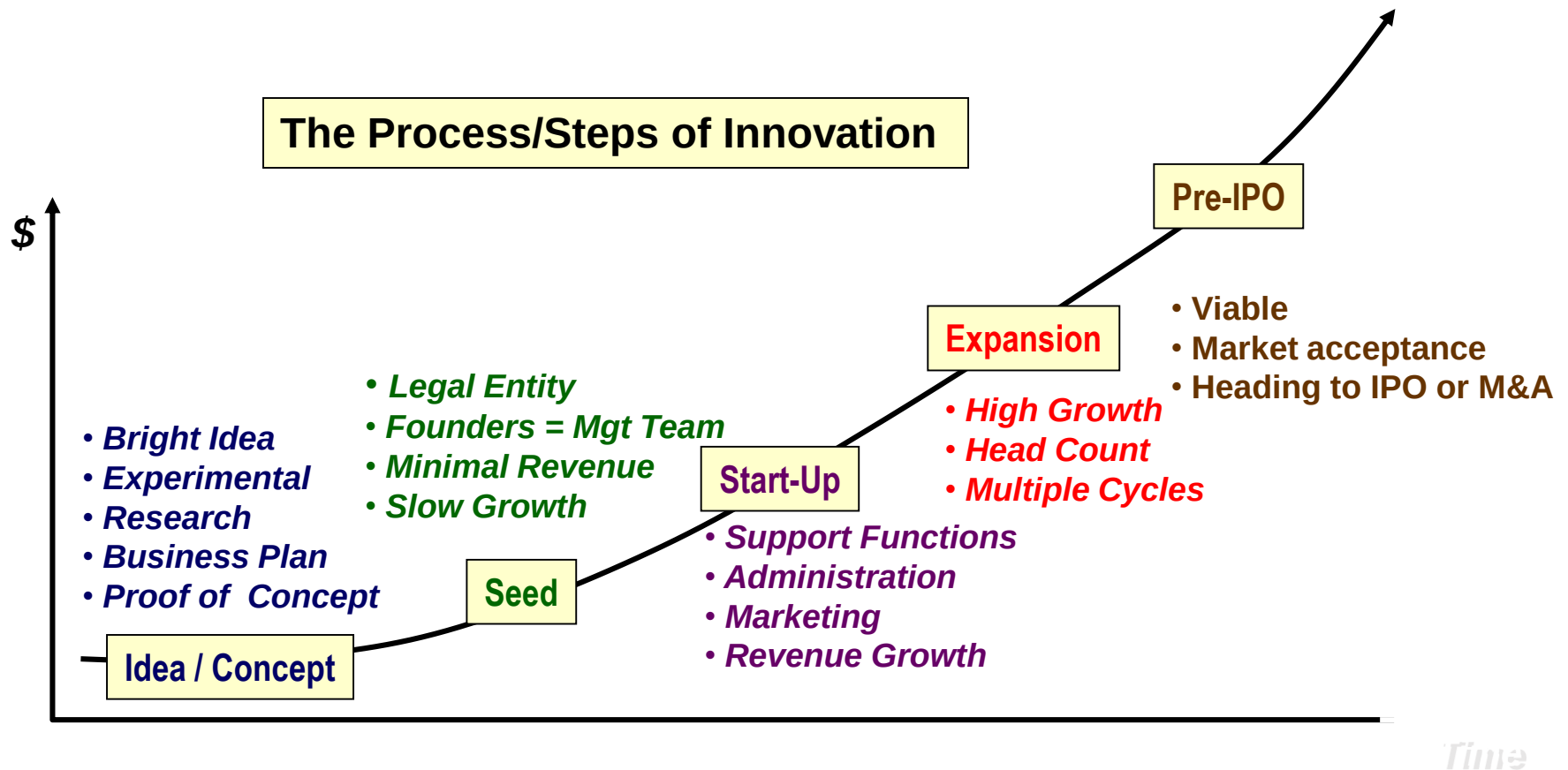
IDEA to MARKET



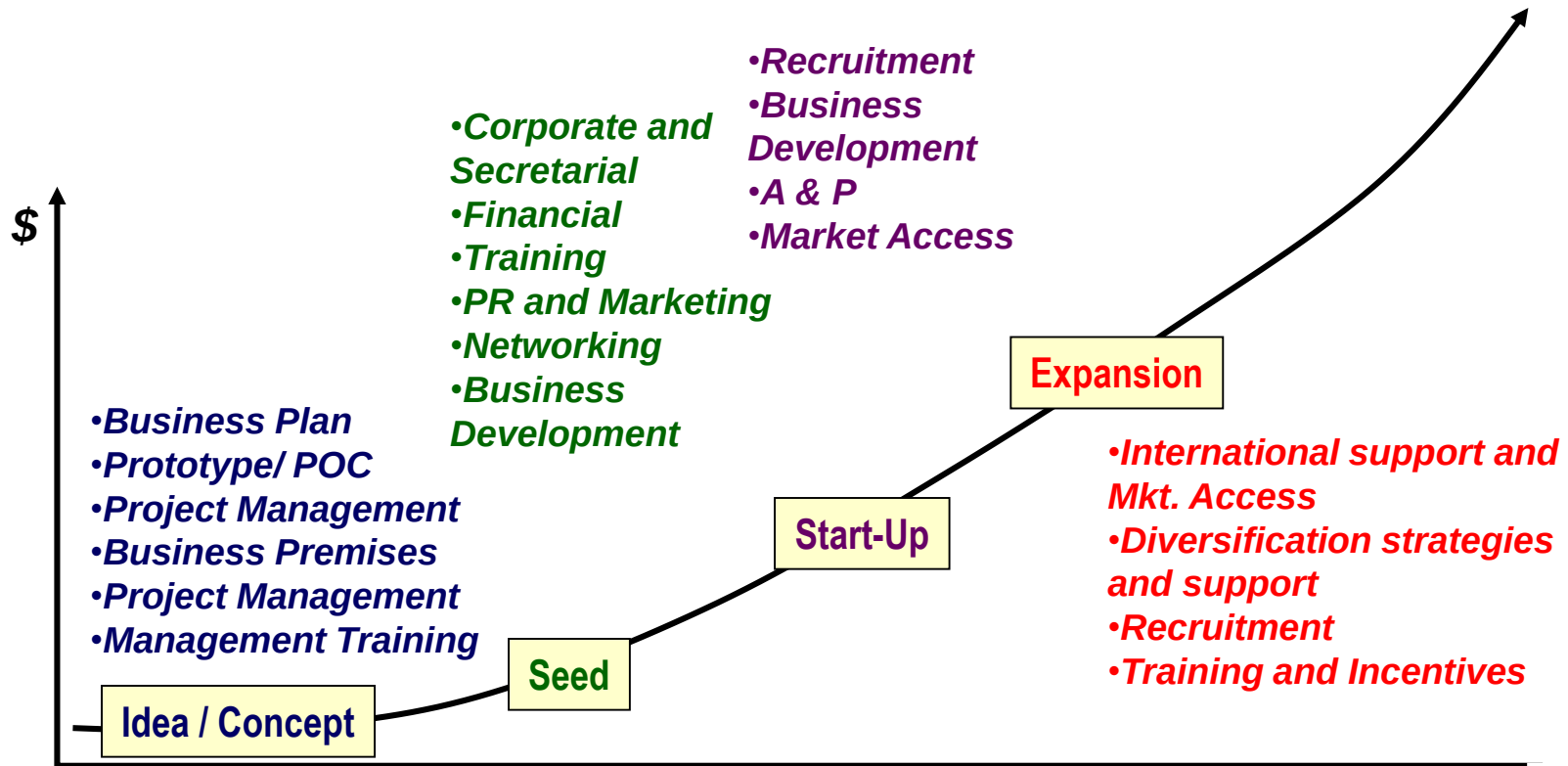
Idea to Profit



Understanding the Process of Innovation



The Needs of Each Stage



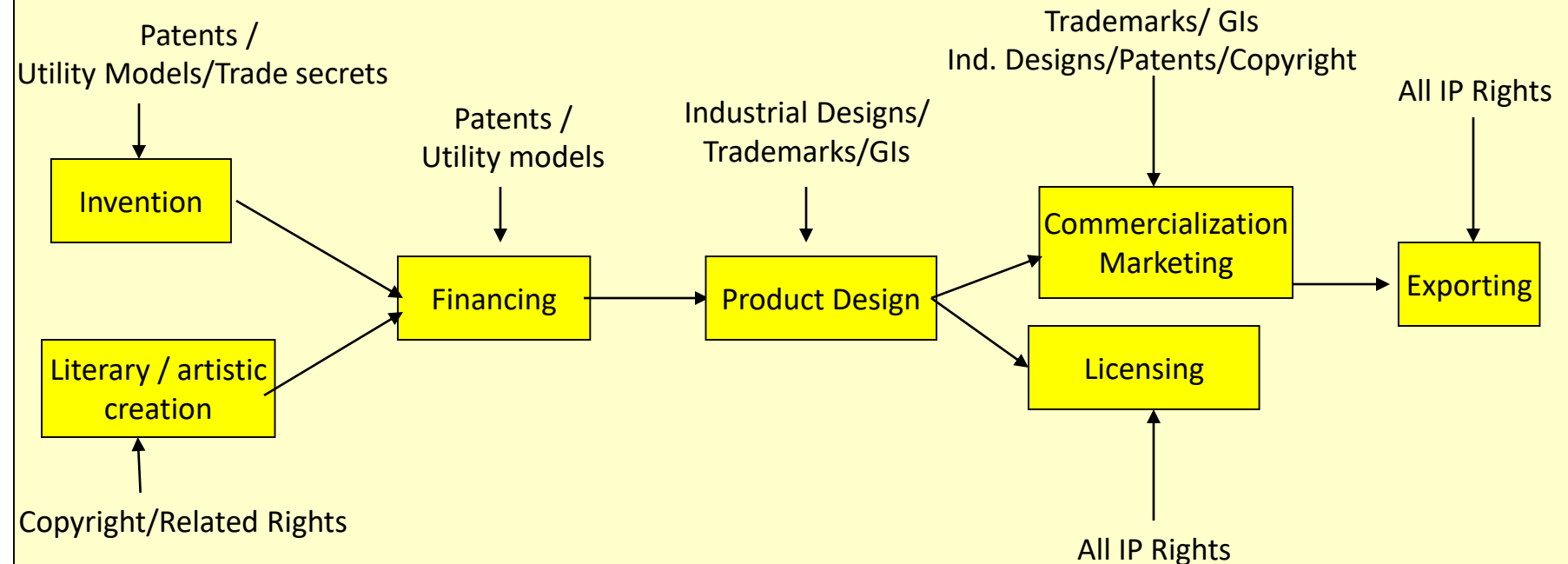
Time



IP Management Needed in all stages

Basic Message 1

IP adds value at **every stage** of the **value chain** from creative/innovative **idea** to putting a new, better, and cheaper, product/service on the market:



Basic Message 2

- **IP Strategy** should be an **integral part** of the overall **business strategy** of an Enterprise
- The IP strategy of an Enterprise is influenced by its creative/innovative capacity, financial resources, field of technology, competitive environment, etc.
- **BUT: Ignoring the IP system altogether is in itself an IP strategy, which may eventually prove very costly or even fatal**

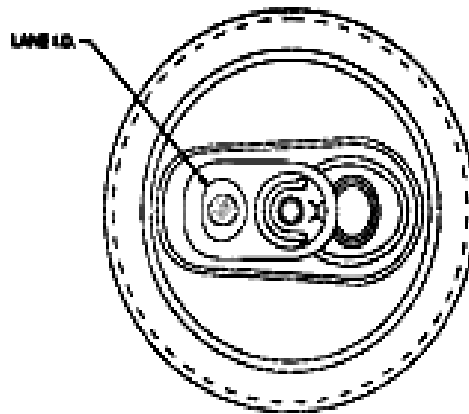
Basic Message 3 (More for Less)

- **Own Use**
- **Licensing**
- **Franchising**
- **Merchandising (Mickey Mouse, Hello Kitty)**

Patents

Example: Ring-pull cans

The inventor licensed the system to Coca-Cola at 1/10 of a penny per can. During the period of validity of the patent the inventor obtained 148,000 UK pounds a day on royalties.



What is a trade secret?

- Three essential requirements:
 - The information must be secret *
 - It must have commercial value because it's secret
 - holder must have taken reasonable steps to keep it secret (e.g. confidentiality agreements)

* “not generally known among or readily accessible to persons within the circles that normally deal with this kind of information”

Case Study on Trade Secrets

Monday April 9 3:45 AM ET

Fruit of the Loom Sues Competitor

CHICAGO (AP) - Fruit of the Loom is suing competitor Gildan Activewear Inc., accusing the Montreal company of **stealing trade secrets to grab a competitive edge** in the cutthroat apparel business.

Fruit of the Loom contends the reports include **production goals for plants in El Salvador, Honduras and Mexico that would allow Gildan to estimate production costs**. They detail **sales to specific customers, trends in demand and budget information**.

Case Study: FBI Arrests Man Selling Software Debug Code

- **HINDUSTAN TIMES, New Delhi, August 28, 2002**
- Shekhar Verma arrested August 25, Ashok Hotel
- Geometric Software Solutions Limited (GSSL)
- Confidentiality Agreement (Not to disclose, sell, transfer, or assign any information on the project)
- US Software Giant, SOLID Works, engaged GSSL for debugging source Code of “Solid Works 2001 Plus”
- Left GSSL in June 2002; took copy of source code

IP Rights: Copyright

- Rights given to creators for their **literary and artistic works**
- **Protected works:** books; newspapers; computer programs; databases; films, musical compositions; choreography; paintings; drawings; photographs; sculpture; architecture; advertisements; maps and technical drawings; **no registration**
- Generally protected for 50 years after the death of the author
- **Extent of overlap between copyright and design laws**

A Bundle of Exclusive Rights

Economic Rights

- Reproduce or make copies;
 - Distribute to public;
 - Sell, rent*, lease*, lend, license;
 - Display or perform to public;
 - Adapt and Translate (***“Derivative works”***);

Inherit, Gift, Sell or License

Moral rights**

- Right of paternity: of acknowledgement;
- Right of integrity: to object against mutilation and/or distortion of work;

**** Moral rights cannot be transferred; but may be waived.**

** Generally applies only to certain types of works: i.e. Cinematographic works; musical works, or computer programs.*

What are Related Rights?

There are **three kinds of “related rights”**:

Rights of performers

- Actors
 - Musicians
 - Singers
 - Dancers
- ... or generally people who perform in their performances;

Rights of producers of sound recordings

(also called phonograms) in their recordings (cassette recordings, compact discs, etc.);

Rights of broadcasting organizations in their radio and television programs and in Internet broadcasts such as ‘podcasts’.

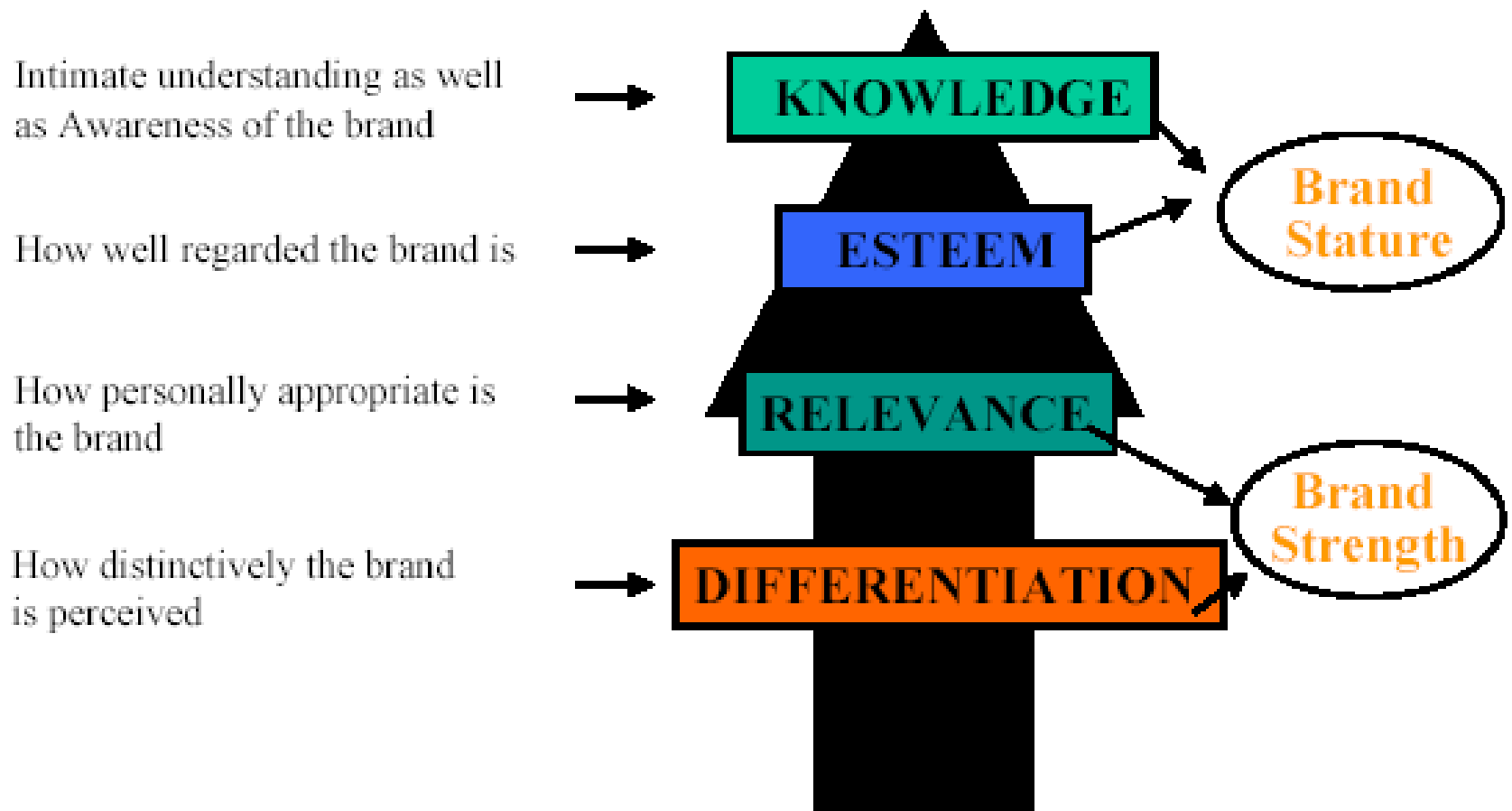
Marketing principles.....

- Identify opportunities and threats
- Identify customer needs and expectations
- Respond to a competitive environment
- Carefully plan to make a **New or Improved Product**
- Use the 4 P's....
 - **Product service**
 - **Price**
 - **Promotion**
 - **Place (distribution)**
- Retain flexibility to respond to unforeseen changes

Building Trust and Relationships

- A Brand is a **consistent, holistic promise/pledge** made by a company; the **face** a company presents
- A Brand serves as an unmistakable **symbol** for products and services
- **“Business card”** a company proffers on the competitive scene, to **set itself apart** from the rest

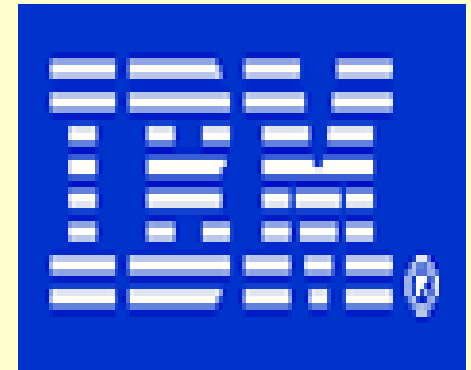
How Brands Are Built



Source: Association of Professional Design Firms, APDF, http://www.apdf.org/Public/Index.asp?Page_ID=74

Trademarks

- Trademarks are valuable business assets
- Interbrand 2003 Annual Survey of the world's most valuable global brands:



Coca-Cola: 70.45 billion US\$ Microsoft : 65.17 billion US\$ IBM: 51.71 US\$.

“Brand” Companies

Nike...

Adidas...

Reebok...

Levi-Strauss...

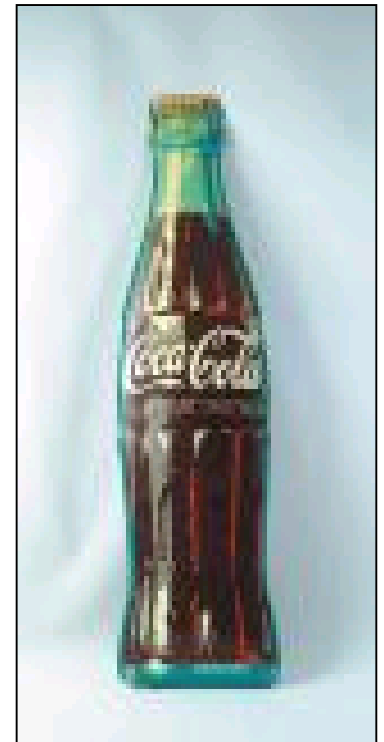
...Own No Factories

Value of a brand value is affected by...

- New inventions
- Adaptability to change (Management, Employees)
- Changes in consumer tastes
- Situation and trends in the economy
- Industry trends and brands trends
- Impact of technological developments

Example no. 1

- Decades ago, Coca-Cola decided to keep its soft drink formula a **secret**
- The formula is only know to a few people within the company
- Kept in the vault of a bank in Atlanta
- Those who know the secret formula have signed non-disclosure agreements
- It is rumored that they are not allowed to travel together
- If it had patented its formula, the whole world would be making Coca-Cola



Example no. 2

- **Patent** for stud and tube coupling system (the way bricks hold together)
- But: Today the patents have long expired and the company tries hard to keep out competitors by using **designs**, **trademarks** and **copyright**



Industrial Designs

Business (Idea) point of view:

- Make your product appealing to consumers
- Customize products in order to target different customers (e.g. Swatch)
- Develop the brand (e.g. Apple 's « Think Different » strategy; i Pod)



Entrepreneurship 1

Entrepreneurship drives **innovation**, **competitiveness**, **job creation** and **economic growth**.

It allows **new/innovative ideas** to turn into successful ventures in high-tech sectors and/or can unlock the **personal potential of disadvantaged people** to create jobs for themselves and find a better place in society.

Entrepreneurship 2

Entrepreneurship, in small business or large, focuses on "**what may be**" or "**what can be**".

One is practicing entrepreneurship by looking for what is needed, what is missing, what is changing, and what consumers will buy during the coming years.

Entrepreneurship 3

Entrepreneurs have:

- A **passion** for what they do
- The **creativity** and **ability** to innovate
- A sense of **independence** and **self- reliance**
- (Usually) a high level of **self confidence**
- A **willingness** and **capability** (though not necessarily capacity or preference) for **taking risks**

Entrepreneurship 4

Entrepreneurs do not (usually) have:

- A tolerance for organizational bureaucracies
- A penchant for following rules
- A structured approach to developing and implementing ideas
- The foresight to plan a course of action once the idea is implemented and established

Entrepreneurial Success

- 1. People (Entrepreneur /Entrepreneurial Team)**
 - 2. Opportunity (Marriage of Market and Product/Service)**
 - 3. Access to Resources (Land. Labor, Capital, Knowledge)**
- And the fit amongst these three elements (Business Model)**

Introduction to IP Management 1

- Legal
- Technical
- Business
- Export
- Financial
- Relationships
- Accounting
- Tax
- Insurance
- Security
- Automation
- Personnel

Introduction to IP Management 2

- **Trademarks (Brands)**
- **Geographical Indications**
- **Industrial Designs**
- **Patents and Utility Models**
- **Copyright and Related Rights**
- **Trade Secrets**
- **New Varieties of Plants**
- **Unfair Competition**