

# CIS COMMERCIALISATION BOOTCAMP

## Innovation Commercialisation

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# AGENDA

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## **A Tour de Force of commercialisation**

### **1. Innovation commercialisation**

Introduction to entrepreneurship and innovation concepts relating to commercialisation, such as sources of innovation, creating value through commercialisation, and commercialisation strategy

### **2. Building the case: Business Model & Business Plan**

Introduction to building the business case; aspects of business models including value creation and capture, and developing business plans including providing evidence.

# COMMERCIALISATION IS INNOVATION

“The adoption of an idea or behaviour pertaining to a product, service, device, system, policy or programme that is new to the adopting organisation”

Damanpour and Gopalakrishnan (2001)

- Adoption: Innovation vs. Invention
- Different types: not just about technology (e.g. Starbucks, Haagen Dazs, McDonalds, Zara etc.)
- Innovations do not have to be new to the world, but new to the adopting organization (e.g. Amazon Kindle)

# WHAT IS INNOVATION?

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Innovation is not just about opening up new markets – it can also offer new ways of serving established and mature ones:

- Low cost airlines: Southwest Airlines, Easyjet and Ryanair

Innovation is not just about manufactured products - in most economies the service sector accounts for a vast majority of activities

- Amazon (retailing), eBay (market trading and auctions), Google (advertising), Skype (telecommunications), Starbucks
- Often the lower capital costs associated with services mean that opportunities for new entrants and radical change are the greatest in the service sector (e.g. Skype versus Apple in terms of resources, manpower and time)

# TECHNOLOGY AND GROWTH

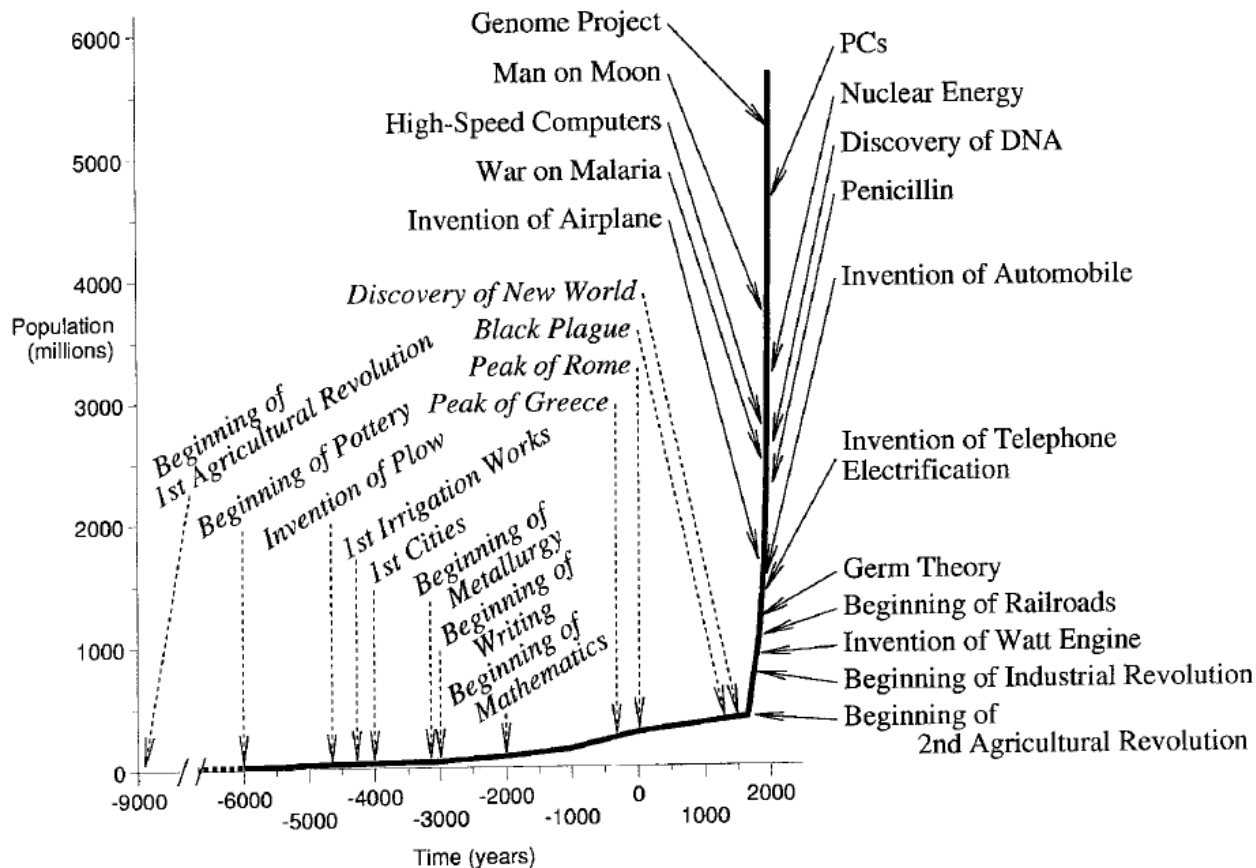


FIGURE 1. THE GROWTH OF THE WORLD POPULATION AND SOME MAJOR EVENTS IN THE HISTORY OF TECHNOLOGY

*Notes:* There is usually a lag between the invention of a process or a machine and its general application to production. "Beginning" means the earliest stage of this diffusion process.

*Sources:* Carl W. Bishop, 1936; T. K. Derry and T. I. William, 1960; Graham Clark, 1961; B. H. Slicher von Bath, 1963; Stuart Piggott, 1965; Glenn T. Trewartha, 1969; William McNeill, 1971; Jacob Bronowski, 1973; Carlo M. Cipolla, 1974; B. M. Fagan, 1977. See also E. A. Wrigley, 1987; Robert C. Allen, 1992, 1994.

# IMPORTANCE OF INNOVATION

- Innovation is about **regular + focused change** with the aim to gain **strategic advantage over competition, growth,** and ultimately **survival.**



- Firms that do not change what they offer the world (products and services) and how they create and deliver them, risk being overtaken by others who do
- Andy Grove, Co-founder of Intel: “Only the paranoid survive!”
- Microsoft: takes the view that it is always only two years away from extinction
- OECD countries spent \$700 billion per year on R&D
- More than 16,000 firms in the USA operate their own R&D labs and at least 20 US firms have annual R&D budgets of more than \$1 billion
- 16.8% - 38% of sales is generated with newly introduced products in Germany, 4% of unit costs are saved through process innovation



# INNOVATION A STRATEGIC PROCESS

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➤ Developing the Venture

- Business Plan, Implementation, Proto-typing, Testing, etc.

➤ Creating and capturing value

- Intellectual property, scaling, etc.

➤ Innovation is the starting point as it provides the opportunity, thus we need to understand innovation properly, i.e. its facets and its drivers

# LINKING INNOVATION AND ENTREPRENEURSHIP

- **Innovation** does not happen automatically – **it is driven by entrepreneurship ...**
  - a potent mixture of vision, passion, energy, enthusiasm, insight, judgement and plain hard work which enables good ideas to become reality
  - the skill/ability to 1) recognize new opportunities + 2) create ways to exploit them
- **Innovation** = process, which can be organized and managed, whether in a start-up venture or in an established firm
- **Entrepreneurship** = motive power, to drive this process through the efforts of passionate individuals, engaged teams, and focused networks
- **Creating value** = the purpose for innovation (financial, growth, employment, sustainability, social welfare)

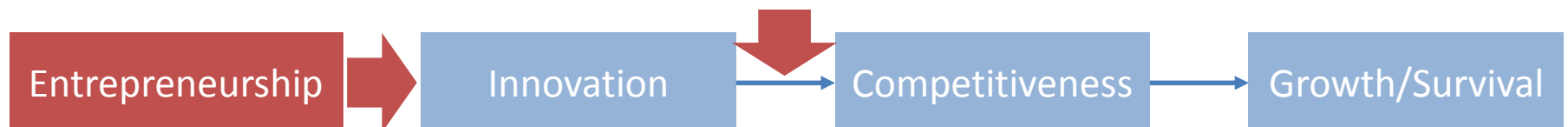








# LEVELS OF ENTREPRENEURSHIP

1. New start-up ventures
  - Create commercial value
2. Established organizations (Intrapreneurship, Corporate Entrepreneurship)
  - Renew itself in what it offers and how it creates and delivers that offering: competitive advantage, growth, survival.
3. Social Entrepreneurship
  - Passion to enabling change in a wider social sphere: sustainability or improvement of social welfare

**Entrepreneurship drives Innovation**



# ENTREPRENEURSHIP AND INNOVATION

Stage in life cycle			
Start-up	Growth	Sustain/scale	Renew
Individual entrepreneur exploits new technology or market opportunity	Growing the business through adding new products/service or moving into new markets	Building a portfolio of incremental innovation to sustain the business/spread influence into new markets	Return to the radical frame-breaking kind of innovation which began the business and enables it to move forward as something very different
			

# TYPES OF INNOVATION

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1. Product Innovation:
    - Changes in a firm's offering (products/services)
    - E.g.: a new design of a car (hybrid engine, electric cars, carbon, etc.)
    - → **enhances the product (features) → affects sales**
  2. Process Innovation:
    - Changes in the way a firm creates and delivers its offering
    - E.g.: manufacturing methods and equipment used to produce the car (3D printing)
    - → **enhances firm's operational efficiency → affects cost, profit margins**
- → Services: product and process aspects often merge

# TYPES OF INNOVATION

## 3. Position Innovation:

- Changes in the context in which the products/services are introduced rather than changing the product/service or manufacturing/delivery process
- **Shift in target market**
- E.g.: Lucozade: developed for medical convalescence → health drink aimed at the growing fitness market where it is now presented as a performance-enhancing aid to healthy exercise)
- E.g.: Haagen Dazs Ice cream: shift from targeting kids to adults



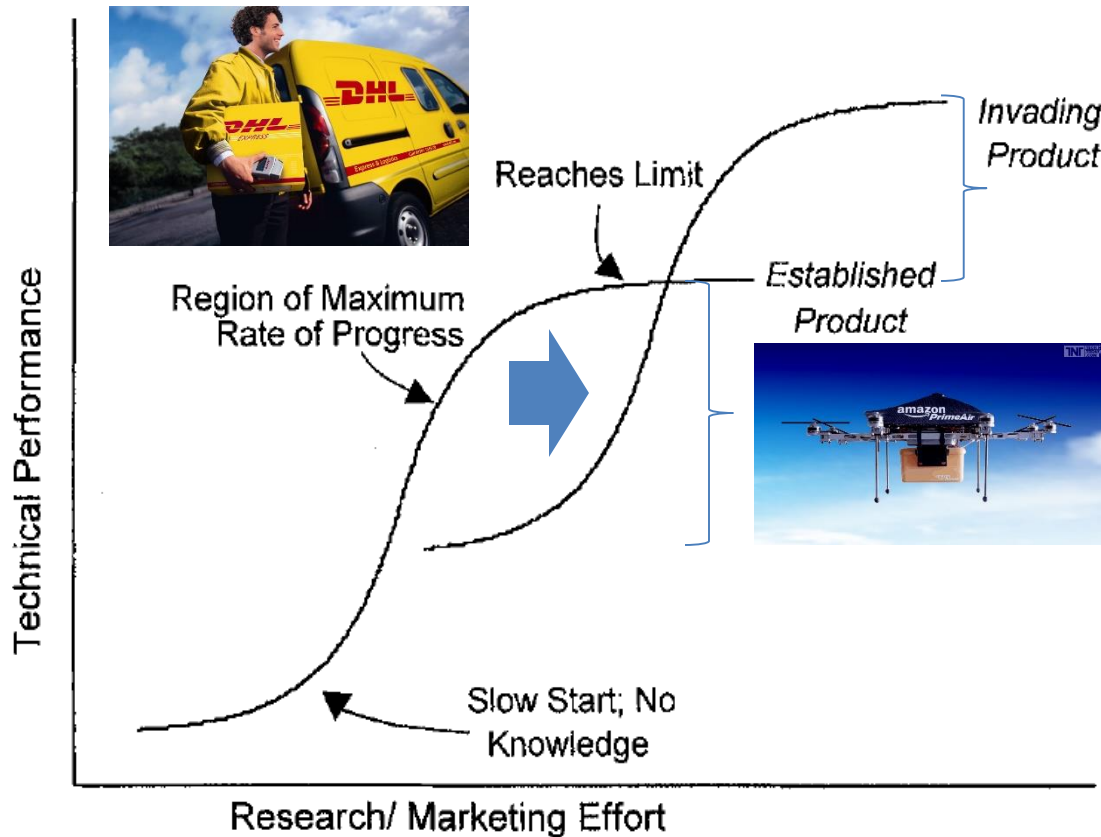
# TYPES OF INNOVATION

## 4. Paradigm Innovation:

- Changes in the underlying mental models which frame what the organisation does
- **Shifting/shaping the entire market**
- E.g. Henry Ford did not invent the motor car nor developed the manufacturing process → changed the underlying model from one which offered a hand-made specialist product to a few wealthy customers to one which offered a car for “Everyman” at a price he/she could afford
- E.g. Starbucks, Low Cost Airlines, Mercedes F105, Drones



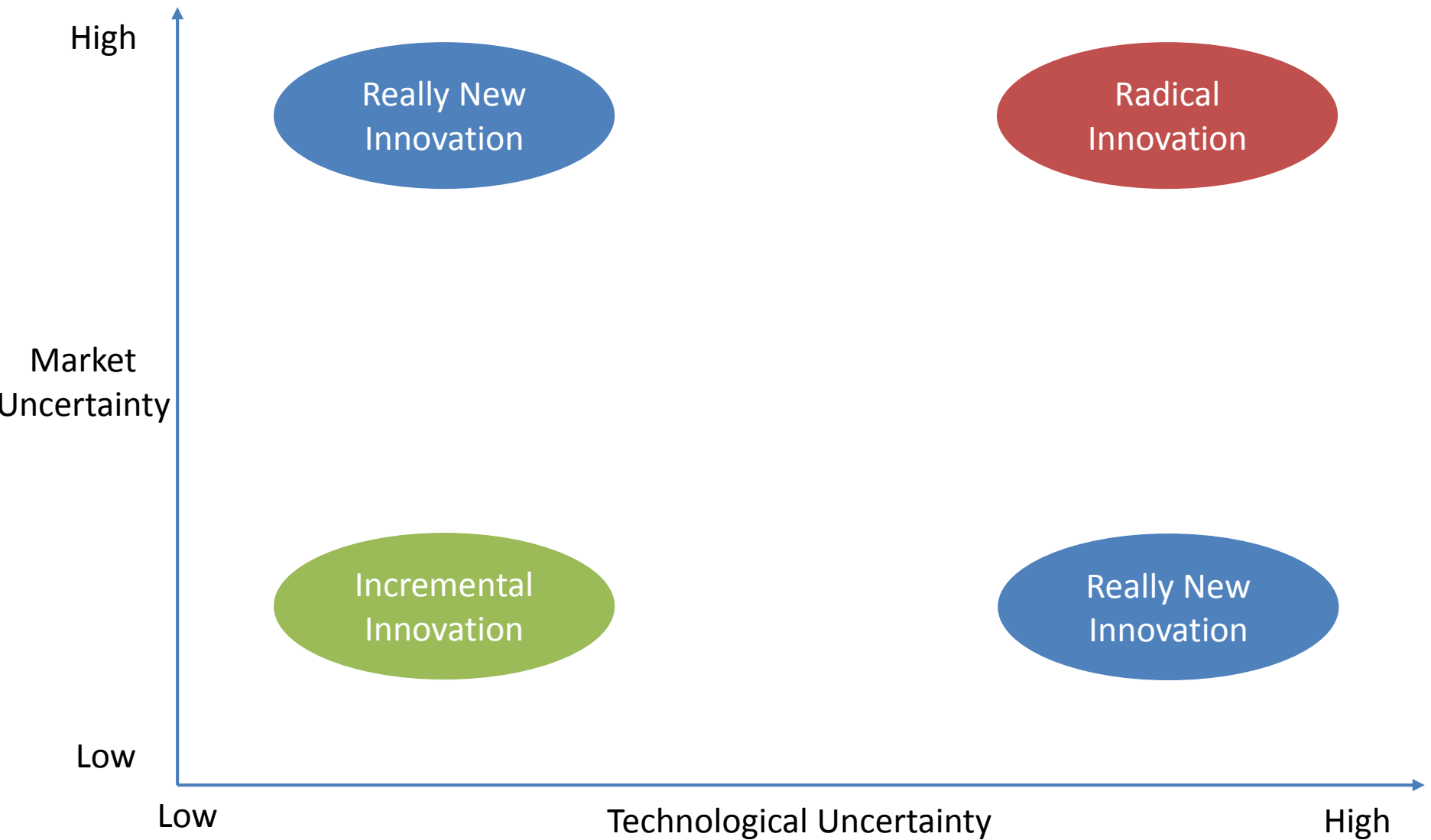
# TYPES OF INNOVATION



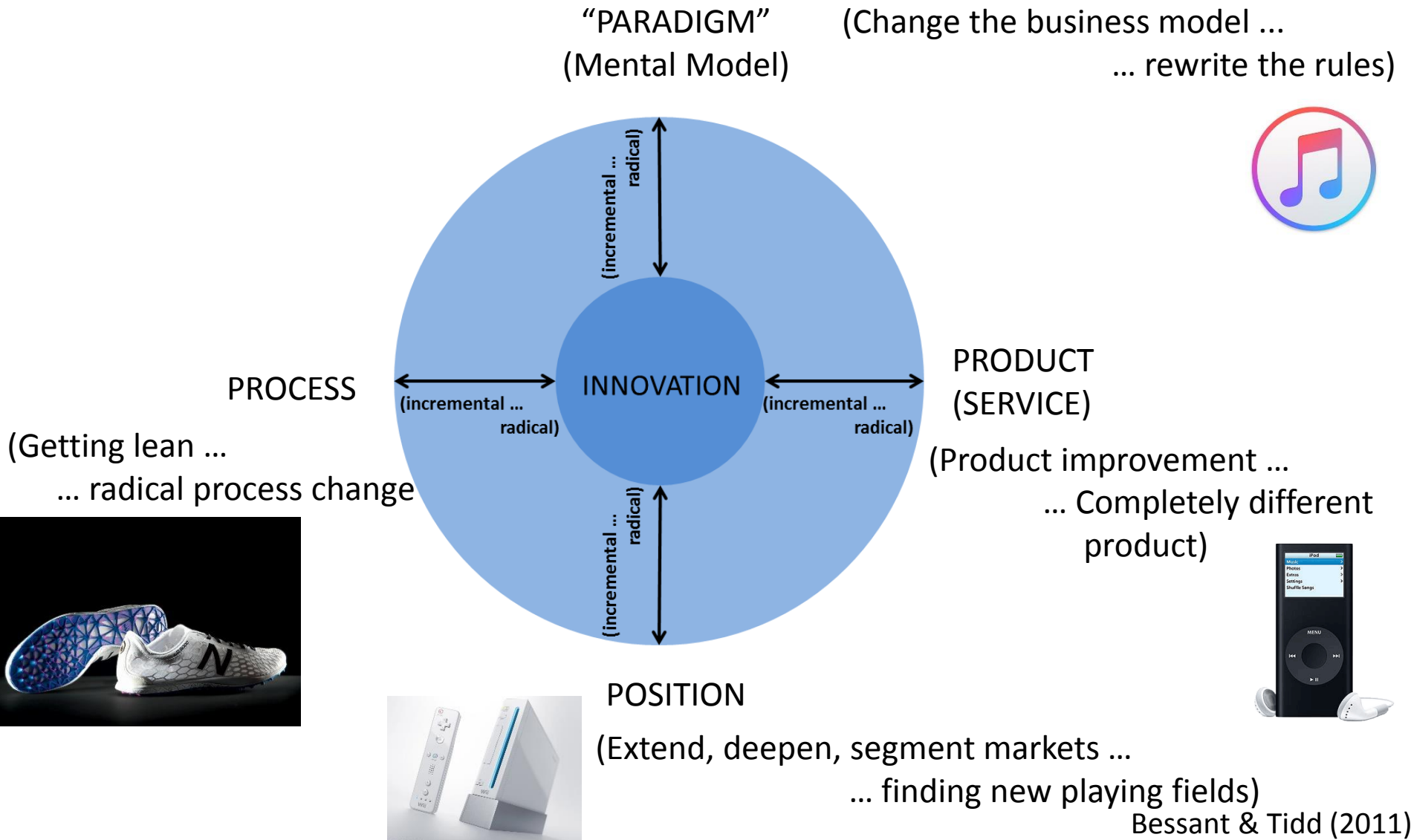
- Technological product performance + Market performance moves along an S-curve
- Radical innovation can be identified by the initiation of a new technology **and** new marketing S-curve

Fig. 1. Technology/Marketing S-Curve Phenomena (adapted from Foster 1986).

# RISKS AND REWARDS OF INNOVATIONS

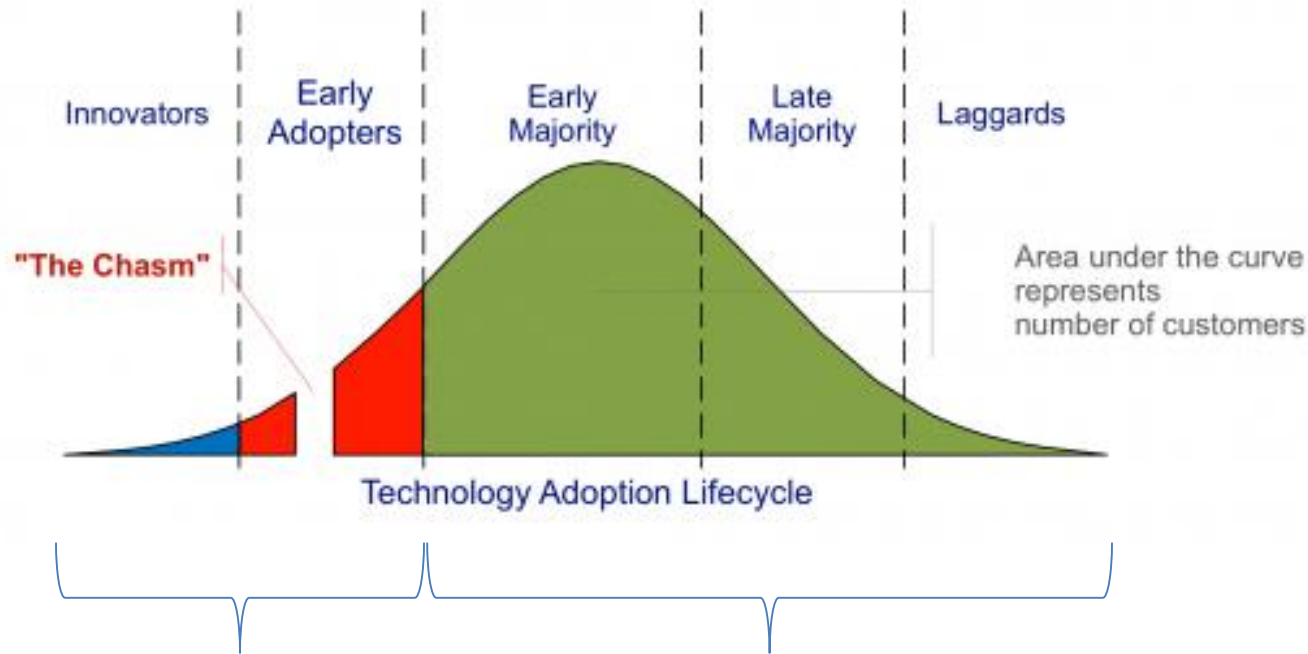


# INNOVATION STRATEGY SPACE





# Factors affecting innovation adoption



Difference in success factors:

Emphasise technical performance and novelty

Emphasise price, quality, convenience and support


Short term preferences of early adopters will have a disproportionate impact on subsequent development of the innovation → abandonment of superior alternatives

# Factors affecting innovation adoption

1. Relative advantage (**positive**)
  - perceived to be better than competing products or services: **economic** (cost, financial pay back) + **non economic** factors (convenience, satisfaction)
2. Compatibility (**positive**)
  - consistent with existing **values and norms (e.g. culture)** + **needs and experience (e.g. Marketing)** + **skills, equipment, practices and procedures (e.g. Technology + Behaviour)** of potential adopters
3. Complexity (**negative**)
  - Difficult to understand or use
4. Trialability (**positive**)
  - Product, service or innovation can be experimented with
  - Trialable innovation represent less uncertainty to the potential adopter
5. Observability (**positive**)
  - Results of an innovation are visible to others (easy to see the benefits)

# MANAGING INNOVATION AND ENTREPRENEURSHIP

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- Success in Innovation is not just about having a good idea it is about understanding Innovation and Entrepreneurship as an extended sequence of activities - a Process – that needs to be managed
  - There is a core process involved which can be organized and managed (not about being lucky just by being in the right place at the right time)
- 
- **Bridging the gap between a great idea and commercial success**

# MANAGING INNOVATION AND ENTREPRENEURSHIP

## Managing the Process:

### 1. Recognising the Opportunity:

- Ability to spot the key opportunity from a forest of possibilities
- **Searching and scanning of the environment:** R&D, market research, competitor analysis
- Drivers of Innovation:
  - New technological opportunities
  - Changing needs
  - Changing legislation (e.g. renewable energies)
  - Competitor action
  - Dissatisfaction with social conditions



# MANAGING INNOVATION AND ENTREPRENEURSHIP

## Managing the Process:

### 2. Finding the Resources

- Innovation consumes resources, however, is risky at the same time
- Resources are limited: time, money, knowledge sets, etc.
- Balancing resource requirements with uncertain outcomes
- Finding and mobilizing resources and skills
- Large Company:
  - Bringing different departments together: Marketing, R&D, Purchasing, etc.
  - Develop business case for monthly project portfolio meeting
  - Build portfolio of projects to balance risks and rewards
- Individual Entrepreneur:
  - create networks
  - Pitch to venture capitalists



# MANAGING INNOVATION AND ENTREPRENEURSHIP

Managing the Process:

## 3. Developing the venture

- Implementation
- R&D, market studies, competitor analysis, prototyping, testing, etc. to improve understanding of the innovation and whether it will work
- Developing a business plan
- Launch into market place
- Project management – balancing resources against time and budget – but doing so against the background of uncertainty



# MANAGING INNOVATION AND ENTREPRENEURSHIP

## Managing the Process:

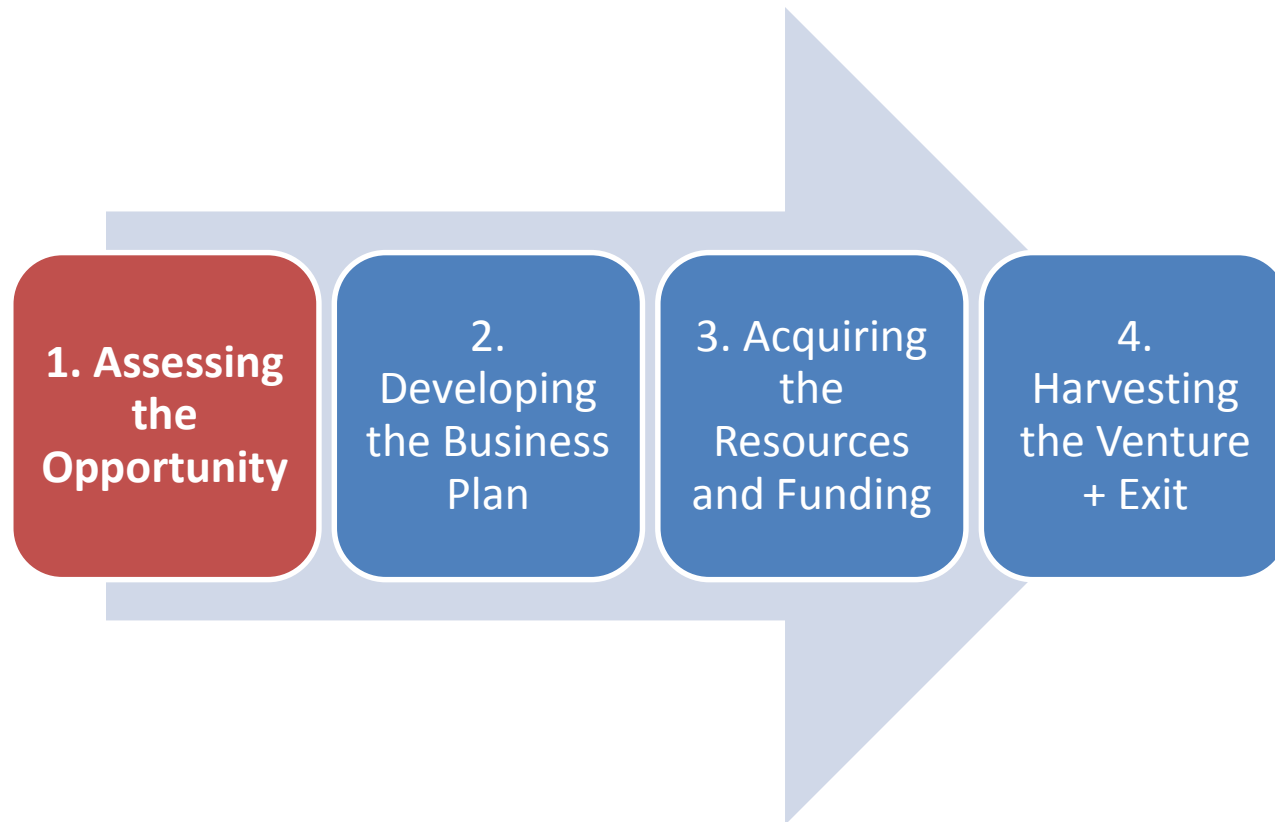
### 4. Creating Value

- Capturing value from the innovation: stream of income, social gains, recovery of investments of time, energy and money
- Protecting the idea/intellectual property
- Capturing learning from failure to develop an innovation capability



- Exit strategy?

# PROCESS AND STAGES FOR CREATING A NEW VENTURE



1. **Assessing the opportunity** – generating, evaluating and refining the **business model**
2. **Developing a business plan** – internal stress test + external communication
3. **Acquiring the resources** – including expert support and potential partnerships
4. **Growing and harvesting the venture** – how to create and extract value from the business



## 2. PROFIT FORMULA

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How can the company create value for itself, while providing value to the customer?

➤ Capture value

1. Revenue model (sales)

2. Cost structure

- Variable costs + fixed costs, economies of scale → low/high volume

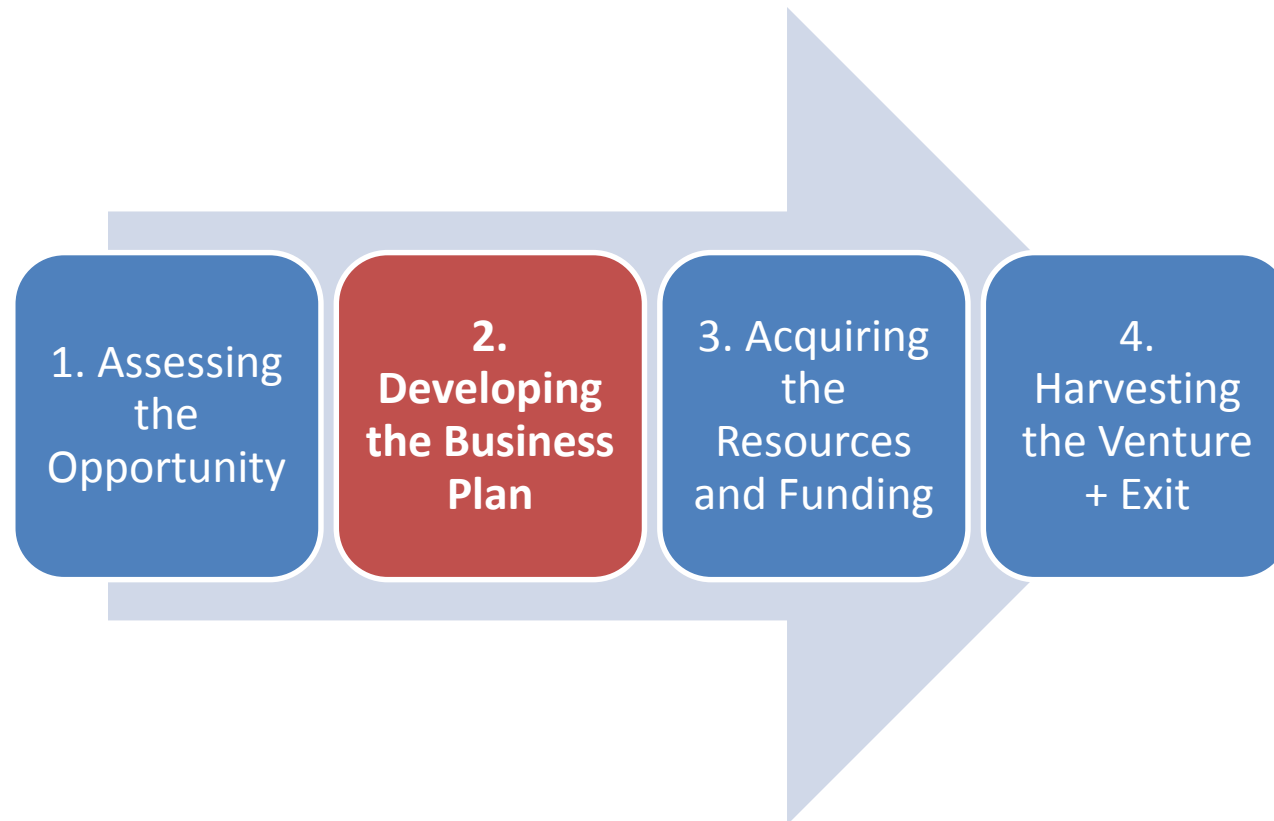
3. Margin model

- low margin/large volume *versus* high margin/low volume → profits

4. Resource velocity (speed at which resources flow through)

- inventory turnover speed, revenue cycles

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# BUSINESS PLANS

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## Business Plans:

- **Attract** funding for a venture
  - **Translate** abstract or ambiguous goals into more explicit operational needs, and support subsequent decision-making and identify trade-offs
  - Make risks and opportunities more **explicit**: Technology, Market, Competition, etc.
- 

Think through + articulate your business idea/model in a **systematic way**

- **Communicate** Business idea **externally**
- **Understand** Business idea **“internally”**

# BUSINESS PLANS

## Common problems with Business Plans submitted to VCs:

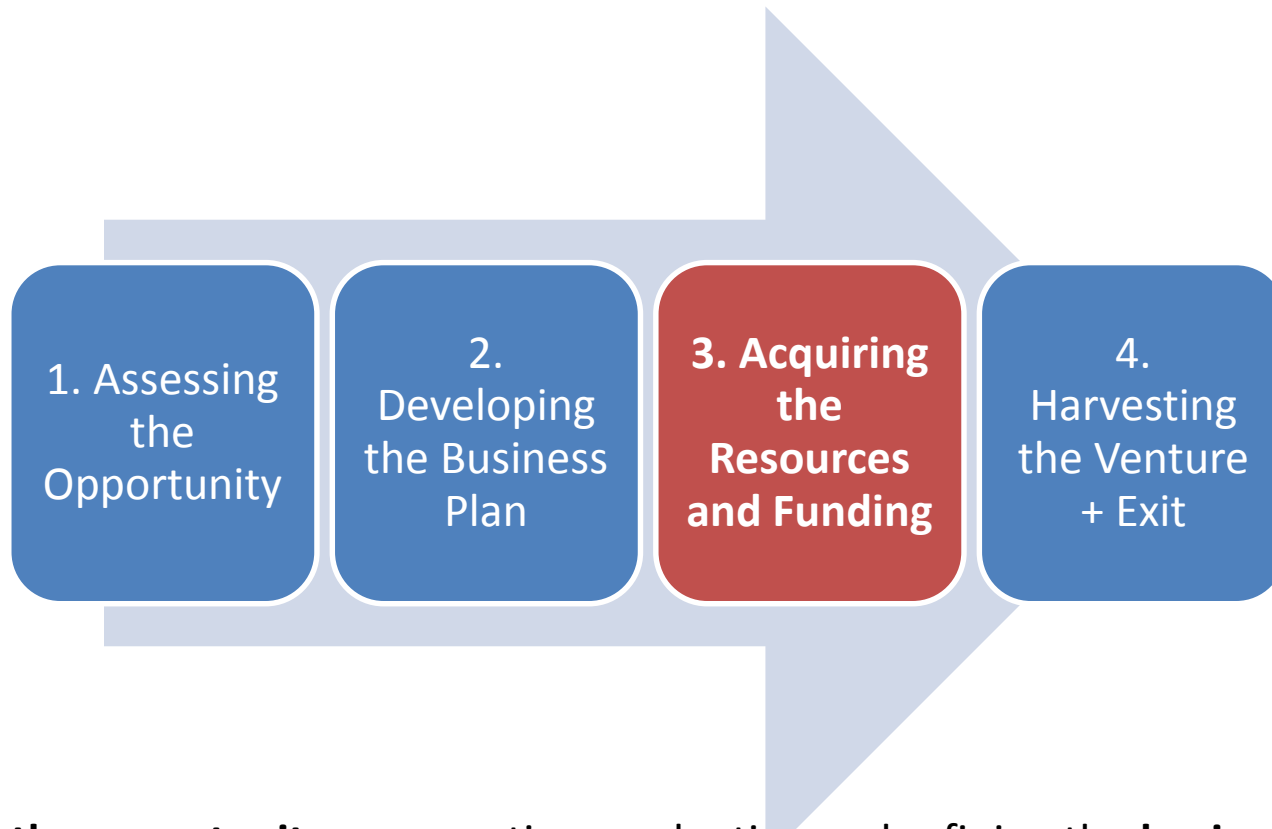
- Too much emphasis on technology relative to other issues

### ➤ Lack of:

- sales plan (50%)
- detailed marketing strategy (>50%)
- competitor analysis (75%)
- financial forecasts and sensitivity analysis (90%)

**Commercial**  
aspects

# PROCESS AND STAGES FOR CREATING A NEW VENTURE

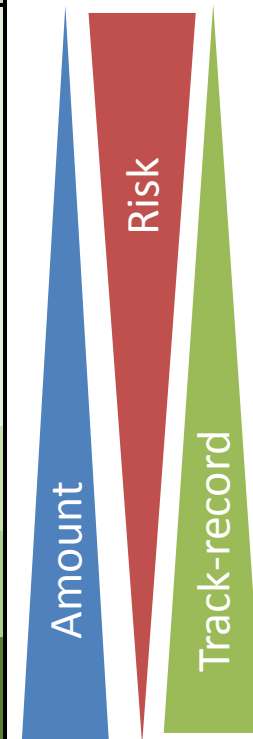


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Sources of funding	Stages of financial requirements	Cost
Self-funding	1) Initial financing for launch	Equity
Family and friends		
Incubators		
Government schemes		
Business angles	2) 2nd-round financing for initial development and growth	Equity
Venture capitalist	3) 3rd-round financingn consolidation and growth/maturity and exit	Equity/ Management Involvement
Bank loans		Interest



# PROCESS AND STAGES FOR CREATING A NEW VENTURE

## 3. Acquiring the resources

- *Business Incubators:*
  - Small amounts of financial resources, but start-up mentoring/coaching, office space, operational services (IT, legal, accounting, recruiting, PR), and network.
- *Government Funding:*
  - Fill the “equity funding gap” between the costs and risk involved in assessing and funding a new venture and its potential return
  - Fill the “equity funding gap” for certain industries overlooked by professional investors

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# PROCESS AND STAGES FOR CREATING A NEW VENTURE

## 3. Acquiring the resources

- *Angel Investors:*
  - Usually successful Entrepreneurs: individuals or act as a group
  - Primarily early stage ventures
  - GBP 100,000 – GBP 250,000
  - In addition to financial resources, business angels provide access to networks
- *Venture Capital:*
  - Institutional investors
  - Not interested in initial funding due to **high due diligence cost + high risk + unproven development and sales record**, i.e. look for proven track record and strong business plan (5% early/start-up vs. 29% expansion vs. 66% management buy-outs/in)
  - Early stage investments: 1) GBP 0.5M – GBP 1M + 2) management expertise/coaching/network
  - Only **accept 3% - 5%** of the ventures they are offered
  - Tend to look for **5 year exit**
  - In addition to financial resources VCs provide experience and networks

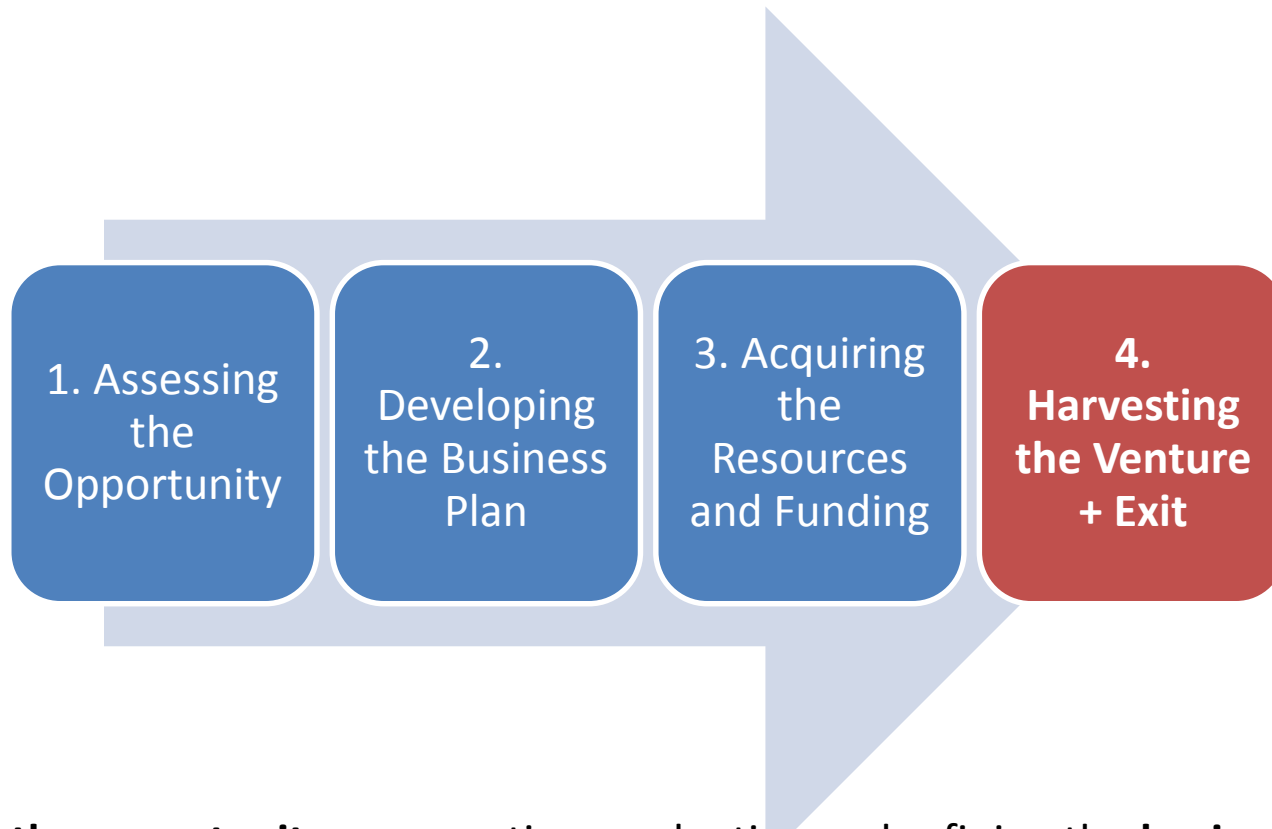


# PROCESS AND STAGES FOR CREATING A NEW VENTURE

## 3. Acquiring the resources

- Funding needs vary by several factors
  - *Type of venture:*
    - Technology ventures often require external funding for product development and cannot be funded with cash-flows from early sales (no marketable product available)
    - Software-based ventures require less funding than either electronics or biotech ventures
  - *Growth strategy:*
    - Organic versus expedited growth strategy (contingent on the competitive environment): potential trade-off between **high equity/low market share/firm value** and **low equity/high market share/firm value**
  - *Stage of Business Life-cycle*

# PROCESS AND STAGES FOR CREATING A NEW VENTURE



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4. **Growing and harvesting the venture**
  - 40% of business fail in their first year, 60% within the first two years
    - Poor financial control
    - Lack of managerial ability or experience
    - No strategy for transition, growth, exit
    - Overdependence on a small number of customers:
      - Vulnerability to strategy changes and health of customer
      - Loss of negotiation power
      - Underdeveloped marketing and sales functions

# PROCESS AND STAGES FOR CREATING A NEW VENTURE

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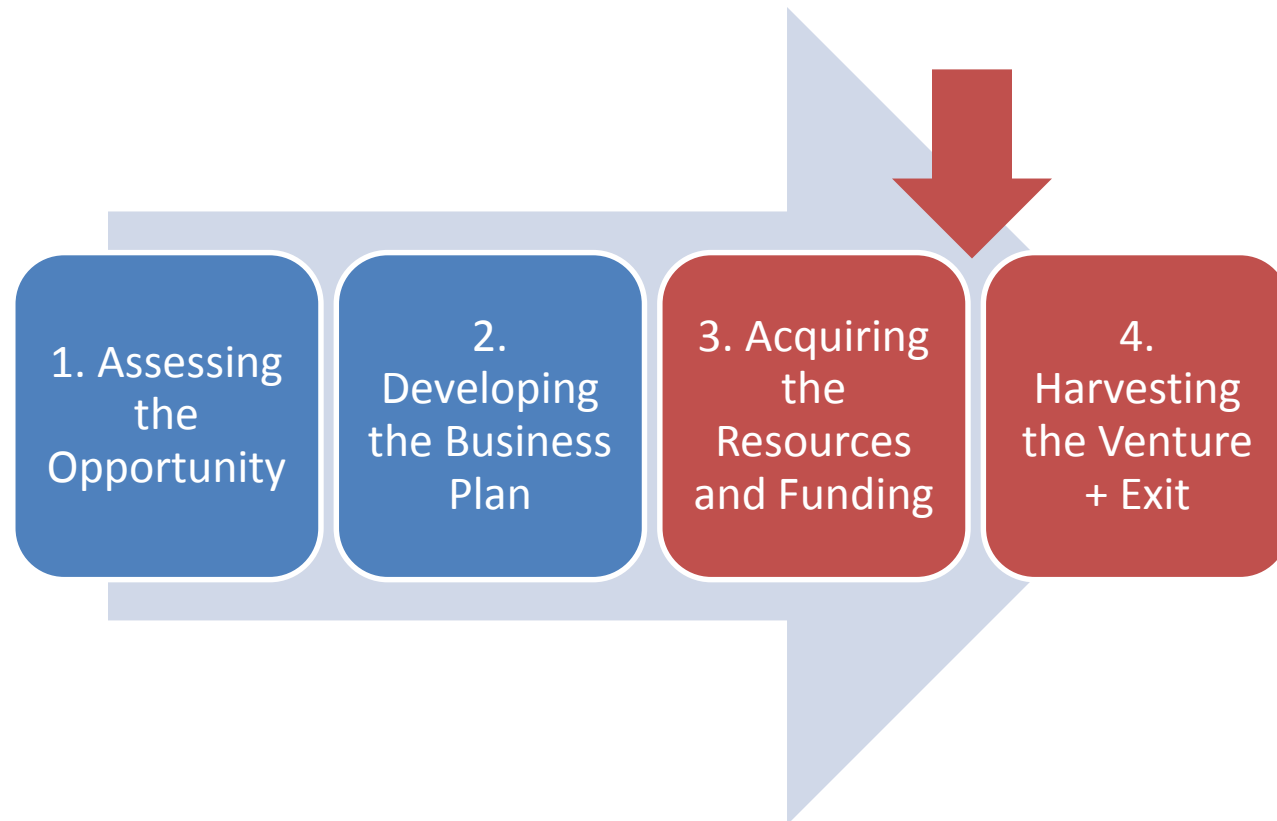
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  - For the ones that succeed:
    - **Organic growth:** sales/market share
    - **Acquisition of** or merger with another company
    - **Sale of the business to** another company, or private equity firm (quite common)
    - **Initial public offering (IPO)** on a stock exchange (relatively rare – less than 2% of VC funded new ventures in the UK exit via an IPO, compared to more than a quarter by trade sale)

## CONCLUSION

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- Both building the case and assessing the case usually involves business plans
- Four main elements of business plans
- Research shows that business plans are only part of the VC funding decision
- The ceremonial role of business plans

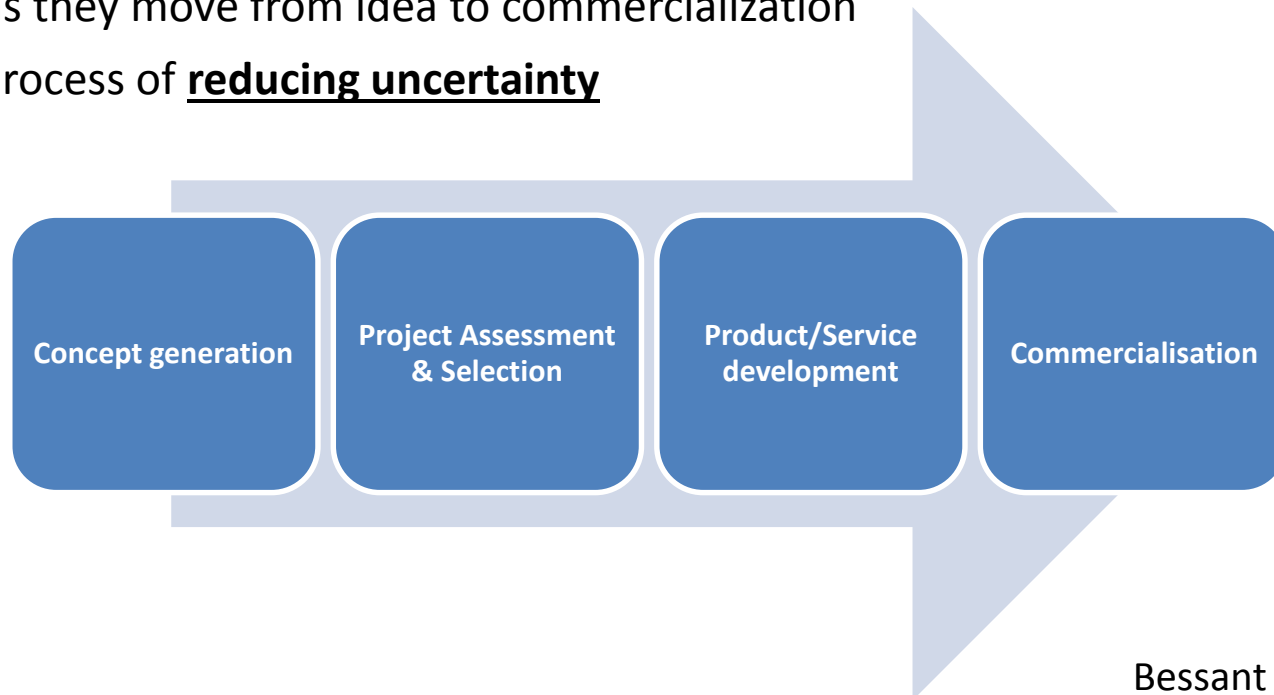
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# PROCESS FOR NEW PRODUCT AND SERVICE DEVELOPMENT

- Managing new product or service development requires a fine balance between the **costs of continuing with projects**, which may not eventually succeed, and the danger of closing down too soon and **eliminating false negatives**
- Successful product development follows **a structured and staged process**
  - Each stage has different **decision criteria or “gates”** which projects must pass
  - **Systematic** identification, screening, reviewing, monitoring and development of projects as they move from idea to commercialization
  - Gradual process of **reducing uncertainty**



# PROCESS FOR NEW PRODUCT AND SERVICE DEVELOPMENT

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## 1. Concept Generation

- Identify the **opportunity** for a new product or service: **Demand Pull & Knowledge Push; Open Innovation**
- Focus is on understanding **customer needs (knowing your customers)**:
  - Surveys, focus groups, latent needs analysis, lead users, customer-developers, competitor analysis (reverse engineering, benchmarking), industry experts, extrapolation of trends, building scenarios (alternative futures), market experimentation



# PROCESS FOR NEW PRODUCT AND SERVICE DEVELOPMENT

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## 2. Project Assessment and Selection

- **Screening and selection of projects prior to development** based on a series of explicit criteria for decision-making:
  - Value proposition (market, needs, competition)
  - Profit formula (revenue model, cost structure → to inform NPV, IRR, cost-benefit analysis, pay back period etc.)
  - Resource requirements (VRIO/Gap analysis)
- Implications of failing to select the best projects:
  - Resource cost
  - Opportunity cost

# PROCESS FOR NEW PRODUCT AND SERVICE DEVELOPMENT

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## 3. Product/Service Development

- Translate customer requirements into development needs/physical products or service concepts: → R&D staff, designers, engineers and marketing staff must work together
  - *Design to Manufacture* (80% of the production costs are determined at the design stage)
  - *Rapid Prototyping* (Customer feedback + Manufacturing process development)
  - *Computer-Aided Techniques* (Reduction on development lead time, complexity of products)
  - *Quality Function Deployment*: → translate customer needs in development needs
    - Identify customer requirements (primary and secondary data).
    - Rank requirements according to importance.
    - Translate requirements into measurable characteristics.
    - Establish the relationship between the customer requirements and technical product characteristics.
    - Choose appropriate units of measurement and determine target values based on customer requirements and competitor benchmarks.

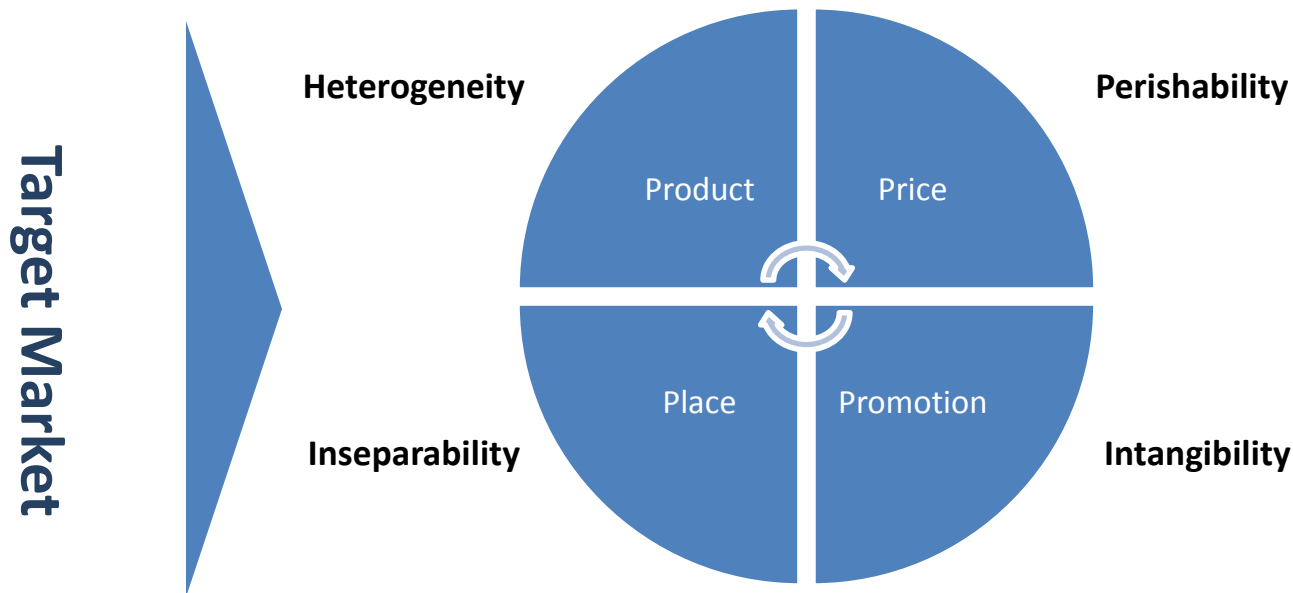
## 4. Commercialization

- Customer co-development, test marketing (alpha, beta and gamma test sites): **customer buy-in + address customer needs**

# SERVICE IMPLICATIONS: 7Ps OF SERVICE MARKETING

## Marketing Mix (4Ps)

- Defined as the **elements an organization controls** that can be used to **satisfy or communicate** with customers.
- The traditional marketing mix is composed of the four Ps: *product, price, place* (distribution) and *promotion*
  - They are core decision making variables
  - All variables are **interrelated and depend on each other**
  - An **optimal mix** of the four factors exists for a given **market segment** at a given point in time



# 7Ps OF SERVICE MARKETING

## People

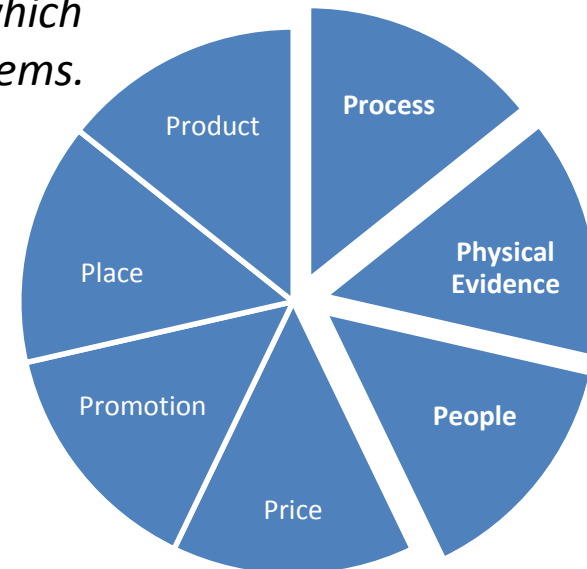
- ***All human actors*** who play a part in service delivery and thus influence the buyer's perceptions: namely, 1) the firm's personnel, 2) the customer, and 3) other customers in the service environment

## Physical evidence

- ***The environment*** in which the service is delivered and where the firm and customer interact, and any tangible components that facilitate performance or communication of the service.

## Process

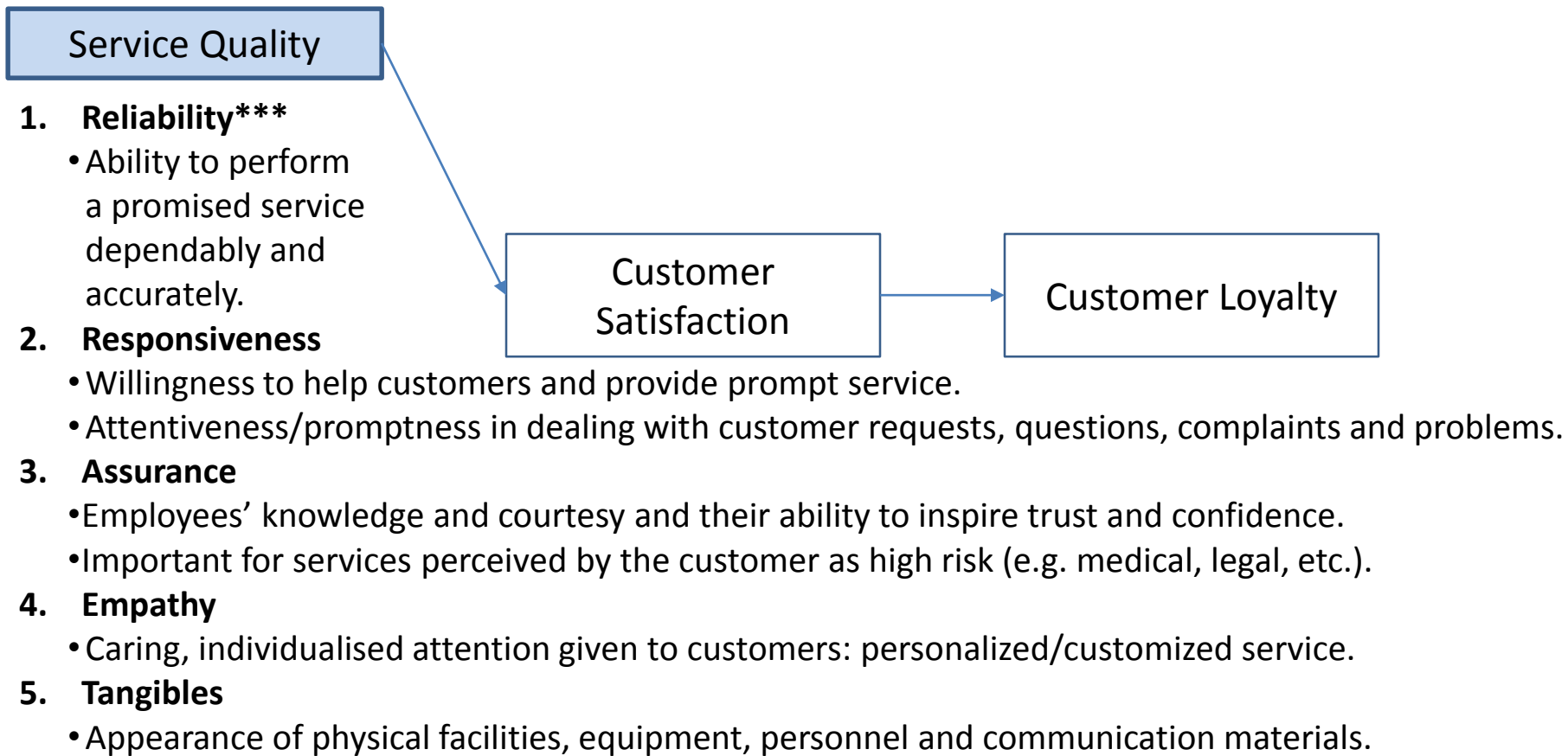
- The actual procedures, mechanisms, and ***flow of activities*** by which the service is delivered – the service delivery and operating systems.



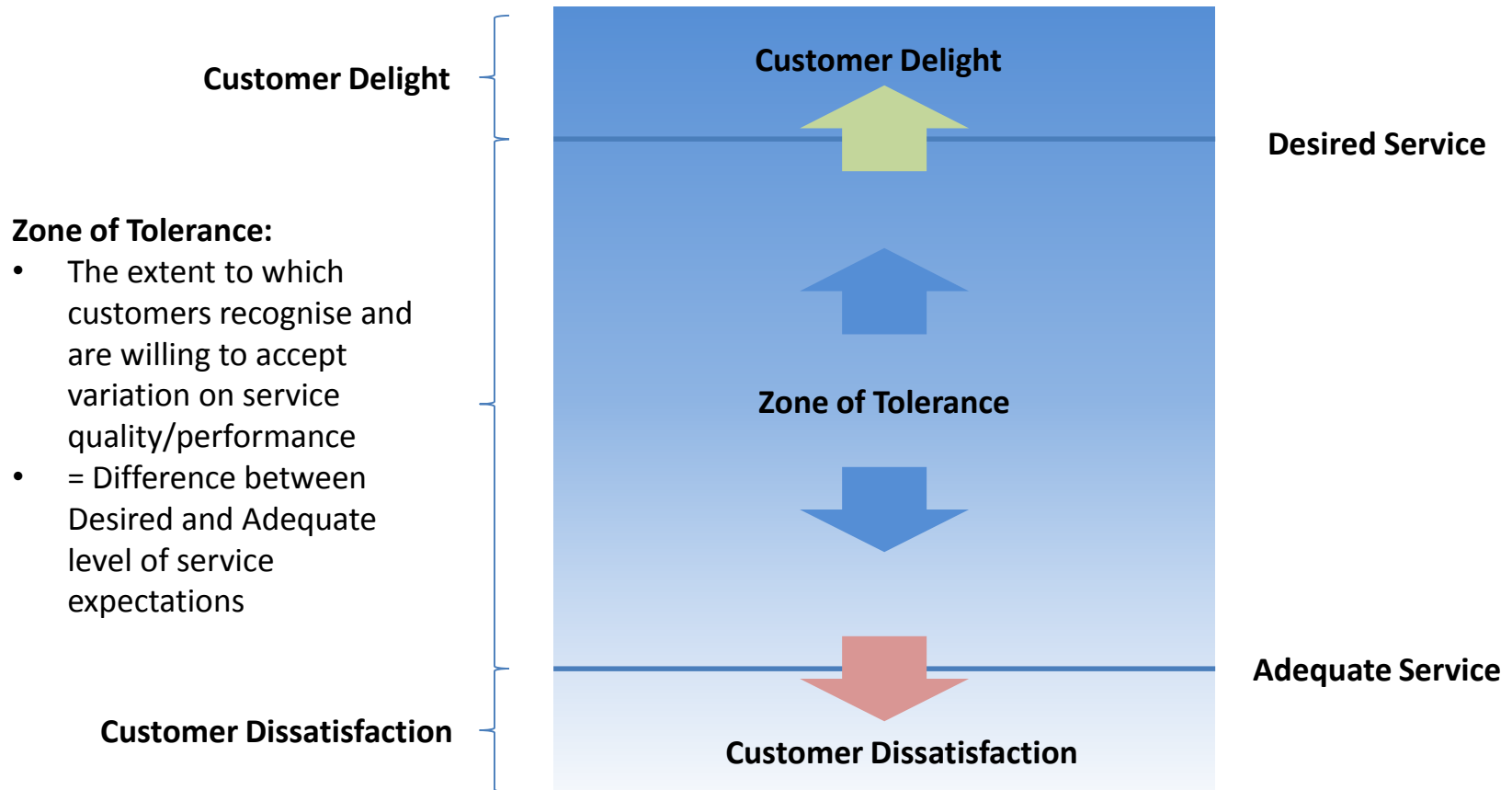
# CUSTOMER EXPECTATIONS AND THE ZONE OF TOLERANCE

**Service Quality:** focused evaluation that reflects the customer perception of reliability, assurance, responsiveness, empathy, and tangibles

- Consumers judge quality based on multiple factors relevant to the context
- **SQ = Expectations – Perceived Performance**



# CUSTOMER EXPECTATIONS AND THE ZONE OF TOLERANCE

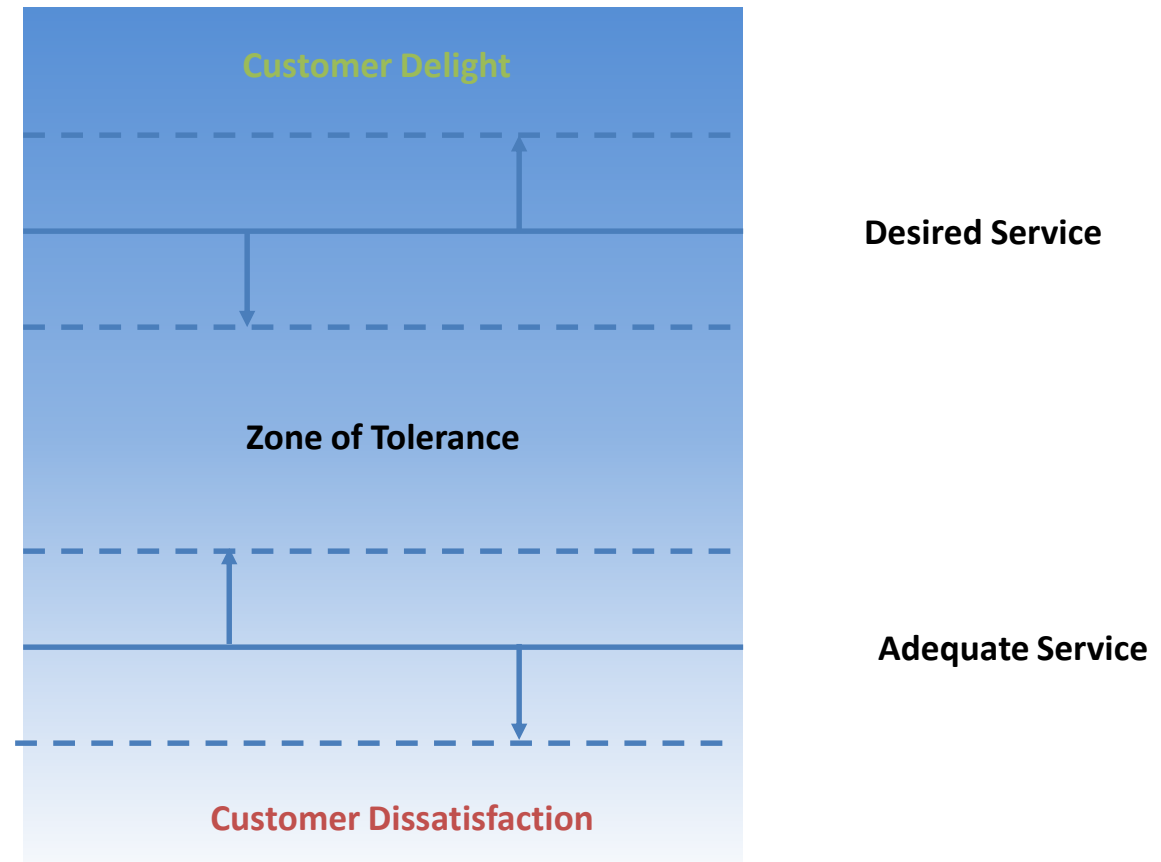


# CUSTOMER EXPECTATIONS AND THE ZONE OF TOLERANCE

## Zone of Tolerance:

1. Varies between customer (groups)
  - can **expand** and **contract** within the same customer
  - E.g. waiting time at the airport security
2. Varies for service attributes or dimension

Not only important to understand the size and boundary levels of the zone of tolerance + but also when and how the tolerance zone fluctuates with a given customer



# SERVICE INNOVATION AND DEVELOPMENT PROCESS

## Phase 1: Front-end planning

### 1. Business strategy development or review

- *Cost-leadership, Differentiation, Focus*

### 2. New service strategy development

- *Ansoff Matrix*

### 3. Idea generation

- *Sources of Innovation/Searching for Innovation* → **Screen** ideas **against** new service strategy: **GO** or **NO GO**?

### 4. Concept development and evaluation

- *Value Generation*: define the core and peripheral benefits → **Test** concept with customers and employees: **GO** or **NO GO**?

### 5. Business analysis

- *Value Capture*: Demand analysis, revenue projections, cost analysis, operational feasibility → **Test** for profitability and feasibility: **GO** or **NO GO**?



# SERVICE INNOVATION AND DEVELOPMENT PROCESS

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## Phase 2: Implementation

### 6. Service development and testing

- **Service blueprinting** → Implementation plan → Conduct service prototype test: **GO** or **NO GO?**

### 7. Market testing

- Test new service and other marketing mix elements: **GO** or **NO GO?**

### 8. Commercialization

- Monitoring the customer service experience as well as the operational efficiencies

### 9. Post-introduction evaluation

- Review of information gathered during the commercialisation of the service and implementation of necessary changes

# SERVICE BLUEPRINTING

## The Challenge:

- A stumbling block in service innovation and development is the difficulty of **describing and depicting the service at the concept development, service development, and market test stages so that employees, customers, and managers know what the service is** (i.e. understand all the steps and flow involved in the service process)

## Service Blueprint:

- Is a picture or map that accurately depicts the service system and **breaks it down into its logical components**:
- It simultaneously depicts:
  - the process of the service delivery
  - the points of customer contact
  - the roles of customers and employees
  - the visible elements of the service

# SERVICE BLUEPRINTING

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## Building a Service Blueprint

6. Add physical evidence of service at each customer action step

1. Identify the process to be blueprinted
2. Identify the customer or customer segment
3. Map the process from the customer's point of view
4. Map contact employee actions, onstage ...

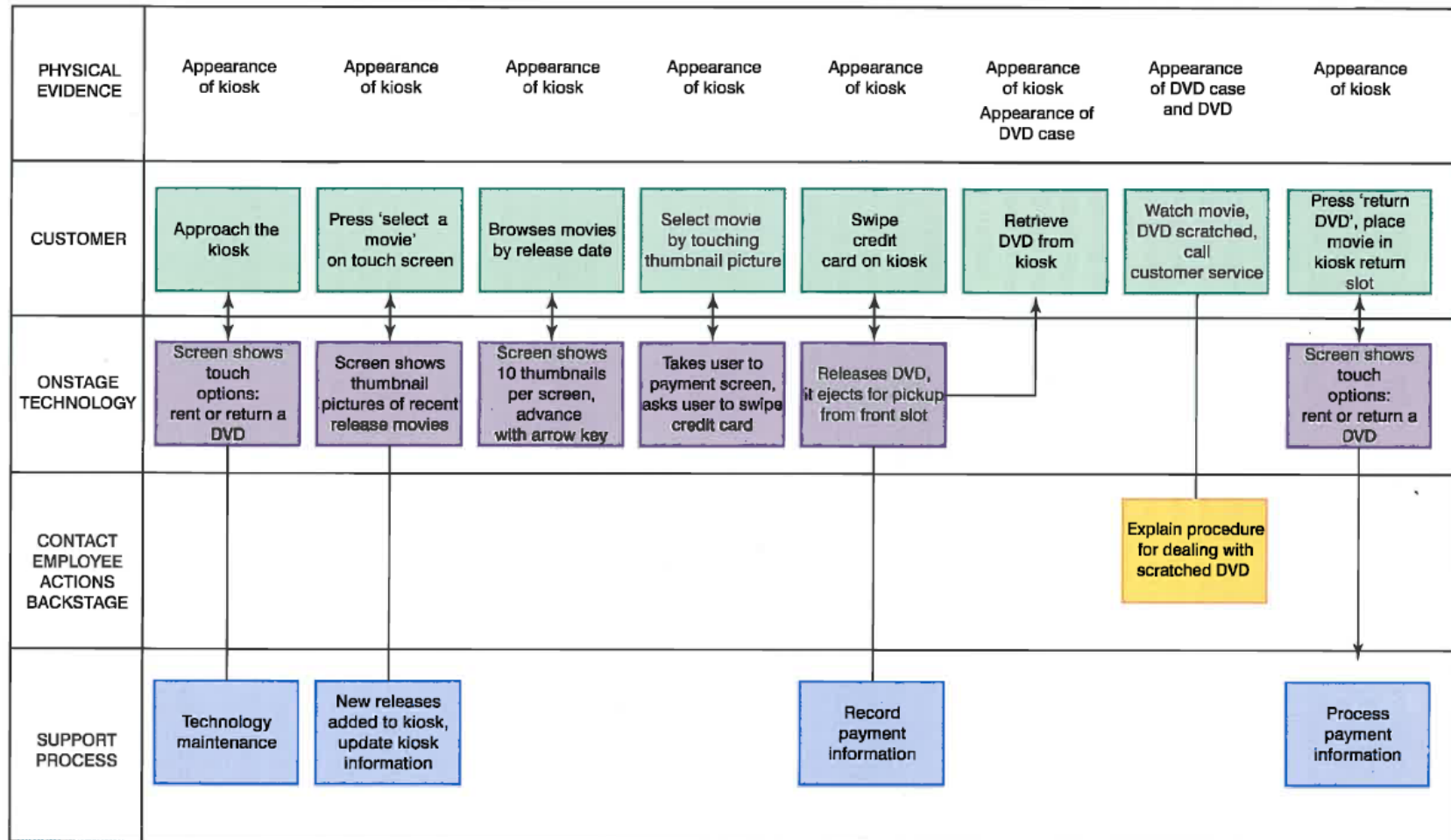
... and backstage and /or technology actions

5. Link contact activities to needed support functions

# SERVICE BLUEPRINTING

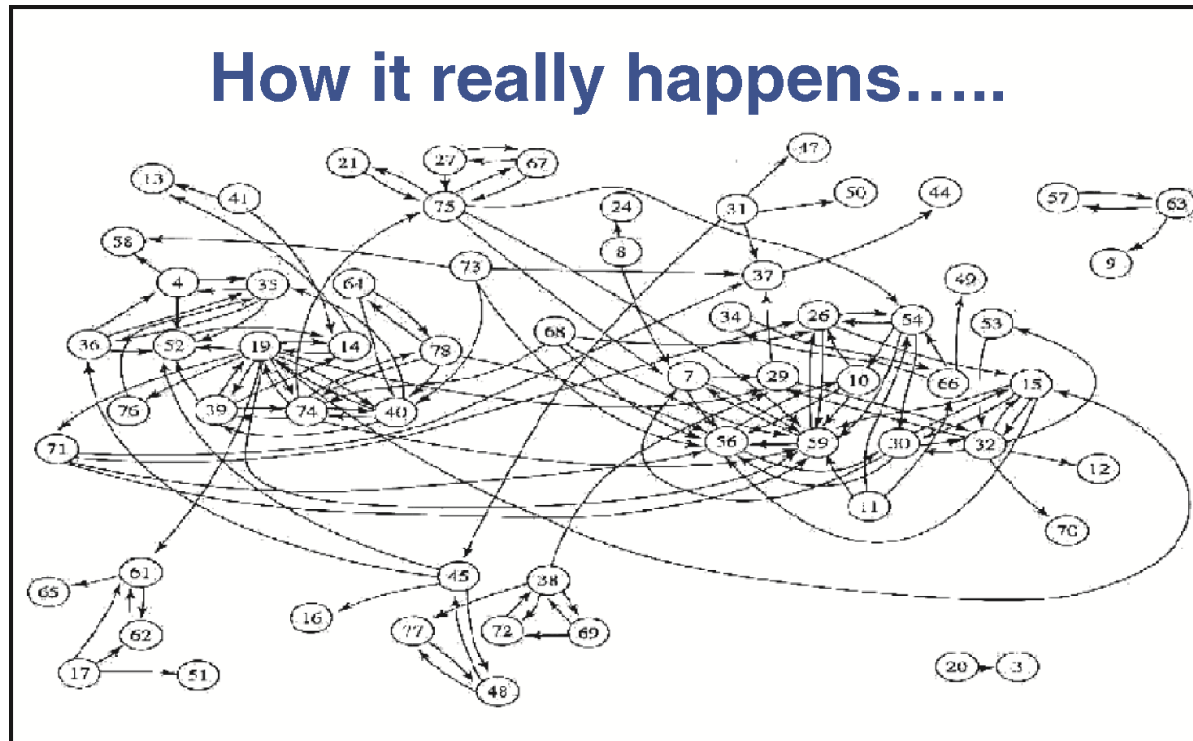
## Building a Service Blueprint

Figure 8.6 Blueprint for an automated DVD rental kiosk



# WHY NETWORKS MATTER

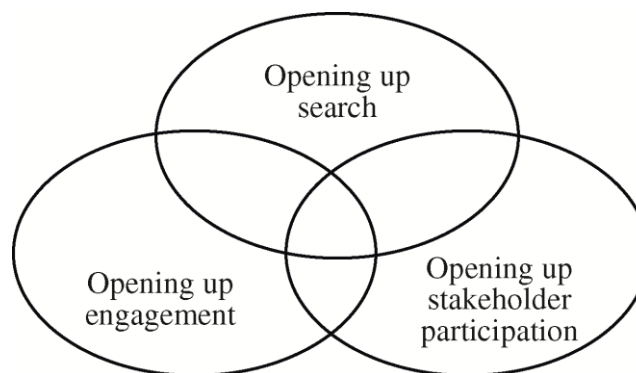
- Innovation is about **combing resources** (e.g. skills, technology, knowledge, etc.)
- Many of those resources lie **outside of the firm**
- **Complex and interactive resource flows that drive innovation**



# IMPORTANCE OF NETWORKS

- Pooling **complementary resources**: knowledge, skills, technology, assets, channels, brands finance:
  - **Shared creativity, experimentation, experiences, and learning** (think about your team vs. individual analysis): get more and different minds on the job
  - **Shared risks** of exploration and exploitation
- Networking is **important across the innovation process**: finding and developing the opportunity → finding the resources → capturing value
- **Relevant across the whole firm life-cycle**, i.e. start-up → incumbent

Networks on the **inside**:  
Think about **Creativity**  
and **Culture**



Networks on the **outside**:  
Think about **Open**  
**Innovation**

# CHANGING INNOVATION CONTEXT

---

- **Technology:**
  - **Acceleration of knowledge production**: extending the frontier along which innovation can happen
  - **Global distribution of knowledge production** (e.g. emerging economies, BRIC countries): extending the innovation search space
- **Demand:**
  - **Market fragmentation**: extending the range of markets and segments (e.g. diverse needs, mass customization, bottom of the pyramid)
  - **Active users**: customer participation in innovation

# WHERE IS THIS?



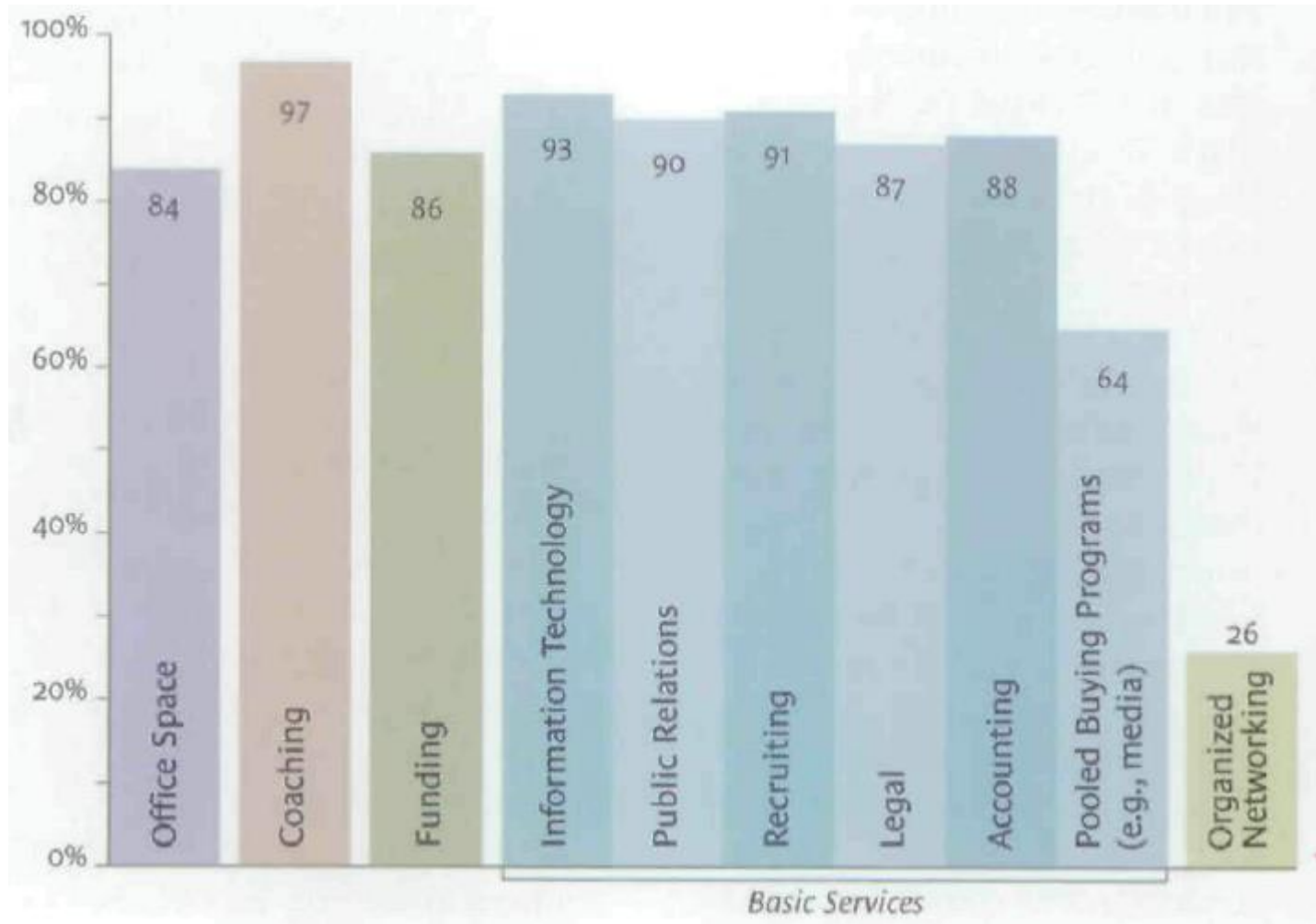


## CLUSTERS V. INCUBATORS

- **Cluster**
  - “networks that form because of the players being close to each other, for example, in the same **geographical region**” (Bessant & Tidd, 2011: 260)
- **Incubator**
  - An **organisation** that offers “office space, funding and basic services (recruiting, accounting, legal) to start-ups in return for equity stakes” (Hansen, Chesborough, Nohria and Sull, 2000: 75)

- Entrepreneurs need more than location, public infrastructure and proximity... : “Critical need for access”
- “**Networked incubators** combine the benefits of two diverse worlds – the **scale and scope** of large established corporations and the **entrepreneurial drive** of small venture-capitalist firms”
    1. Take **small equity stakes** to maintain entrepreneurial drive and flexibility
    2. **Preferred rates** and terms from top-tier service providers through **demand pooling**, i.e. economies of scale
    3. Preferential **access to network of companies and experts** (25% of incubators)

## WHAT INCUBATORS OFFER

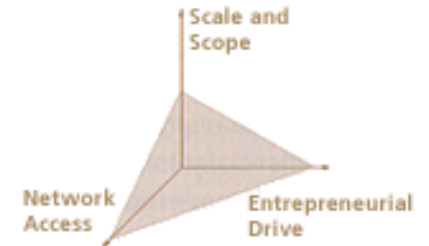
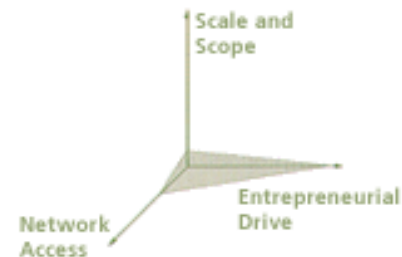
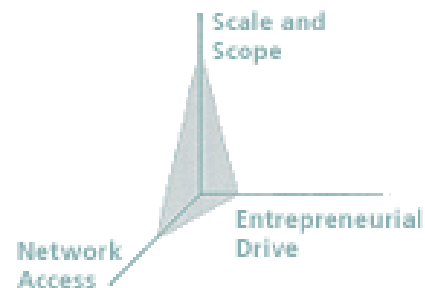


## Established Companies

## Venture Capitalists

## Networked Incubators

	Established Companies	Venture Capitalists	Networked Incubators
<b>Scale and Scope</b> <i>leveraging size and reach in order to lower costs by pooling resources and spreading them across units</i>	<b>High</b> Historically the key advantage of large global companies.	<b>Low</b> VC-backed start-ups are left alone to obtain services and buy supplies.	<b>Medium</b> Common services and pooling of resources ensure some benefits, especially time savings.
<b>Entrepreneurial Drive</b> <i>stimulating individuals to pursue risky and disruptive innovations</i>	<b>Low</b> Red tape hinders new ventures; entrepreneurs are not rewarded.	<b>High</b> Entrepreneurs are free to pursue ventures and own large equity stakes.	<b>High</b> Entrepreneurs are free of red tape and own equity in ventures.
<b>Network Access</b> <i>forging partnerships, obtaining advice, and recruiting people</i>	<b>Medium</b> Many established companies have some, but not extensive, contacts with Internet companies.	<b>Low</b> A VC partner may have an excellent personal network, but it doesn't go beyond the individual partner.	<b>High</b> Organized and active networking among portfolio companies and strategic partners.



Hansen et al. (2000: 80)

Hansen et al. (2000)

## DESIGNING SUCCESSFUL NETWORKS

---

Hansen et al. (2000:82)

- Formal links with external experts
- Bring outside experts on site
- Specialised deal brokers
- Economic incentives
- Processes for information and know-how exchange
- Schedule occasional, but regular, meetings

Bessant & Tidd (2011: 357)

- Highly diverse
  - Network partners from a wide range of disciplines and backgrounds
- Third-party gatekeepers/neutral knowledge brokers
  - Universities, Consultants, Trade associations
- Financial leverage
  - Access to investors (Business Angels, VC, Corporate venturing)
- Proactive management and member participation

# REGIONAL CLUSTERS

FIGURE 7.1. GLOBAL INDUSTRY CLUSTERS



SOURCE: CLAAS VAN LINDE, "CLUSTER META-STUDY: LIST OF CLUSTERS AND BIBLIOGRAPHY," INSTITUTE FOR STRATEGY AND COMPETITIVENESS, HARVARD BUSINESS SCHOOL, OCTOBER 2002. [HTTP://DATA.ISC.HBS.EDU/CP/INDEX.JSP](http://data.isc.hbs.edu/cp/index.jsp). MAP BY PAULO RAPOSO

## EUROPEAN MEGA-REGIONS



Figure 6: Europe mega-regions

# NORTH AMERICAN MEGA-REGIONS



Figure 5: North America mega-regions

# ASIAN MEGA-REGIONS



Figure 7: Asia mega-regions



# TOP 3T CITIES IN USA: TECHNOLOGY, TALENT, TOLERANCE

## Appendix B: Rankings of Top 50 Metropolitan Areas by Various Indices

Metropolitan Area	Rankings						
	Milken Tech-Pole	Milken Tech-Growth Index	Composite Diversity	Gay Index	Foreign Born Index	Bohemian Index	Talent Index % College Degree
San Francisco	1	10	2	1	4	8	3
Boston	2	36	6	8	9	9	2
Seattle	3	20	5	6	15	1	6
Washington D.C.	4	24	3	2	10	6	1
Dallas	5	9	15	19	16	15	10
Los Angeles	6	50	1	7	2	2	23
Chicago	7	13	11	15	7	20	13
Atlanta	8	5	14	4	31	13	5
Phoenix	9	3	21	22	21	24	35
New York	10	37	4	14	3	3	9
Philadelphia	11	27	32	36	25	35	20
San Diego	12	25	7	5	6	18	14
Denver	13	8	17	10	29	14	7
Austin	14	1	8	3	19	10	4
Houston	15	7	18	21	8	30	12

# AGENDA

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## **A Tour de Force of commercialisation**

### **1. Innovation commercialisation**

Introduction to entrepreneurship and innovation concepts relating to commercialisation, such as sources of innovation, creating value through commercialisation, and commercialisation strategy

### **2. Building the case: Business Model & Business Plan**

Introduction to building the business case; aspects of business models including value creation and capture, and developing business plans including providing evidence.

# Business/Value Model

... “how value is to be created + captured.” (Bessant and Tidd, 2011)

Business/value Models have 4 core elements:

## 1. Value Proposition:

- **Offering:** How does the innovation or venture create value and for whom?
- Value created will be specific to target market segments and customer groups
- Different types of innovation will contribute in different ways (e.g. product versus process)

## 2. Revenue Generation:

- How does the enterprise capture and appropriate the benefits (rents): subscription model, renting, selling, etc.
- What is the underlying cost structure and scalability?

## 3. Capabilities and processes:

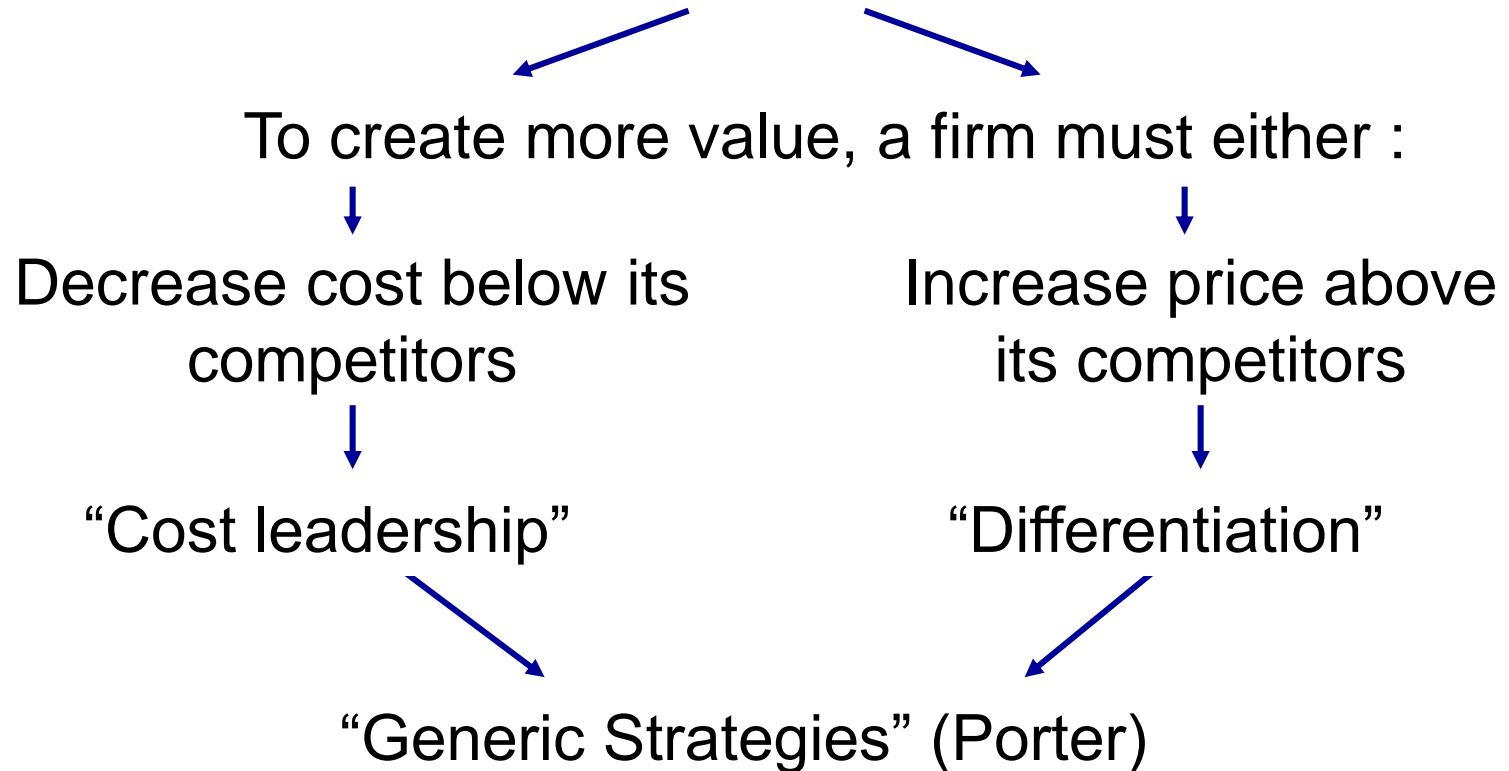
- How can the innovation or venture deliver?: requires unique combination/configuration of resources, knowledge, and capabilities

## 4. Position in the network:

- How are risks, responsibilities and rewards distributed between suppliers, customers, and other collaborators/business partners involved in the value creation.
- **Creating** versus **capturing** value
- Distribution driven by: positional advantages (e.g. size, power, owner ship of IP, brands or standards, and access to distribution channels and customers)

# How to create value?

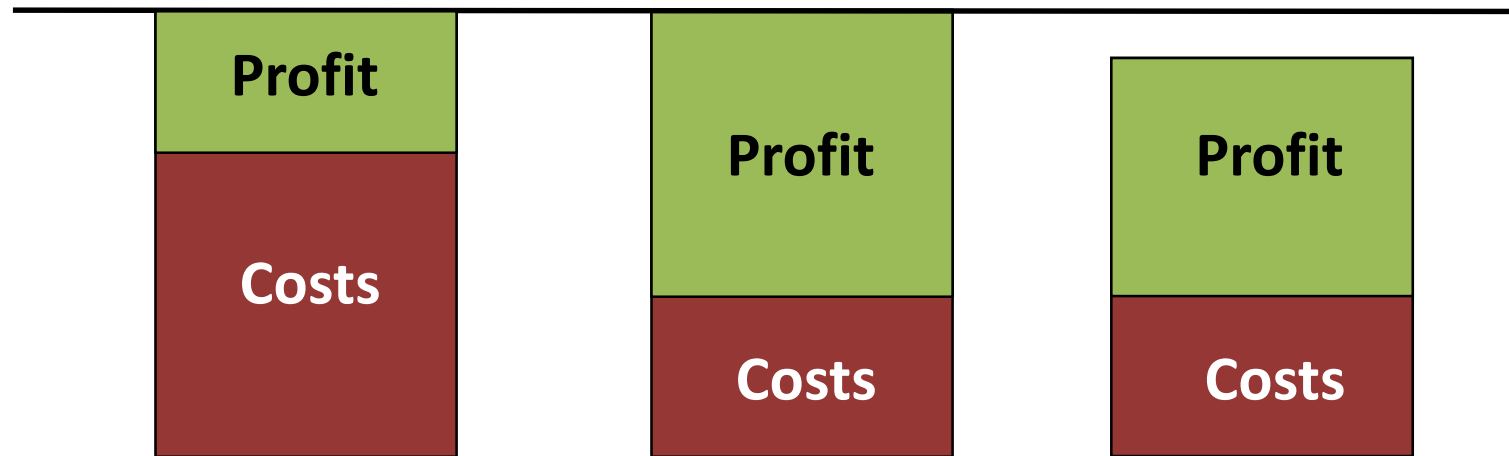
**Added-value = market price – input cost**



# Cost leadership

Firms that offer a product or service that is of **'standard'/comparative quality**, but **costs are significantly lower** than the industry average/competition → they create value and earn superior profits

Price



Average player/  
Competition

Cost leader  
(with parity)

Cost leader  
(with proximity)

# Cost leadership

Gaining advantage by driving down costs while maintaining average quality can be **achieved by**:

- Increasing the scale of your operation (high volume) to take advantage of **economies of scale**
- Moving down the **experience curve** faster than your competitors
- Reduce input costs (e.g. labor or raw materials)
- Product/process design



**Process innovation** to lower costs

# Case Example: Low-Cost Airlines

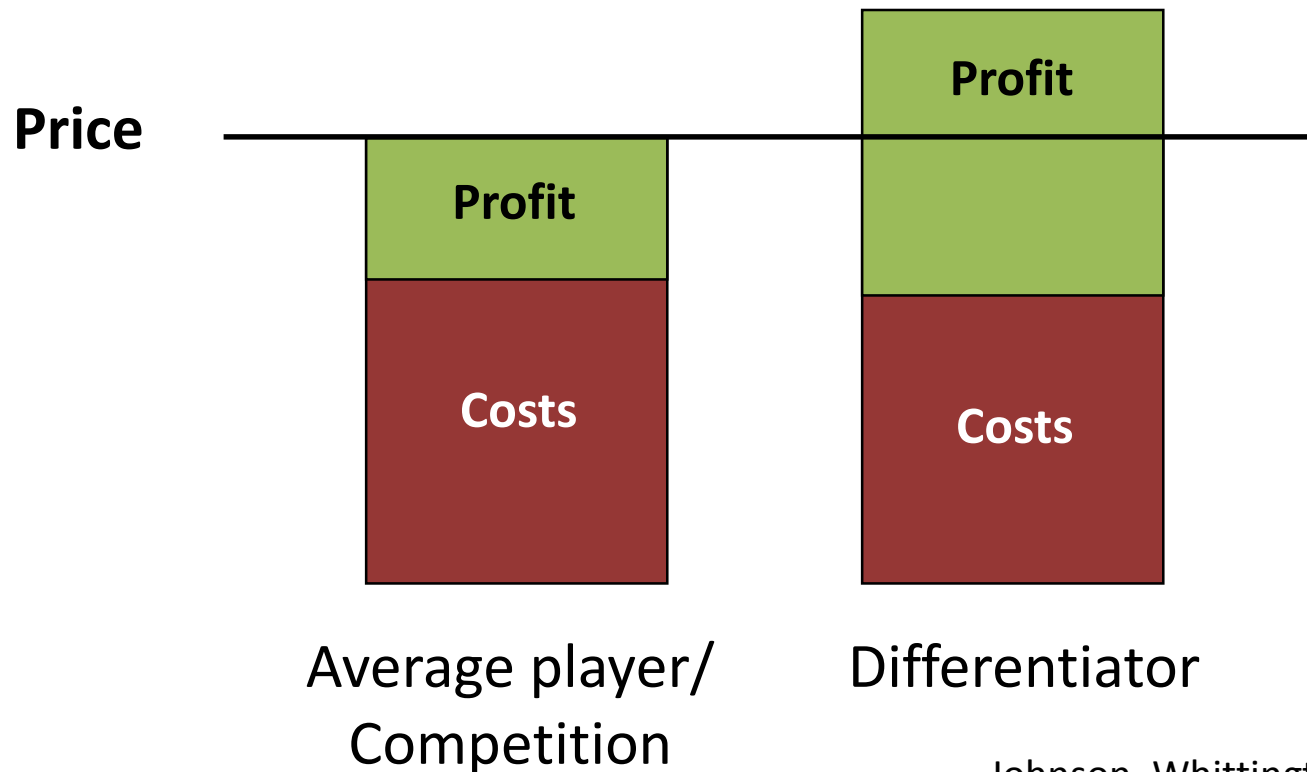
## Achieving cost leadership:

- Fast turnaround times at airports, which increases plane utilisation and punctuality
- Use of a common fleet of planes to reduce pilot and maintenance costs
- Automation of bookings, and ticketless booking, to reduce overhead costs
- Outsourcing or contracting out of non-core services, e.g. baggage handling
- Use of cheaper secondary airports to reduce overhead costs



# Differentiation

Firms that offer a product or service that is unique in ways that customers value + firm costs are under control → charge premium prices, create more value, and have higher profitability



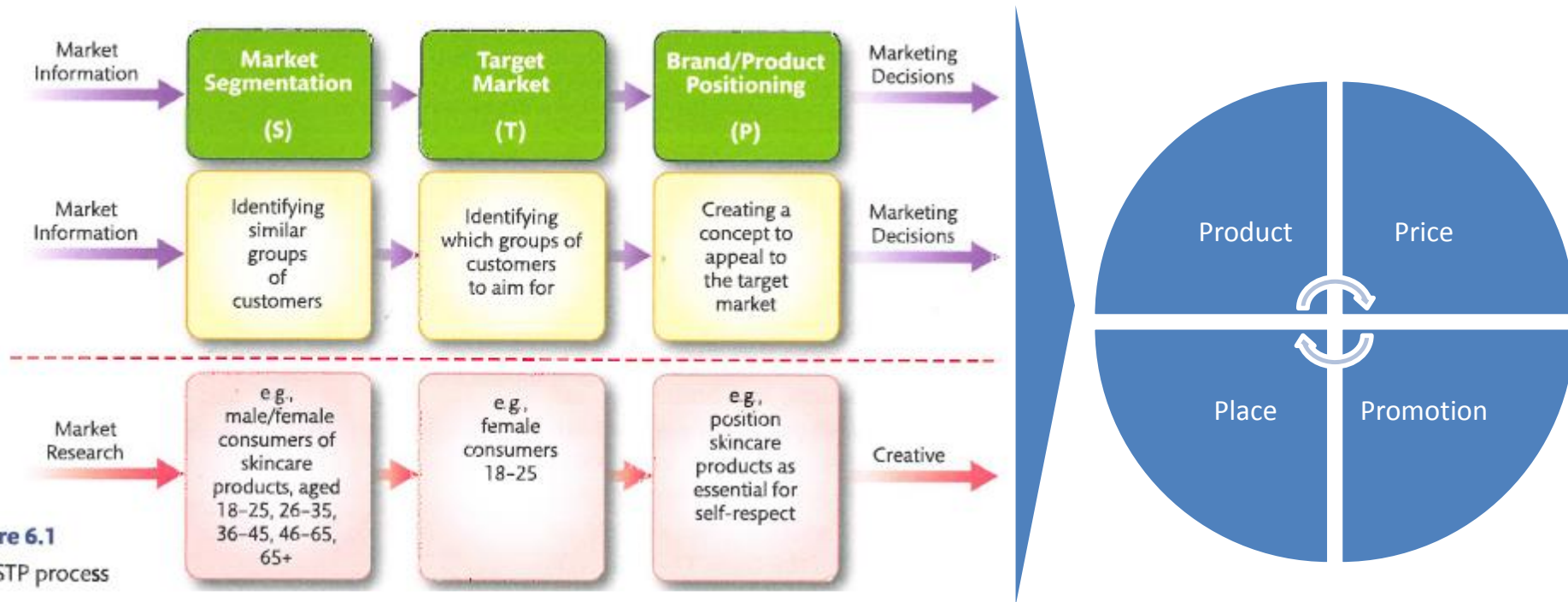


# Differentiation

- Can be based on **innovative product or service delivery**
- Can result in:
  - high customer loyalty and less head-to-head rivalry → higher prices
- Need to understand:
  - who the customer is
  - what is valued by the customer
  - who the competitors are and the value they offer
- Perceptual Maps
- But, be careful to:
  - **monitor the costs of differentiating** – to capture more value than competitors, the cost base need to be similar
  - choose bases of differentiation which are **difficult to imitate**
  - recognise that **bases of differentiation may need to change**

# Focus

## Segmentation, Targeting and Positioning & the 4Ps of Marketing



**Figure 6.1**  
 The STP process

# “Stuck in the middle”

“A firm “stuck in the middle”...“will compete at a disadvantage because the cost leader, differentiators, or focuser will be better positioned to compete in any segment... Such a firm will be much less profitable than rivals achieving one of the generic strategies”

Porter (1985)

In other words ... if you are in the middle you will be outcompeted by firms on the other ends

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## 3. Capabilities and Processes

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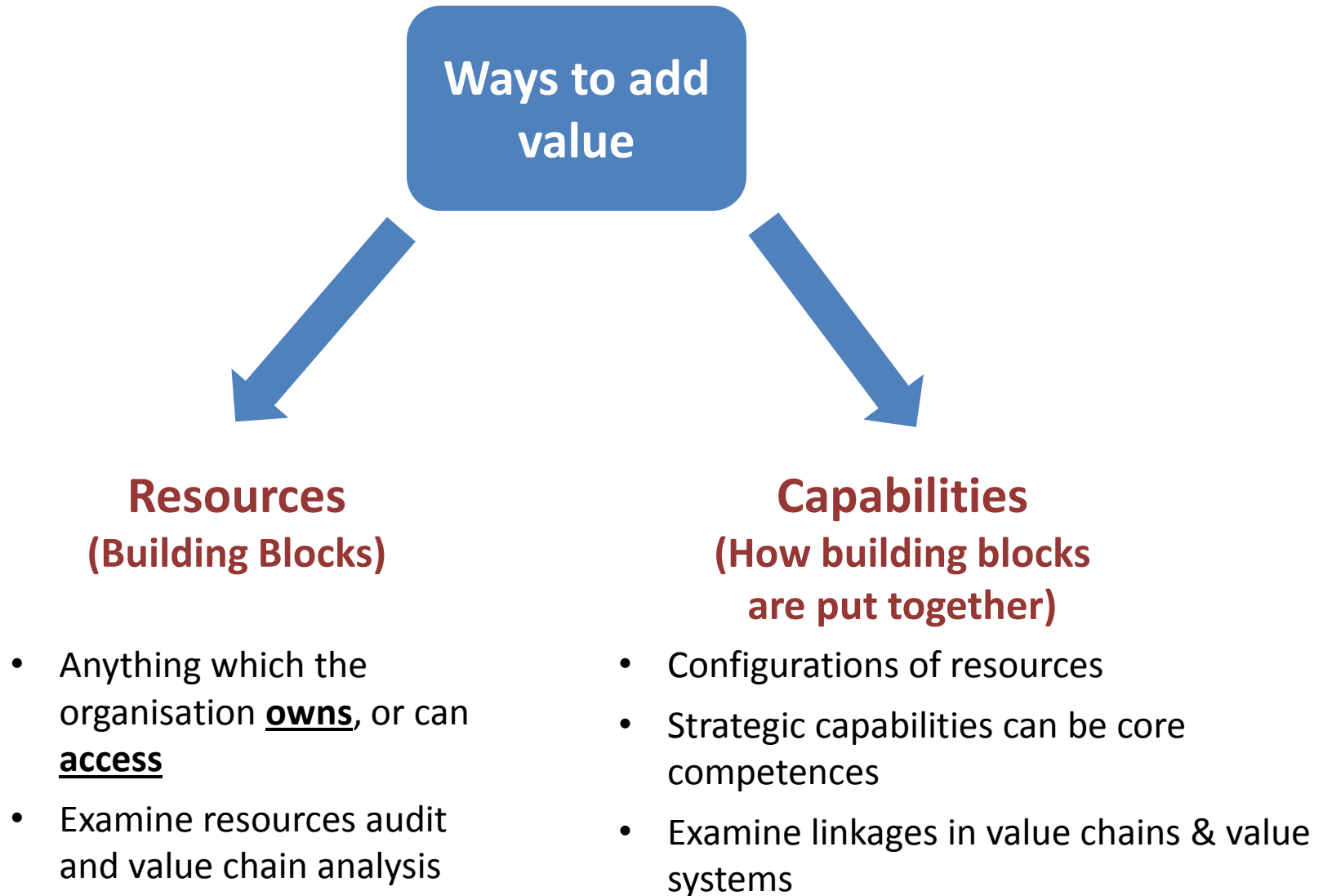
“Resources are inputs into the production process – they are basic units of analysis. ... But on their own, few resources are productive. Productive activity requires co-operation and co-ordination of teams of resources. A capability is the capacity for a team of resources to perform some task or activity.

While resources are the source of a firm’s capabilities, capabilities are the main source of its competitive advantage.”

**Grant (1998)**

## 3. Capabilities and Processes

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# Business/Value Model

... “how value is to be created + captured.” (Bessant and Tidd, 2011)

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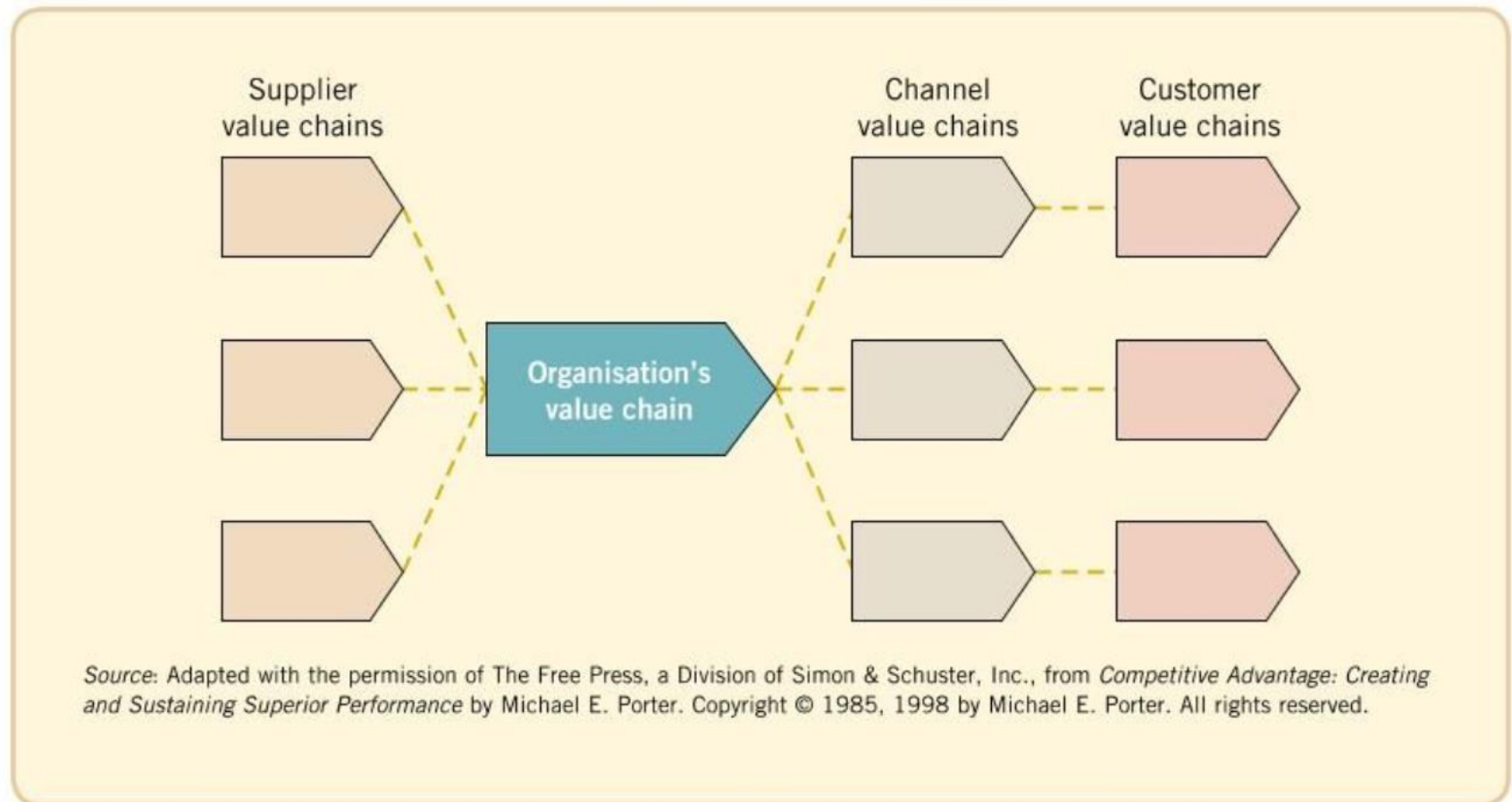
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## 4. Position in the network

Figure 3.5 The value system



# Business Model Innovation

**Many successful innovations do not stem from new science or technology, but new and unique combinations of the business model elements.**

Business model innovation enlarges the existing value of a market by either:

- Attracting new customers
- Encouraging existing customers to consume more
- **Does not require the discovery of new products or services**, but rather the redefinition of existing products or services and how these are used to create value (emphasizes different value proposition):
  - Amazon (did not invent book selling)
  - EasyJet or Ryanair (did not pioneer air travel)
  - Netflix (did not pioneer movie rental)
  - Apple (did not invent the mp3 player)
  - Dell (did not invent PCs)
- New business models can co-exist with existing business models

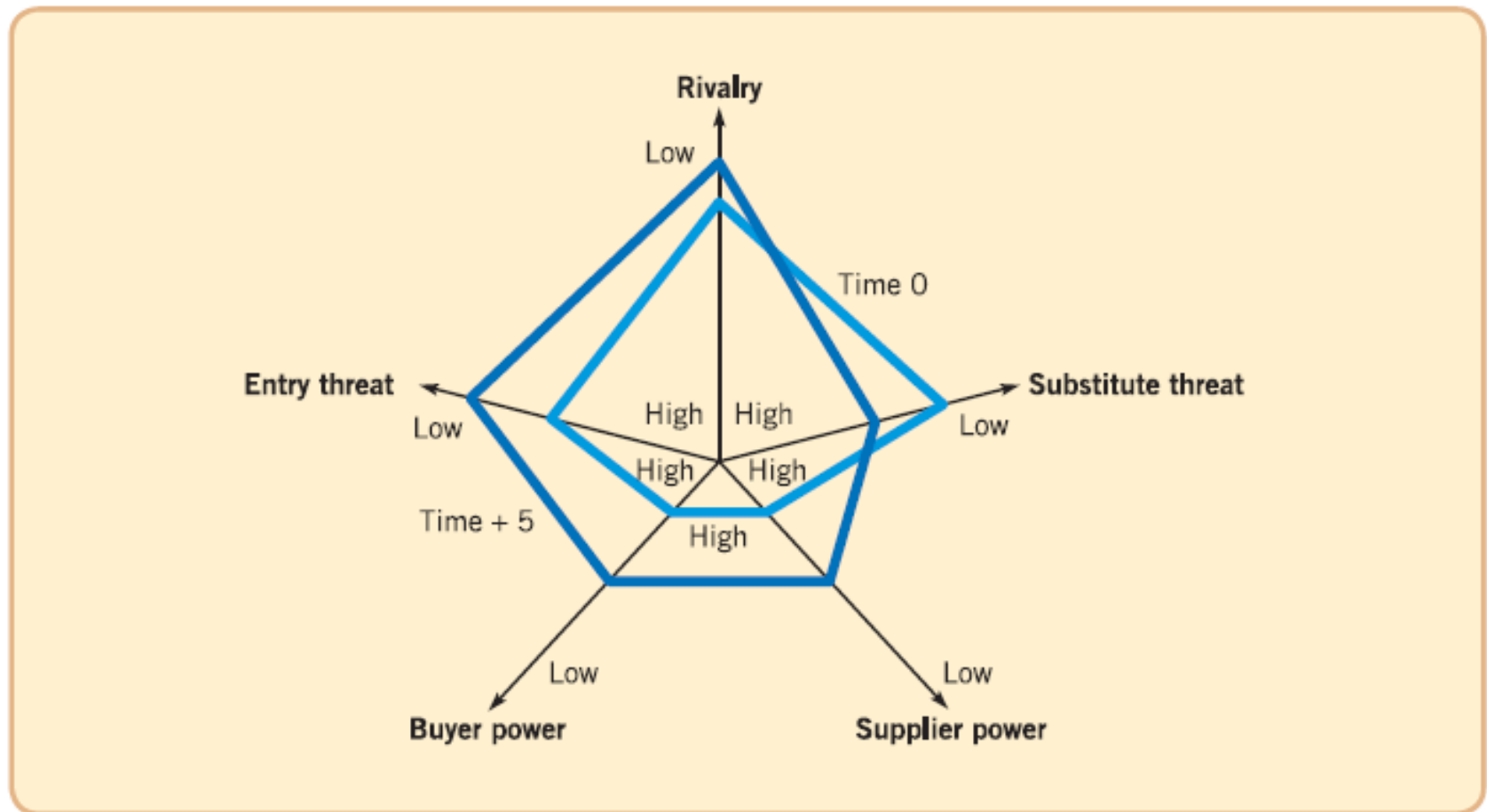
# So far: Traditional Approaches to Value Creation

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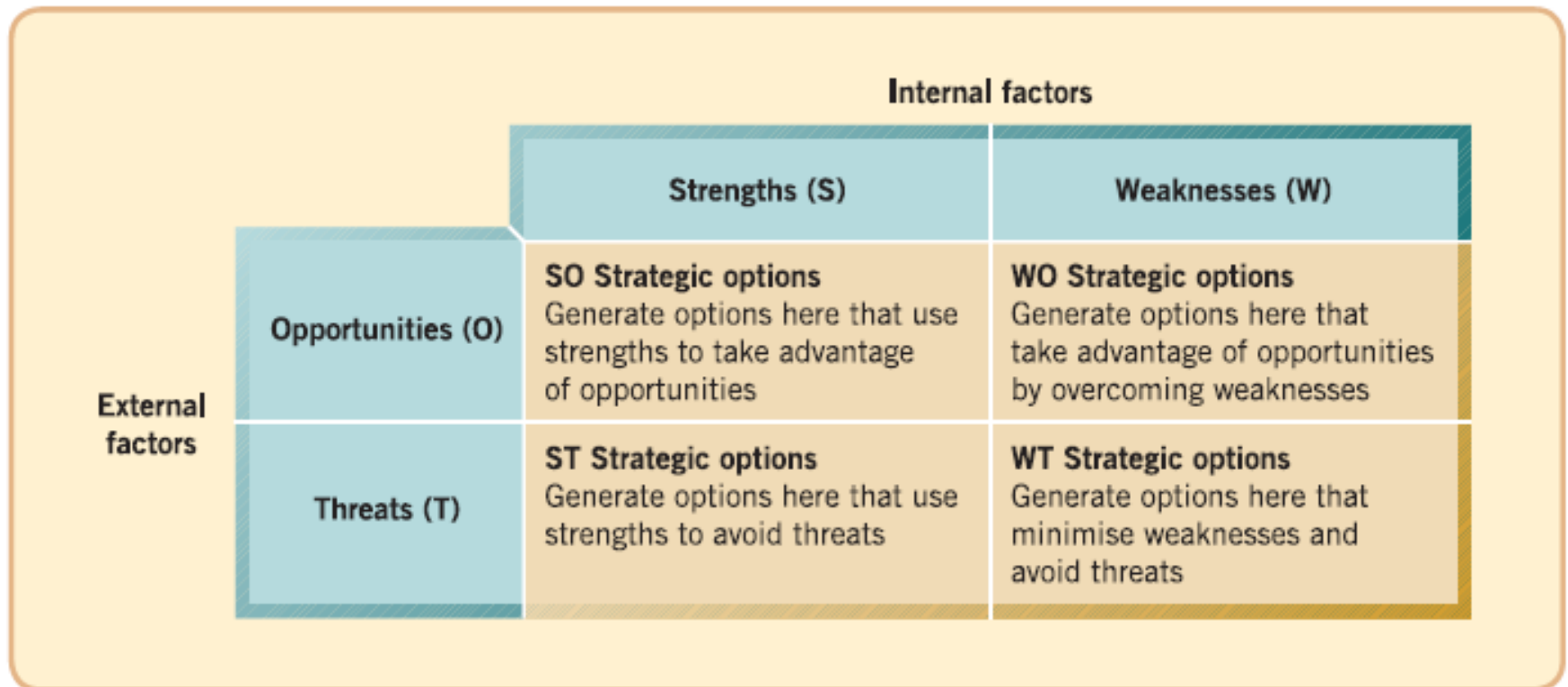
- Creating value through **positioning**: carve out defensible position against competition in the existing market space:
  - Based on market attractiveness (**Five Forces, PESTL framework**)
  - Analysing structure of an Industry → Choosing a strategic position (cost leadership, differentiation, focus)
  - Opportunities and threats in the **external** environment
- Creating value through **capabilities**
  - The resource-based view (**VRIO, Value Chain/Network**)
  - Based on developing strategic assets
  - Strengths and weaknesses **internal** to the venture
- ... usually summarised through a SWOT analysis

# So far: Traditional Approaches to Value Creation

Figure 2.7 Comparative industry structure analysis



# So far: Traditional Approaches to Value Creation



# Red and Blue Oceans

## Red Ocean Strategy

Compete in existing market space for greater market share  
Beat the Competition  
Make the value/cost trade-off  
Align the whole system of a company's activities with differentiation OR low cost


## Blue Ocean Strategy

Create uncontested market space  
Make the competition irrelevant  
Break the value/cost trade-off  
Align the whole system of a company's activities in pursuit of differentiation AND low cost

# Business Plans

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## Business Plans:

- Attract funding for a venture
  - Translate abstract or ambiguous goals into more explicit operational needs, and support subsequent decision-making and identify trade-offs
  - Make risks and opportunities more explicit: Technology, Market, Competition, etc.
- 

Think through + articulate your business idea/model in a **systematic way**

- Communicate Business idea externally
- Understand Business idea “internally”

# Business Plans

## Elements of a Business Plan:

1. Details of the **product or service**: *Value Creation/Resources (IP)*
2. Assessment of the **market opportunity**: *Value Creation/Capture*
3. Identification of **target customers** (STP): *Value Creation*
4. Barriers to entry and **competitor analysis**: *Value Creation*
5. Experience, expertise and commitment of the **management team**:  
*Resources*
6. Strategy for **pricing, distribution and sales**: *Value Capture/Position*
7. Identification and planning for **key risks**
8. Cash-flow calculation, including **break-even** points and **sensitivity**:  
*Value Capture*
9. Financial and other resource **requirements** of the business (Gap analysis): *Resources*



**TABLE 7.1** Criteria used by venture capitalists to assess proposals

Criteria	European (n = 195)	American (n = 100)	Asian (n = 53)
Entrepreneur able to evaluate and react to risk	3.6	3.3	3.5
Entrepreneur capable of sustained effort	3.6	3.6	3.7
Entrepreneur familiar with the market	3.5	3.6	3.6
Entrepreneur demonstrated leadership ability*	3.2	3.4	3.0
Entrepreneur has relevant track record*	3.0	3.2	2.9
Product prototype exists and functions*	3.0	2.4	2.9
Product demonstrated market acceptance*	2.9	2.5	2.8
Product proprietary or can be protected*	2.7	3.1	2.6
Product is 'high technology'*	1.5	2.3	1.4
Target market has high growth rate*	3.0	3.3	3.2
Venture will stimulate an existing market	2.4	2.4	2.5
Little threat of competition within 3 years	2.2	2.4	2.4
Venture will create a new market*	1.8	1.8	2.2
Financial return > 10 times within 10 years*	2.9	3.4	2.9
Investment is easily made liquid* (e.g. made public or acquired)	2.7	3.2	2.7
Financial return > 10 times within 5 years*	2.1	2.3	2.1

# Evaluation Criteria

## Entrepreneur

Evidence on evaluation criteria used by venture capitalists in Europe, the US and Asia

## Offering + IP

## Market

## Financial/ROI

1 = irrelevant, 2 = desirable, 3 = important, 4 = essential. \* Denotes significant at the 0.05 level.

Source: Adapted from Knight, R. (1992) Criteria used by venture capitalists. In T. Khalil and B. Bayraktar, eds, *Management of Technology III: The Key to Global Competitiveness* (pp. 574–583), Industrial Engineering & Management Press, Georgia.

# Business Plans

---

## Common problems with Business Plans submitted to VCs:

- Too much emphasis on technology relative to other issues

### ➤ Lack of:

- detailed marketing strategy
- sales plan
- competitor analysis
- Financial forecasts and sensitivity analysis

} Commercial  
aspects

# Business Plans

## Common problems with Business Plans submitted to VCs:

- 30-45% of all project fail to be completed
- > 50% overrun budgets or schedules by up to 200%
- **Managers** cannot predict accurately the development cost, time periods, markets and profits of R&D projects
- **R&D scientist and engineers** are often overoptimistic in their estimates
- **Important biases:**
  - **Overconfidence:** unrealistic assumptions and uncritical assessment
  - **Cognitive bias:** seeking and overemphasizing evidence which supports our beliefs and reinforces our bias, but at the same time leads us to avoid and undervalue any information which contradicts our view
  - **Loss aversion:** we tend to prefer to avoid loss rather than to risk gain

# Why Business Plans Don't Deliver

## Five most common flaws and how to fix them:

### 1. “Here I am, never mind the problem” (3D printing?)

- Plan focuses on a detailed explanation of the **technology** rather than the identification of a **customer problem** to resolve
- What matters more than great technology is the **problem or pain that the technology is resolving**
- A good business plan starts with a clearly defined problem supported by evidence from market research, testimonials, letters of intent (target market).

### 2. “A coke for every kid in China”

- **Secondary data** (market size and growth) → opportunity
- **Primary data** (interviews, surveys, experiments, market tests) → adoption

### 3. “Just look at our (paper) profits”

- large number of small transaction versus small number of large transactions?
- product development + operation costs?
- Allow for **sensitivity analysis** (alter assumptions)

# Why Business Plans Don't Deliver

Five most common flaws and how to fix them:

## 4. “Our team walks on water”

- Identify critical success factors and show how team expertise and experience address those
- Acknowledge missing links + encourage potential investors to help fill that slot with a qualified person
- Importance of previous venture experience (successful or unsuccessful)

## 5. “Everything is wonderful”

- Identify uncertainties and risks + address them in the plan → develop contingency plans
- Known risks versus unknown risks

## Customer Value Proposition (CVP)

- **Target customer**
- **Job to be done** to solve an important problem or fulfill an important need for the target customer
- **Offering**, which satisfies the problem or fulfills the need. This is defined not only by what is sold but also by how it's sold.

## PROFIT FORMULA

- **Revenue model** How much money can be made: price x volume. Volume can be thought of in terms of market size, purchase frequency, ancillary sales, etc.
- **Cost structure** How costs are allocated: includes cost of key assets, direct costs, indirect costs, economies of scale.
- **Margin model** How much each transaction should net to achieve desired profit levels.
- **Resource velocity** How quickly resources need to be used to support target volume. Includes lead times, throughput, inventory turns, asset utilization, and so on.

## KEY RESOURCES

needed to deliver the customer value proposition profitably. Might include:

- **People**
- **Technology, products**
- **Equipment**
- **Information**
- **Channels**
- **Partnerships, alliances**
- **Brand**

**KEY PROCESSES**, as well as rules, metrics, and norms, that make the profitable delivery of the customer value proposition repeatable and scalable. Might include:

- **Processes:** design, product development, sourcing, manufacturing, marketing, hiring and training, IT
- **Rules and metrics:** margin requirements for investment, credit terms, lead times, supplier terms
- **Norms:** opportunity size needed for investment, approach to customers and channels

# Evaluation Criteria

Business Model: four key elements:

1. Customer value proposition
2. Profit formula
3. Key resources
4. Key processes

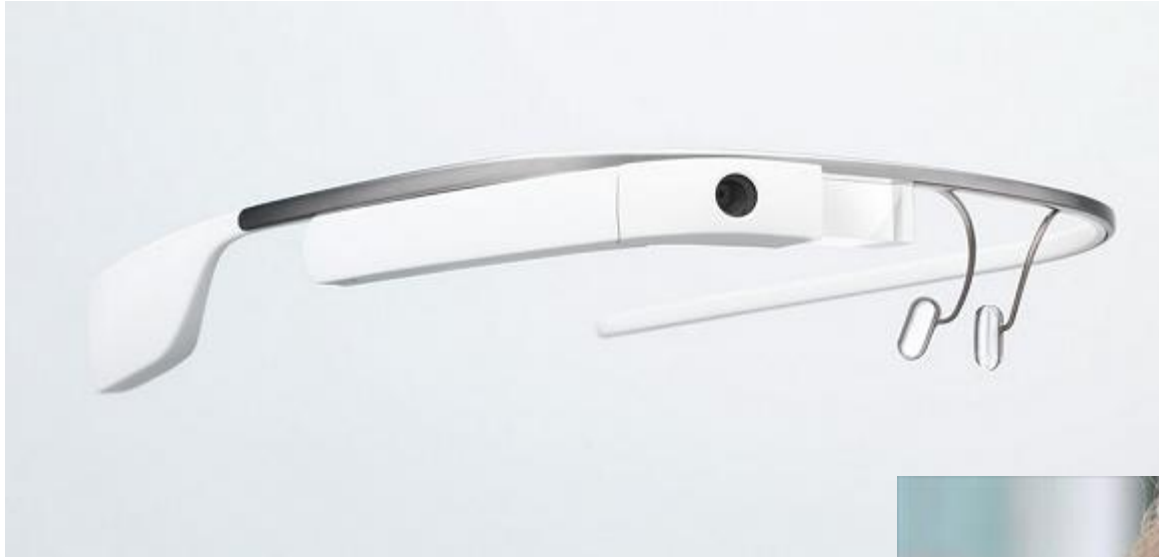
# 1. Customer Value Proposition

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## Finding a way to help customers get a job done

- **Create value** for customer
- Who is the target customer?
- What is the job to be done?
- What and how does your offering help get the job done?
- (What are the other alternatives?)
- (How can you “sell” your solution to customers?)
- (What might be the barriers to adoption?)

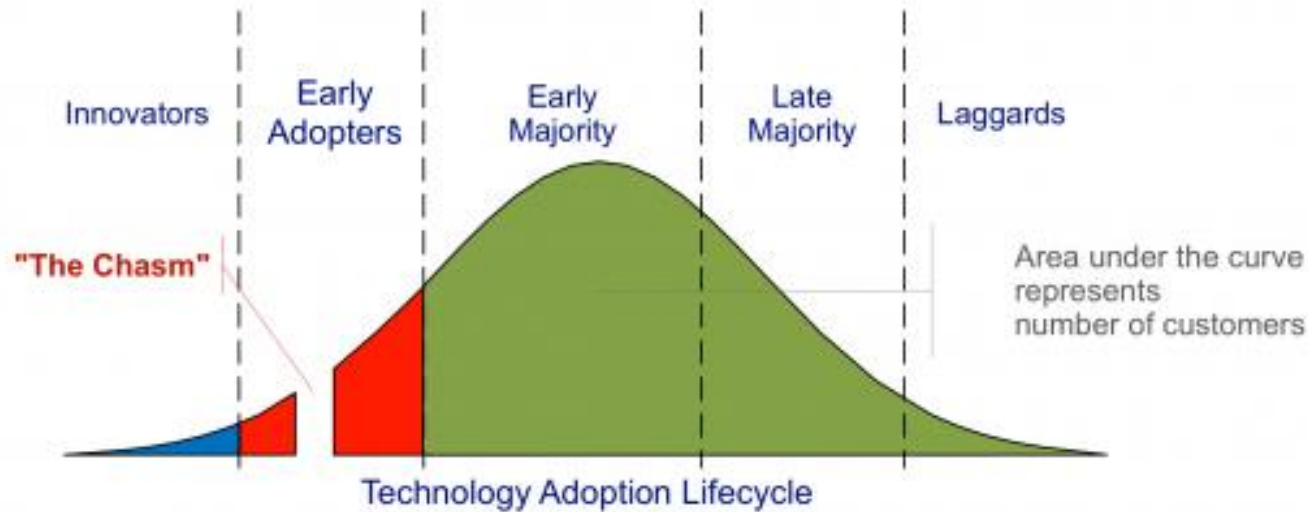
# 1. Customer Value Proposition



Do you think this product will take off? Why or why not?



# Factors affecting innovation adoption



Difference in success factors:

Emphasise technical performance and novelty

Emphasise price, quality, convenience and support

Short term preferences of early adopters will have a disproportionate impact on subsequent development of the innovation → abandonment of superior alternatives

## 2. Profit Formula

---

How can the company create value for itself, while providing value to the customer?

➤ Capture value

1. Revenue model (sales)

2. Cost structure

- Variable costs + fixed costs, economies of scale → low/high volume

3. Margin model

- low margin/large volume *versus* high margin/low volume → profits

4. Resource velocity (speed at which resources flow through)

- inventory turnover speed, revenue cycles

# Alternative revenue models

Revenue model explanations:		Examples*
<b>Commission-based</b>	A fee that is imposed on a transaction by a third party (usually an intermediary)	Inst-cash International Unibarter.com
<b>Fee-for-service</b>	Pay as you go option, charged for professional service as you use it	Metalogics, Inc. Flash Gordon
<b>Advertising</b>	Business of attracting public attention to a good or service, achieved through banner ads, pop ups, permanent buttons, etc.	RealTraveling.com Fidget
<b>Subscription</b>	Company charges a flat rate to use a service for a certain period of time	Tendersys.com Homesmart.com
<b>Referral</b>	Fees for steering customers to another company—can either be a flat fee or a fee per click-through.	E-sitting Insureconnection
<b>Production</b>	Manufacturer sells directly over the Internet, cuts out middleman	Games Interactive 100x.com
<b>Mark-up based</b>	The middleman, business not in production but in resale	RealLegends.com Smartenergy
<b>Other</b>	Either not enough information to classify, or the revenue model was outside the scheme of an Internet business	Avatar Project

## Examples?:

- Mobile Phone?
- Netflix?
- Estate Agents?
- Youtube?
- Google?
- Facebook?

## 3. and 4. Key resources and processes

### Resources

#### Required to deliver the value

proposition to the target customer:

- People
- Technology, products
- Equipment
- Information
- Channels
- Partnerships, alliances
- Brand

### Processes

Operational and managerial processes that allow delivering value **in a way that can be successfully repeated and increase in scale:**

- Processes
  - Training, development, manufacturing, budgeting, planning, sales, and service
- Rules and metrics
- Norms
- ... capabilities

- Evaluate resources and processes using the **VRIO criteria**
- Not as much about the individual resources and processes, but the unique **configuration** of resources and capabilities

# Summary Business Models

- “Successful new businesses typically revise their business models four times or so on the road to profitability”
  - Requires learning and adjusting
- “Success comes from enveloping the new technology in an appropriate, powerful business model”
  - Importance of all 4 key elements working together

“I think historically where we [venture capitalists] fail is when we back technology. Where we succeed is when we back new business models”

Bob Higgins (Highland Capital partners)

**GOOD LUCK...**

...with your idea and your life as an  
entrepreneur!