

(Tushman & Abernathy, 1986)

Broken down:

- ✚ A technological discontinuity is where a technology breaks with existing designs.
 - E.g. The typewriter was a change to having a small, portable machine with keys.
- ✚ An era of ferment follows where different designs compete for dominance.
 - E.g. The fight between the QWERTY keyboard layout with the 'ideal' layout.
 - Between the VCR and VHS
- ✚ The competition is ended by the emergence of a dominant design.
 - We still use the QWERTY keyboard layout today...
 - VHS became the standard size
- ✚ Incremental innovation elaborates and improves the dominant design until the next technological discontinuity.
 - Dominant designs are seldom revisited however such as the steering wheel in cars as opposed to Ford's original tiller design
 - Interestingly Abernathy along with Utterback (1978) went on to argue that the majority of innovation is incremental in nature offering the following examples in *Patterns of industrial innovation* (Technology Review).
 - E.g. the Model T engine followed 5 developments on different engines and therefore was nothing really new.
 - E.g. Samuel Hollander showed that more than half of the reduction in costs that developed in producing Rayon at E.E du Pont was the result of gradual process improvements that could not be identified as formal projects or changes.

The technology is useful because it lets us identify where any product is within this cycle and then make judgements based on this. For example, if a technology is in the era of ferment it would perhaps be worth holding off investing in or creating complements until the dominant design becomes evident (although that said often the dominant design arises because it has the greatest compatibility and number of complements; such as the VHS).

Mapping technological progress with logistic curves:

In addition to the technological cycle mapping the various stages within the development of a particular technological design we can also model the relationship between technical performance and cumulative investment over time. This takes the shape generally of a logistic curve (S-curve) with various points notable on the curve including; introduction, take-off point (if it's a technology worth producing), maturity and as the technology is approaching its limits. As an interesting side-point, this relationship also holds often with marketing of a product too.

The social shaping of technology

There are a serious number of arguments to suggest that consumers and end users actually have more of an impact on the development of technology than the designers and manufactures. However, regardless of whether this is true or not, it is undeniable that consumers do have an impact on technological innovation.

For example, sociotechnical systems theory from Emery and Trist is a non-deterministic theory that arose from their studies of longwall mining among other occupations which suggests that it is the interaction of social and technical systems that creates organisational performance. Thus optimising each separately leads to suboptimal performance whereas join optimisation leads to best performance. This suggests that we need to understand informal groups as well to understand how people will react to a certain technology. Moreover, companies are unable to completely specify how users will interact with technology, or indeed they might not necessarily know how users will interact. For example, apparently Apple released the iPad with no real idea of what people would use it for or which market it would fall into/create.

Bijker (1995) suggests that:

- ✚ “Technical artefacts do not exist without the social interactions within and among social groups.”
- ✚ “The design details of artefacts are described by focusing on the problems and solutions that those relevant social groups have with respect to the artefact.”
- ✚ The social constructivist approach is based on interpretive flexibility where ‘for different social groups the artefact presents itself as essentially different artefacts’.

Finally, there are arguments that technology is not actually value-neutral but rather technology embodies what a society thinks is acceptable and therefore is value-laden, however there are still many who worry that advanced technology will lead to dystopia rather than utopia.

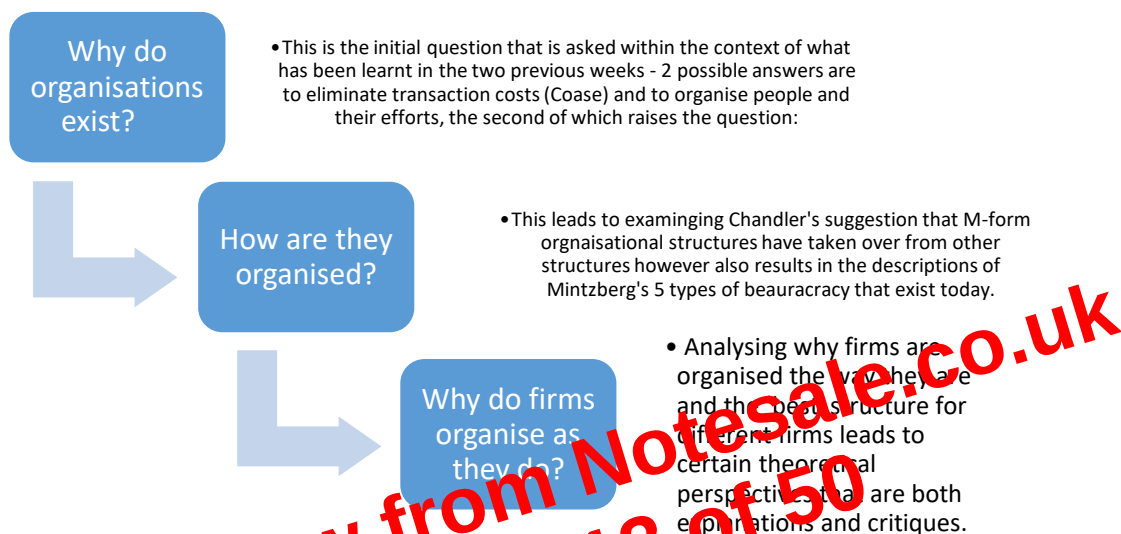
Betamax vs VHS (Rosenbloom & Cusumano, 1987):

- Early home video cassettes
- Betamax: better image quality but
 - Priced higher
 - Failed to take into account professional vs home users
 - Betamax could only record an hour's worth, consumers wanted longer recordings
- VHS won

Exoskeletons (Economist, 2015):

- Development of different models of exoskeletons
- Radical innovation / disruptive technology: creation of first practical exoskeleton
- Era of ferment: different models being created

Week 4: Evolution: From Organisations to Organising



Pugh and Hickson (2007):

- Organisations are situated in an environment. Their structure determines how successful they are in that environment.
- Evolution and strategy determine structure in an environment.
- Open system firms means firms achieve goals despite uncertainty.
- Resource based firms mould their structure to the environment.

Morgan (2006):

- Effective managers have to become skilled at “reading” the situation they are attempting to manage.
- Good managers remain flexible during challenging situations until a more comprehensible situation arises.
- Examines the image of organisations as machines and illustrates how this style of thought underpins the development of organisation.
- When managers imagine their organisations as machines they see them as being made up of interlocking parts that each play a clear role in the functioning of the firm.
- This technocratic scope can prove beneficial but it depends on the type of organisation and environment. Sometimes a more organic structure will make an organisation more effective.

- But OE on itself is insufficient:
 - OE competition results in no relative improvement, hard to achieve superior profitability, no real advantage
 - Strategies eventually converge and become generic

Organizations must have:

- Operational effectiveness: performing activities better than rivals
- Strategic positioning:
 - “Choosing to perform activities differently or to perform different activities than rivals”
 - New strategic positions arise from industry changes
 - Variety-based positioning: producing a distinct subset of products in industry
 - Needs-based positioning: serve most of the needs of a particular customer segment / target specific segment of customers
 - Ikea
 - Access-based positioning
- Sustainable strategic position has trade-offs:
 - “Purposefully limits what company offers”
 - Choosing what not to do and making sure strategy is not completely imitable (positions too good will be quickly copied)
- All about “fit” of strategies: consistency, re-enforcement, optimization

EX: Southwest Airlines (performs activities differently)

- Short haul flights
- Low cost
- Point-to-point service between small cities and secondary airports for large cities
- Targets “price and convenience-sensitive traveller”
- Low fares and frequent departures sets it apart from other airlines
- Managed to break into the airline industry which has extremely high barriers

EX: Ikea (performs activities differently)

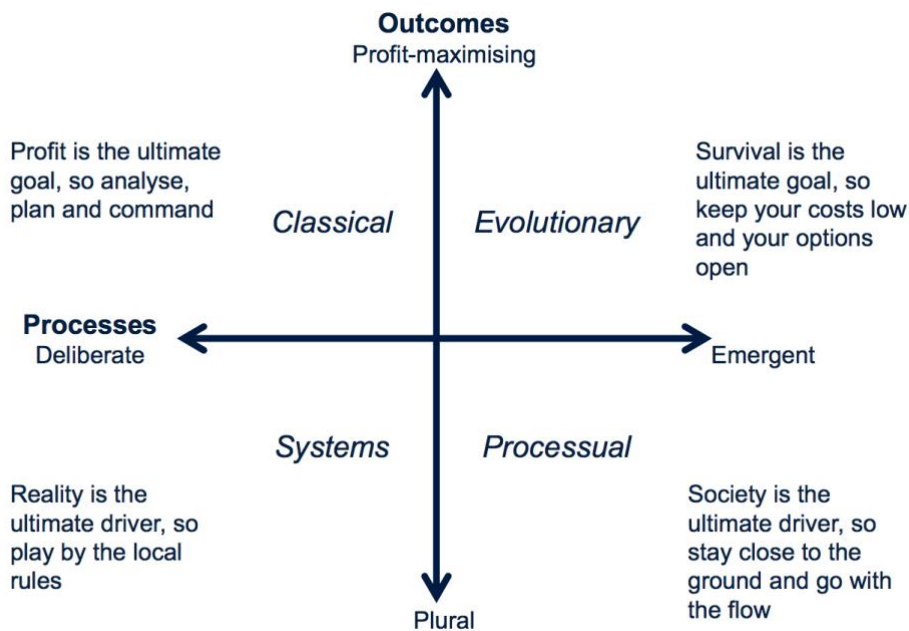
- Targets younger audience of “not wealthy”
- Trades off service for cost
- Self-service model, small number of employees in store, customers perform own pickup and delivery, entire DIY model
- Extra services: in-store child care, extended hours
 - Services are “uniquely aligned with the needs of its customers” (customers work for a living so shop at odd hours, likely to have children)

Pisano et al, 1997, dynamic capabilities

Dynamic capabilities:

- Ability to redefine and develop core competencies in order to adapt to changing market
- Not imitable, but should be replicable
- Too much strategizing leads to under-investment in core competencies and ignorance of dynamic capabilities, which decreases long run advantages

Whittington, 2001, 4 views on strategy



- “Profitability is the supreme goal of business”, “commitment to profit maximization”
- “Strategic aim of a business is to earn a return on capital, and if... return in the long run is not satisfactory, the deficiency should be corrected or the activity abandoned” (Sloan, 1963)
- Top-down, rational and planned strategy
- Derives from military practices (Ansoff, 1965): rigid hierarchy with top generals / managers at the top
- Top management: analyze, plan and command
- Workers: exercises activities with perfect rationality
- Criticism: not pragmatic to assume this rationality / prudence in management (Mintzberg, 1990)

Evolutionary:

- “Evolution is nature’s cost-benefit analysis”, markets secure profit maximization as only best performers survive
- Better performers “survive and flourish”
- Weaker performers are “squeezed out of the ecological niche”
- When new niche opens up → “flooded by new entrants” → overpopulation leads to fierce competition that means survival of the fittest
- Believes that there is limited capacity for long-term strategy to be successful as markets are too unpredictable and uncontrollable
- 2 strategies:
 - Differentiation:
 - “Differentiate or die”
 - Gain oligopolistic power / makes them “well buffered against competitive pressures” (Penrose 1952)
 - Experiment with “as many different small initiatives as possible” to maximize chances of success:
 - “Build successes while ruthlessly eliminating the failures”
 - EX: Sony in 1980s launched 160 different versions of the Walkman, only 20 versions survived (Sanchez & Sudharshan 1992)

maturity (little egoism), and a democratic, coaching managerial style. This allows managers to control their subordinates and influence others without having to resort to coercion or to an authoritarian management style.

Foucault (1975):

- The chief functioning of disciplinary power is to train.
- The success of disciplinary power depends on hierarchical observation, normalising judgement, and examination.
- Power does not exclude or repress. Instead, it creates the reality and rituals of truth
- Foucault's negative conception of individuality is important. Advertising and the mass media tend to praise people seen as "individuals," but for Foucault the individual is a harmful device constructed by power. The more abnormal and excluded you are, the more individual you become. Individuality is the mark of the mental patient and the convict. It has nothing to do with taking control over one's own life. To free the excluded and allow them to speak, we need either to make them anonymous, or to expose the structures that separate them from "normal" society.

Machiavelli (1961):

- "All courses of action are risky, so prudence is not in avoiding danger (it's impossible), but calculating risk and acting decisively."
- "It must be considered that there is nothing more difficult to carry out, nor more doubtful of success, nor more dangerous to handle, than to initiate a new order of things."
- "Where the willingness is great, the difficulties cannot be great."
- "There is no other way to guard yourself against flattery than by making men understand that telling you the truth will not offend you."
- "Need not necessarily have all the good qualities I mentioned above, but he should certainly appear to have them".
- "A prince should also show his esteem for talent, actively encouraging able men, and honouring those who excel in their profession"
- "... should have a flexible disposition, varying as fortunes and circumstances dictate."

Berthon et al (2007):

- When General Motors Corp. tried to revive its Daewoo car division in the United Kingdom early in 2005 by rebranding it with the Chevrolet badge, it ran into big trouble. Car buyers had difficulty linking the iconic American brand — immortalized in countless movies, celebrated in numerous songs and enjoying more than 90% brand awareness — with the low-priced Korean autos.
- In another instance, marketers at Nestlé S.A.'s British operations chose to capitalize on the brand equity of a much-loved confection, the historic KitKat bar. In a bid to boost lacklustre sales in 2003, the marketers launched brand extensions in multiple flavours such as Blood Orange, Lime Crush and Christmas Pudding. Although there was temporary interest in the new launches, the experiment failed spectacularly. KitKat's overall U.K. sales fell by 18% in the two years prior to April 2006. has since dropped almost all of the unusual flavours.
- Managers often fail to grasp that perceptions of brands change dramatically over different regions and especially over time.
- Companies can do little to manage a stable brand image, but can negotiate an evolving one.
- Brands are often ends in themselves in the eyes of managers, but this overlooks their purpose in reality just as a marketing tool.

Arnould (2007):

- The whole anti-consumption movement is anachronistic and a class based action and not that much to do with consumerism.
- Escape from consumerism is just a romantic idea, the utopian dream if you will.
- However, upon analysis of parts of Africa set apart from the forces of globalisation, where consumption is not an option, clearly escape is not what we need.

Preview from Notesale.co.uk
Page 45 of 50

And because customers' involvement as producers can wreak havoc on costs, service companies must also develop creative ways to fund their distinctive advantages.

- Any of these four elements – the offering or its funding mechanism, the employee management system or the customer management system – can be the undoing of a service business.
- 1. The offering
- A service firm focuses not on the characteristics the buyer may value but focus on the experiences a customer wants to have. Without a good product a service firm will fail.
- Service excellence can be defined as what a business chooses not to do *well*.
- At Wal-Mart, for example, ambience and sales help are least valued by its customers, low prices and wide selection are most valued, and several other attributes rank at points in between.
- The phenomenon, of course, has a circular aspect. Shoppers whose preferences match Wal-Mart's strengths self-select into its customer base. Meanwhile, those who don't prefer Wal-Mart's attributes buy elsewhere.
- 2. The funding mechanism
- There is no such thing as a free lunch, excellence comes at a cost which ultimately must be funded.
- A shopper might spend time learning from a knowledgeable salesperson, only to leave the store empty-handed.
- Therefore, service based industries must be careful so must fund either by making customer pay or use operational savings.
- E.g. Starbucks customers can stay as long as they want after buying a drink so Starbucks doesn't use meters on chairs but instead uses expensive coffee to fund the service.
- E.g. Some are clever and improve service and lower costs. Progressive Casualty Insurance sends a team after an accident immediately to arrive even before police. This is better service but reduces cases and costs of fraud so it pays for itself.
- If a self-service option is truly preferable, customers should be willing to take on the work for nothing or even pay for the privilege. For example, self-check-in kiosks at airports.
- 3. The Employee Management System
- Companies often live or die on the quality of their workforces, but because service businesses are typically people intensive, a relative advantage in employee management has all the more impact there.
- More to the point, the decisions made in these areas should reflect the service attributes the company aims to be known for.
- 4. The Customer Management System
- The customers themselves can be involved in operational processes, sometimes to a very large extent, and their input influences their experiences (and often other customers' too). For example, an architectural firm's client may explain the purpose of a new facility well or poorly, and that will affect the efficiency of the design process and the quality of the end product. A customer who dithers at a fast-food counter makes the service less fast for everyone behind him.
- In a service business, however, employees and customers are both part of the value-creation process.
- Successful service companies have a working plan that incorporates all four elements of service design. Within each of those areas, however, it is hard to spot any best