

Inf2: Software Engineering and Professional Practice

Lecture 8: Organisations

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Developed from a presentation by Aurora Constantin

What is an organization?



Becoming a Legal Entity

- Types of organisation: commercial, public, not-for-profit.
- Mostly we look at commercial organisations intended to make profits.
- Different kinds of organisations:
 - Sole trader – individual – no legal formalities – the legal entity is the individual.
 - If turn over is big enough will need to register for VAT etc.
 - The individual is liable for company debts–so assets like home, savings are at risk
 - Partnership – this is the form a group must trade under unless it is a limited company
 - Often the required form of organisation for professionals, e.g. law, medical, hedge fund, etc. because the liability issues control excesses
 - Liability is joint and several liability –all are fully liable for the debt of the partnership
 - Limited company : the preferred form of legal entity for commercial firms

Limited companies

Three principles:

- The company is a legal person separate from the people who own or work in the company.
 - Ownership is divided into shares that can be bought and sold by shareholders
 - Owners of the company have no obligation to pay debts incurred by the company – the owners' risk is limited to the value of their shares.
-
- In the UK:
 - Public limited company (plc): public can hold shares – Tesco plc – shares may or may not be listed on the stock exchange
 - Private limited company (Ltd): shares cannot be held by the public - Small Company Ltd

Setting Up a Limited Company

- Two documents:
 - Memorandum of Association: short and simple – name, location of the registered office, objects of the company, liability clause (saying the limits to liability of the owners), share capital (e.g. 100 shares, value £1 – to be a plc must have capital over £50K). Concludes with declaration of association that list the people setting up the company.
 - Articles of Association: Complex and technical (see for example: <https://www.gov.uk/government/publications/model-articles-for-private-companies-limited-by-shares/model-articles-for-private-companies-limited-by-shares>). Covers how the company will run, roles of directors, ...

Once a company is registered then the memo of association and articles of association are on public deposit at Companies House.

Directors

- Sometimes shareholders run the company but in larger companies directors may be employed
- Directors must have:
 - **domestic obligations** –owed to the company:
 - Have regard to the owners and employees’ interests
 - Act in good faith and for the benefit of the company
 - Exercise skill and care (be “professional”)
 - Declare conflicts of Interest
 - **legal/external obligations:**
 - Be aware of the financial position of the company
 - Drawing up annual reports and accounts and filing them at Companies House
 - Complies with relevant law

Directors /2

- Companies have executive (board of directors) and non-executive (members of the board – controlling the directors) directors
- Every company has a company secretary responsible for required communications

Setting up a company

- Not necessary to employ a lawyer or accountant
- Easiest way is to buy an “off-the-shelf” company and tailor it to your needs (change the name, objectives, constitution, ...)
- Registering a company yourself costs £100 (same-day service at the Register of Companies) – this is slower because you need to fill in forms etc.
- UK and US have similar, easy, ways to set up companies. In other countries it can take several months and cost thousands of pounds.

Non-Commercial Bodies

- Statutory bodies – set up by act of Parliament
- Royal Charter: sets up free-standing bodies that are independent of the state, e.g. Universities
- Not-for-profit organisations (often established as companies limited by guarantee):
 - Charities
 - Professional organisations: BCS, Institute of Physics, ...
 - Political Parties

Summary

- Becoming a legal entity – different ways
- What situations are different entities appropriate
- What limited companies are - obligations on limited companies
- Non-commercial bodies

Organizational models



Organizational Models

- Organizational Theory (founded by Max Weber on the theory side) developed the **bureaucratic model**:
 - Tasks are split into specialist roles and people become expert in these
Each rule is precisely specified so one expert can be substituted for another
 - Each individual is accountable to one manager who directs their work
Employees are required to relate to each other and customers in a formal and impersonal way.
 - Recruitment is based on qualification, employees are protected from arbitrary sacking, promotion is based on seniority and achievement
- **Organic Model** (Likert): “... ensure a maximum probability that in all interactions and in relationships within the organisation, each member, in the light of their background, values, desires and expectations, will view the experience as supportive and one which builds a sense of personal worth and importance” – small professional companies.

Matrix Model

- Accepts that bureaucratic model is too restrictive
- Work may be project-based
- Employees may be working on several projects simultaneously
- Employees may answer to several managers at once

Models and Principles

- Organisational Models look at the way the work is organized inside a company (organization of people).
- Organisational Principles look at how the components of organisations are decided and how they are related (structure of the components of the organization).
- Organisational structure is usually captured in an **organogram**.

Organogram - some Structuring Principles

- Function
- Geography
- Ownership
- Product Line
- Market Sector
- Technology
- Operational Structure

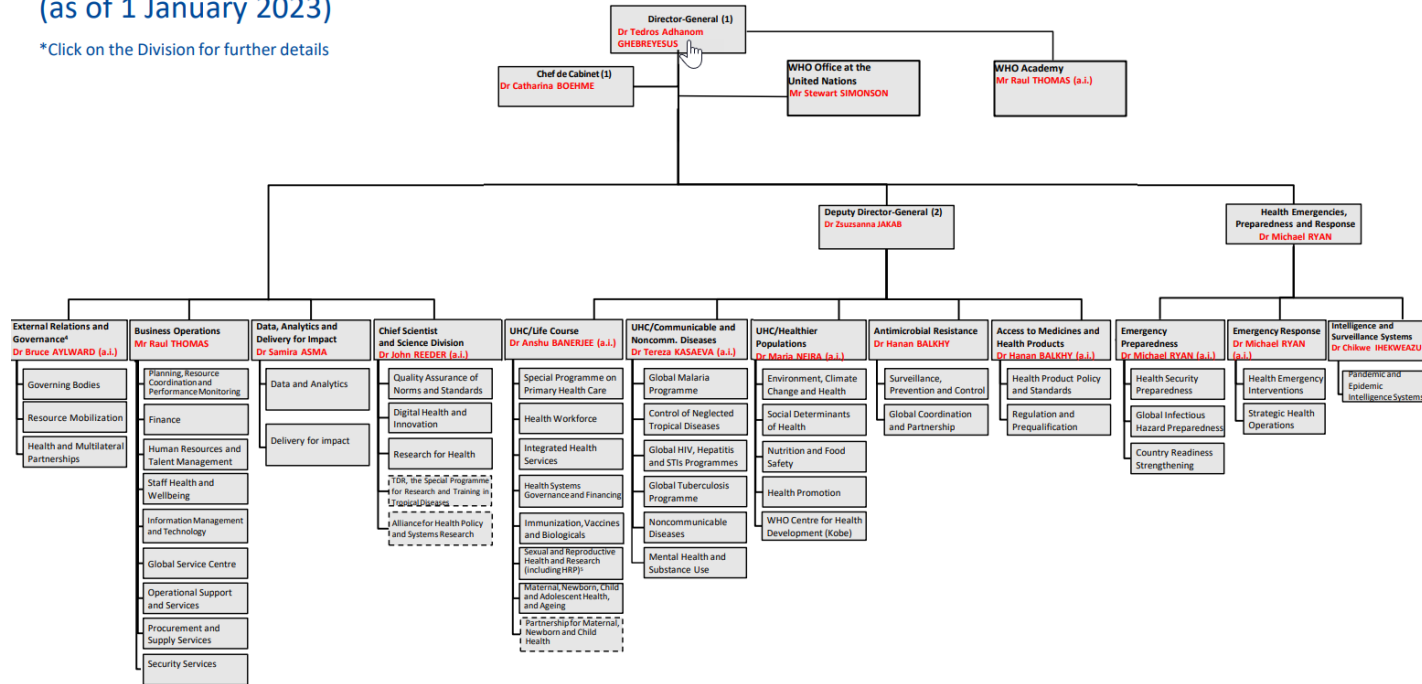
Organogram examples



World Health Organization Headquarters*

(as of 1 January 2023)

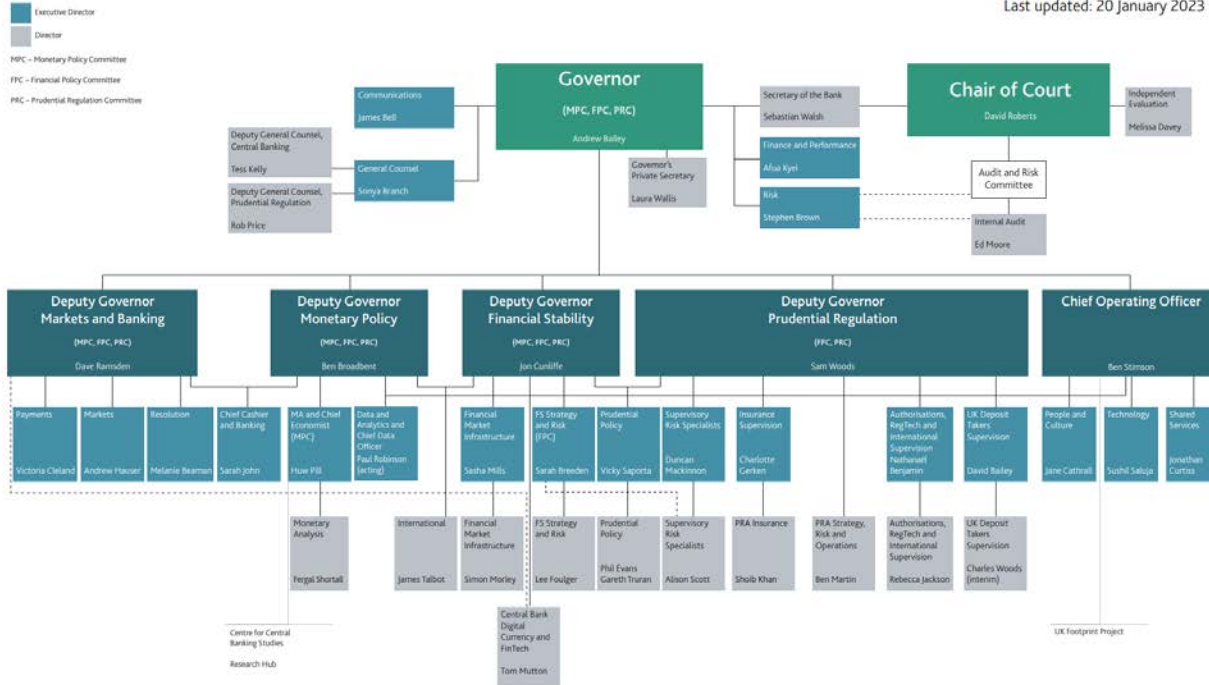
*Click on the Division for further details



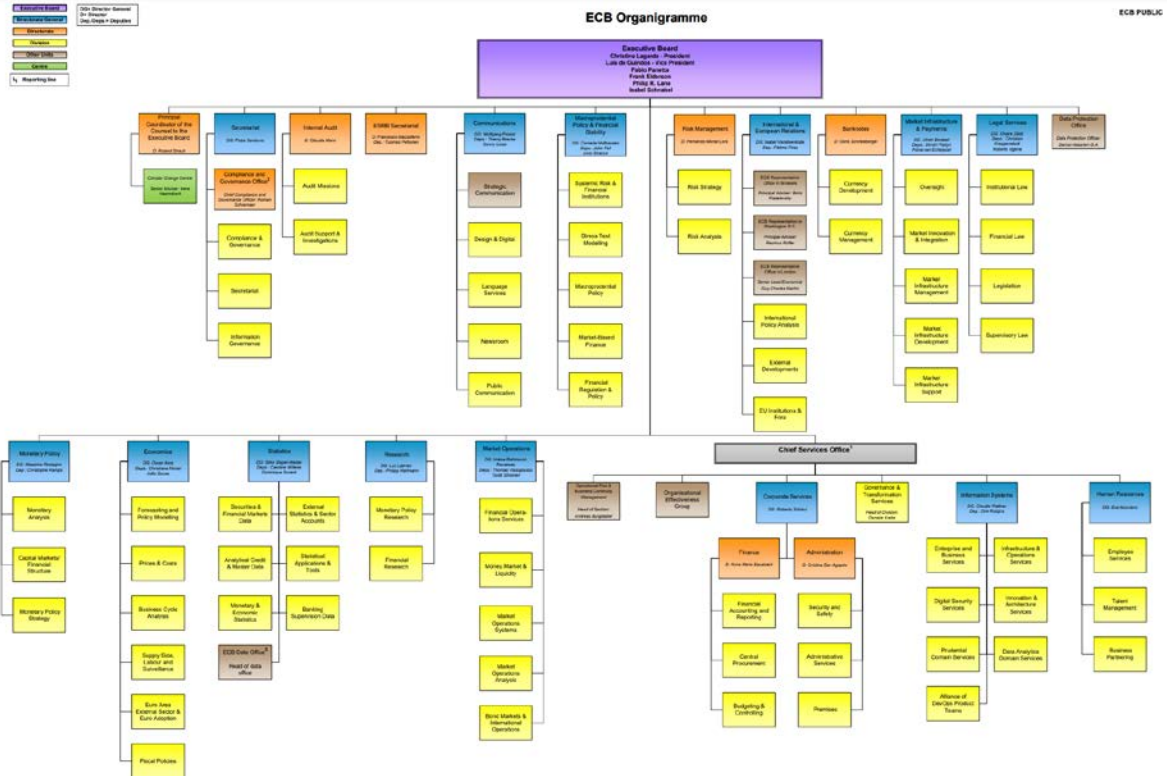
<https://cdn.who.int/media/docs/default-source/documents/about-us/who-hq-organigram.pdf>

Bank of England

Last updated: 20 January 2023



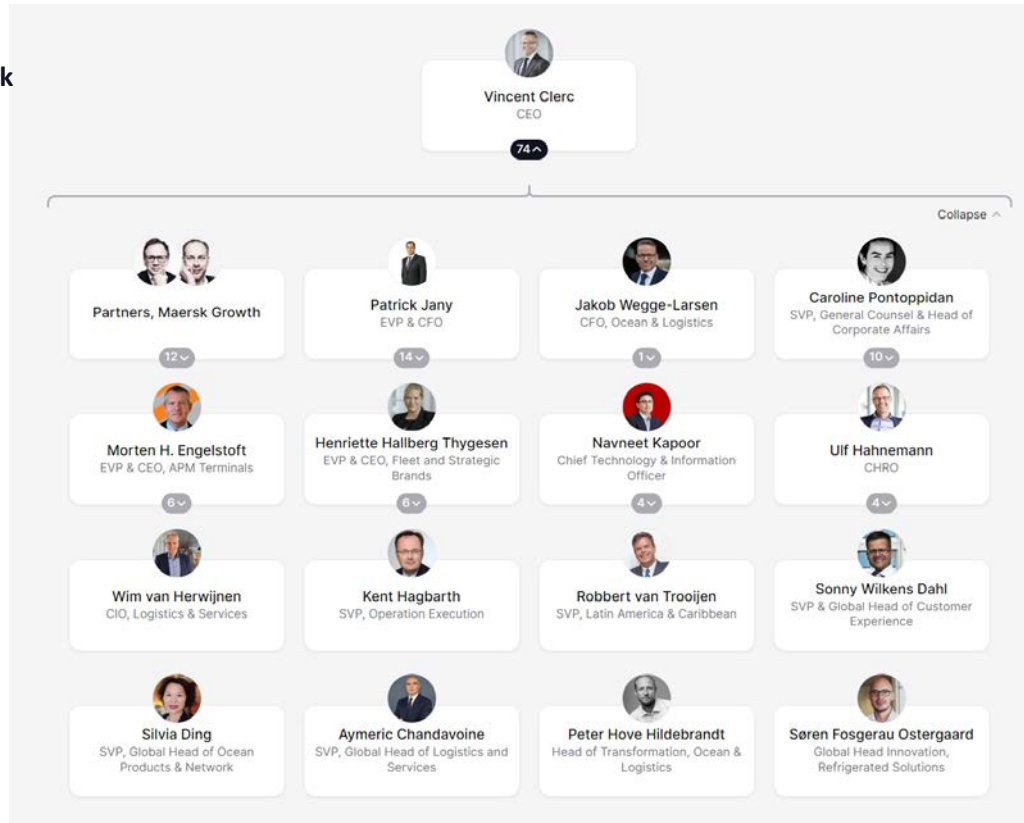
<https://www.bankofengland.co.uk/-/media/boe/files/about/people/orgchart.pdf>



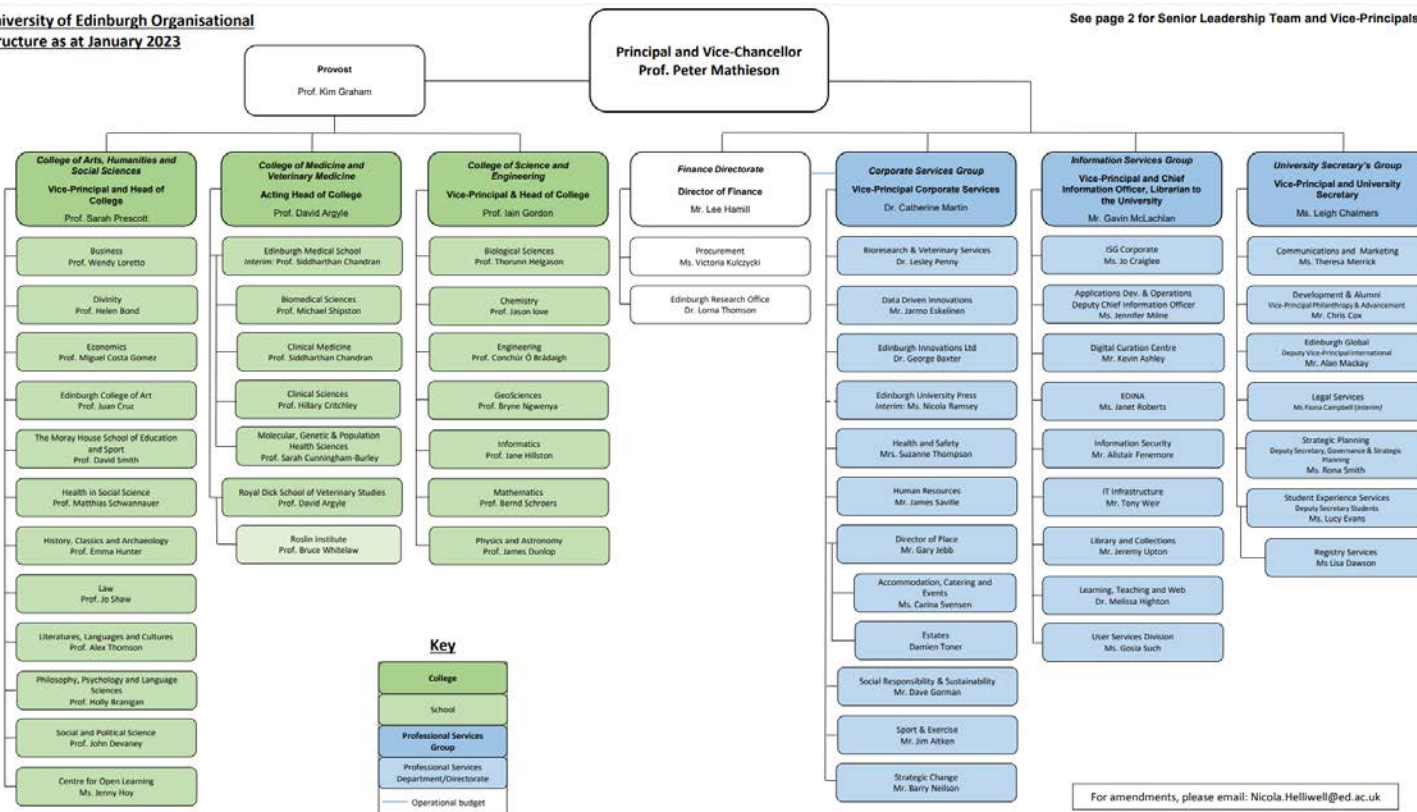
¹The CSO reports to the Executive Board via the President.
²The Chairperson/Chairperson includes the Chief Compliance and Governance Officer reports directly to the President.
³The Cash Office reports to the Chief Data Officer, sections assigned to DC-issuers.

https://www.ecb.europa.eu/ecb/pdf/orga/ECB_organizational_chart.pdf

A.P. Moller - Maersk



<https://teorg.com/org/maersk>

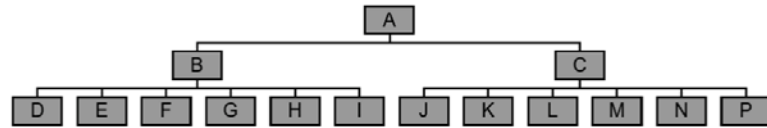
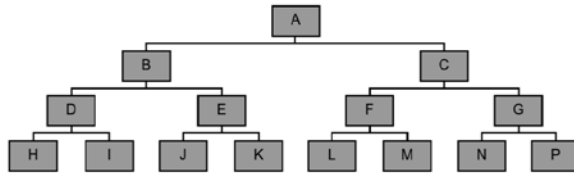


Activity

- Have a look at "the org" website, for example the org chart (organogram) for the company Diageo is here:
<https://theorg.com/org/diageo>
- Choose a company and look at its organisation.
- Think of what organising principle the company has and why you think it has this structure.

Depth of Structure

- the number of layers in the structure
- organisational structures are often described as flat or, in contrast, deep or tall, according to whether the depth is small or large



Centralisation

- centralised company
 - as much power as possible is kept at the top of the company, with delegation only when essential
- decentralised company
 - as much power and control as possible is delegated to the lowest level

Relation size of company and appropriate structure

- small company – service functions
- big company -- more oriented towards the market

The Guardian on VW "Dieselgate"

Volkswagen has made sweeping changes to its senior management team as it attempts to cut costs and overhaul its culture following the diesel emissions scandal.

The German carmaker has almost halved the number of senior managers reporting directly to Matthias Müller, the chief executive, and brought in several new faces.

Müller has pledged to transform the notoriously unwieldy structure of VW after the company admitted that the emissions scandal had occurred because of a “whole chain” of errors and a corporate mindset that tolerated rule-breaking.

He said the management changes would “speed up the decision-making process, reduce complexity and increase efficiency”.

<https://www.theguardian.com/business/2015/dec/17/vw-management-changes-emissions-scandal-german-carmaker>

VW Response to Dieselgate

- Key elements of the process optimization are:
 - Early documentation and interpretation of legislation around the world and alignment of the product portfolio with legal requirement
 - Guidelines for the development of software for drive control units with documentation of the features with relevance for registration product portfolio with the legal requirements
 - Uniform process standards and work instructions that give those involved legal certainty in the work process
 - Training programs in which everyone involved in the process is required to participate
 - Regular reporting to the Group Board of Management in order to create transparency in relation to the implementation status of this process optimization

VW Response to Dieselgate

- Key elements of the process optimization are:
 - Introduction of multiple controls for approvals in the product development process
 - **Reorganization within Development for the purpose of separating the responsibility for the development of drives from official approvals**
 - **Formation of new bodies for cross-brand management and clarification of compliance issues**

Summary

- Organisational structure is essential for larger organisations
- Structure according to business priorities
- All business structures make it difficult for the organisation to respond to some risks.
- Structure to facilitate business and make it easy to respond to the most likely serious risk.

Managers and Leaders



Managers and Leaders

One day you might become a manager or a director or a leader

- What does that *mean* exactly?
- What issues should you be sensitive to?
 - Seniority is important in determining this.
 - Managers will often be involved in operational matters.
 - Directors and leaders can be more strategic and policy-oriented

Pause for Thought

- Managers and Leaders
- What would you expect of:
 - A manager
 - A leader
- In terms of:
 - The activity they carry out.
 - Their personal characteristics and skills.

The Manager

- Develops plans and timetables
- Organises
- Delegates and monitors
- Exercises control, applies corrective action
- Communicates
- Motivates
- Delivers (predictable)
- Looks inwards

Leader can emerge ...

- Perceived by group as most competent in leadership functions
- Task-orientated: coordinating, initiating contributions, evaluating, information seeking and giving, opinion seeking and giving, motivating
- Socio-emotional: reconciling differences, arbitrating, encouraging participation, increasing cohesion

The Leader

- Establishes direction
- Develops vision
- Communicates and inspires vision
- Energises others
- Innovates
- Figurehead, Spokesperson
- Looks outwards

Summary

- Managers manage, leaders lead
- Managers have a specific role within the organisational structure:
 - Replaceable
 - Trainable
- Leaders provide direction, may arise from anywhere:
 - Not easily replaceable
 - Not trainable

Controlling Organizations



Organisation

- A company is an instrument for maximising value for the shareholders
- Driven by markets
 - lack of understanding of market = no customers = no business
- Driven by resources
 - lack of understanding = lack of control
- The more senior you become the more these will be concerns

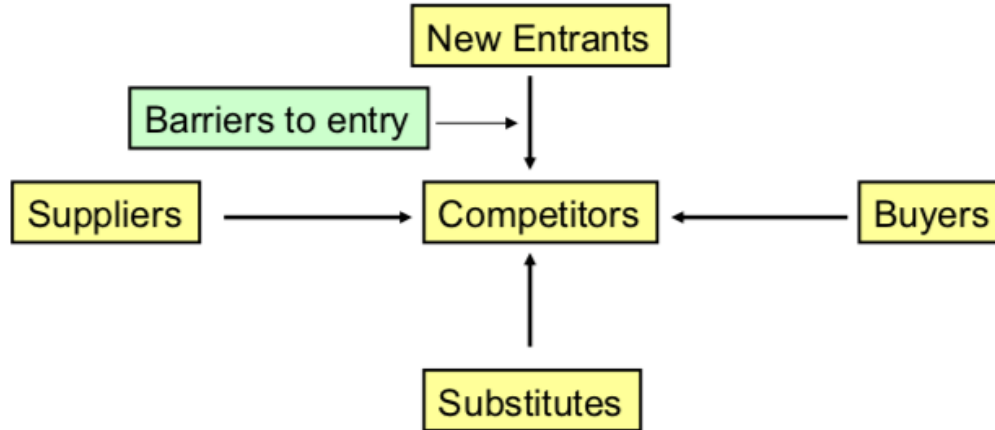
Performance areas (Drucker)

- Market standing
- Innovation
- Productivity
- Physical and financial resources
- Profitability
- Worker performance and attitudes
- Manager performance and development
- Public responsibility

Markets and Marketing

- Marketing is not stuff through your letter-box or people cold-calling you at 6pm.
- Marketing is the business of understanding the market, your place in it, your opportunities, threats, competition and your customers
- There exist many tools and models to help understand them

Porter's 5 forces



Examples

- New Entrant: Ford – Tesla
- Substitute: Vinyl record – CD – iTunes - Spotify
- Control of suppliers – Tesco
- Control of buyers – monopoly
- Control by buyers – perfect market; eBay?
- Barriers to entry – Semiconductor industry – mobile phones...

P.E.S.T. / S.W.O.T.

- Political
- Economic
- Social
- Technological
- Strengths
- Weaknesses (internal)
- Opportunities
- Threats (external)

P.E.S.T. – car market

- Political – emissions reduction targets
 - Works against internal combustion engines
- Economic – control of rare earth production
 - Raises concerns over electric vehicles
- Social – family size, behaviour
 - 1-parent families – hatchbacks?
 - Millenials: Transport as a service
- Technological – new products
 - Hydrogen, hybrids, recyclable materials

Marketing Mix – the 4 * Ps

- Product
 - Quality, features, name, packaging, services, guarantee
- Price
 - List price, discounts, credit
- Promotion
 - Advertising, personal selling
- Place
 - Distributors, retailers, locations, transport

Competition

- Can compete on *cost or differentiation*:
 - Cost: make the same thing cheaper
 - Differentiation: make it different / better / here
- Competitiveness based on core competencies
 - Anyone can make Coca-Cola
 - Only they have the network of licensed manufacturers and distributors (and the brand name)
 - Anyone can put an aircraft in the sky
 - Only the profitable airlines can fill it every time
- Each survivor is uniquely superior to all others in some way and thus occupies a niche

Exercise

- You are a horse-buggy whip manufacturer ca. 1910
- Consider the market you are in, perform a PEST and SWOT analysis and indicate what market repositioning might be advantageous

S.W.O.T.

Horse-buggy whip manufacturer, 1910 sees horses making way for cars

- Strength: has supply chain to reach buggy owners / future car owners
- Weakness: product is horse-dependent
- Threat: cars make product obsolete
- Opportunity: reposition as supplier of driver accessories

Actually, they didn't and went out of business

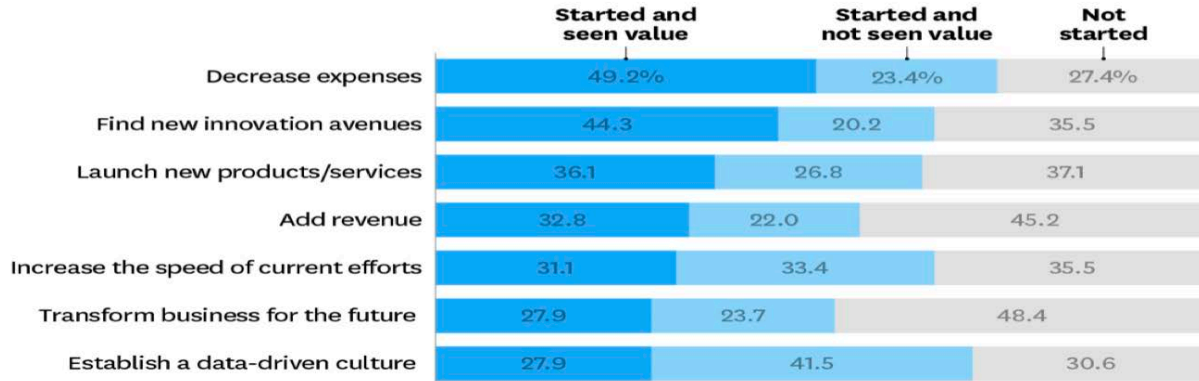
Market repositioning

- McDonalds
- Royal Bank of Scotland
- Burberry
- Apple

Data (this is an old chart, but progress is slow)

How Fortune 1000 Executives Report Using Big Data

The projects they've started, and where they're finding value.



SOURCE NEWVANTAGE PARTNERS BIG DATA EXECUTIVE SURVEY, 2017

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Summary

- Successful organizations know their markets
- Successful organizations are sensitive to changes in markets
- Successful organisations measure what is going on in markets
- Companies use data to support strategic decisions (and this is changing rapidly).