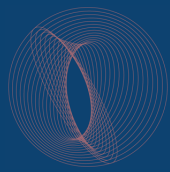
Technology and Society

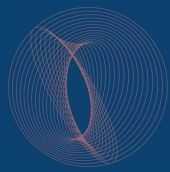
Technology

- Episteme (knowledge) and techne (craft/art)
- Theory and practice
- Scientific method (logical rules) vs rules of thumb (insight)
- Knowing that (propositional knowledge) and knowing how (non-articulated knowledge/tacit knowledge)



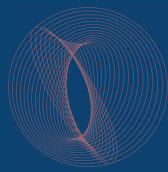
Technology

- Technology imitates nature
- Technology can produce things nature cannot. Aristotle "generally *technè* in some cases completes what nature cannot bring to a finish, and in others imitates nature"
- Natural and artificial - „Natural products (animals and their parts, plants, and the four elements) move, grow, change, and reproduce themselves by inner final causes; they are driven by purposes of nature. Artifacts, on the other hand, cannot reproduce themselves."
- Technology - instrumentality and productivity
  - Instrumentality - control of life and environment
  - Productivity - invent new things to achieve something



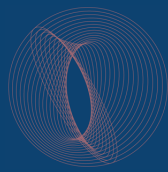
Technology

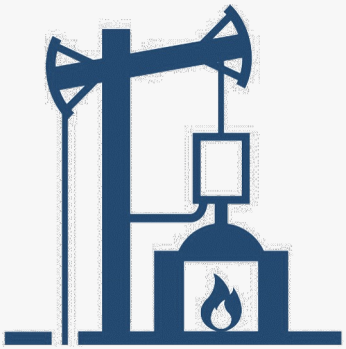
- Relationship between Science and Technology
  - Is technology applied science?
  - What about the impact of technology on science?
- Ontology
  - Science: How things are? (Actuality)
  - Technology: How things ought to be? (Possibility)

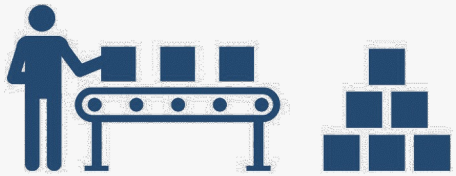


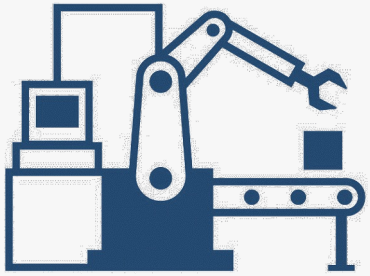
Technological progress

- Bacon in the Novum Organum: „Again, it is well to observe the force and virtue and consequences of discoveries, and these are to be seen nowhere more conspicuously than in those three which were unknown to the ancients, and of which the origin, though recent, is obscure and inglorious; namely, printing, gunpowder, and the magnet. For these three have changed the whole face and state of things throughout the world; the first in literature, the second in warfare, the third in navigation; whence have followed innumerable changes, insomuch that no empire, no sect, no star seems to have exerted greater power and influence in human affairs than these mechanical discoveries.“





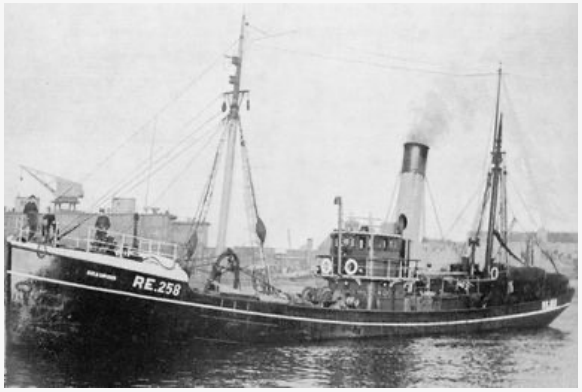




Industrial revolutions

- First (steam power) 1760-1870
- Second (electricity) 1870-1970
- Third (information technology) 1970-2010
- Fourth (artificial intelligence) 2010-

Technological advancement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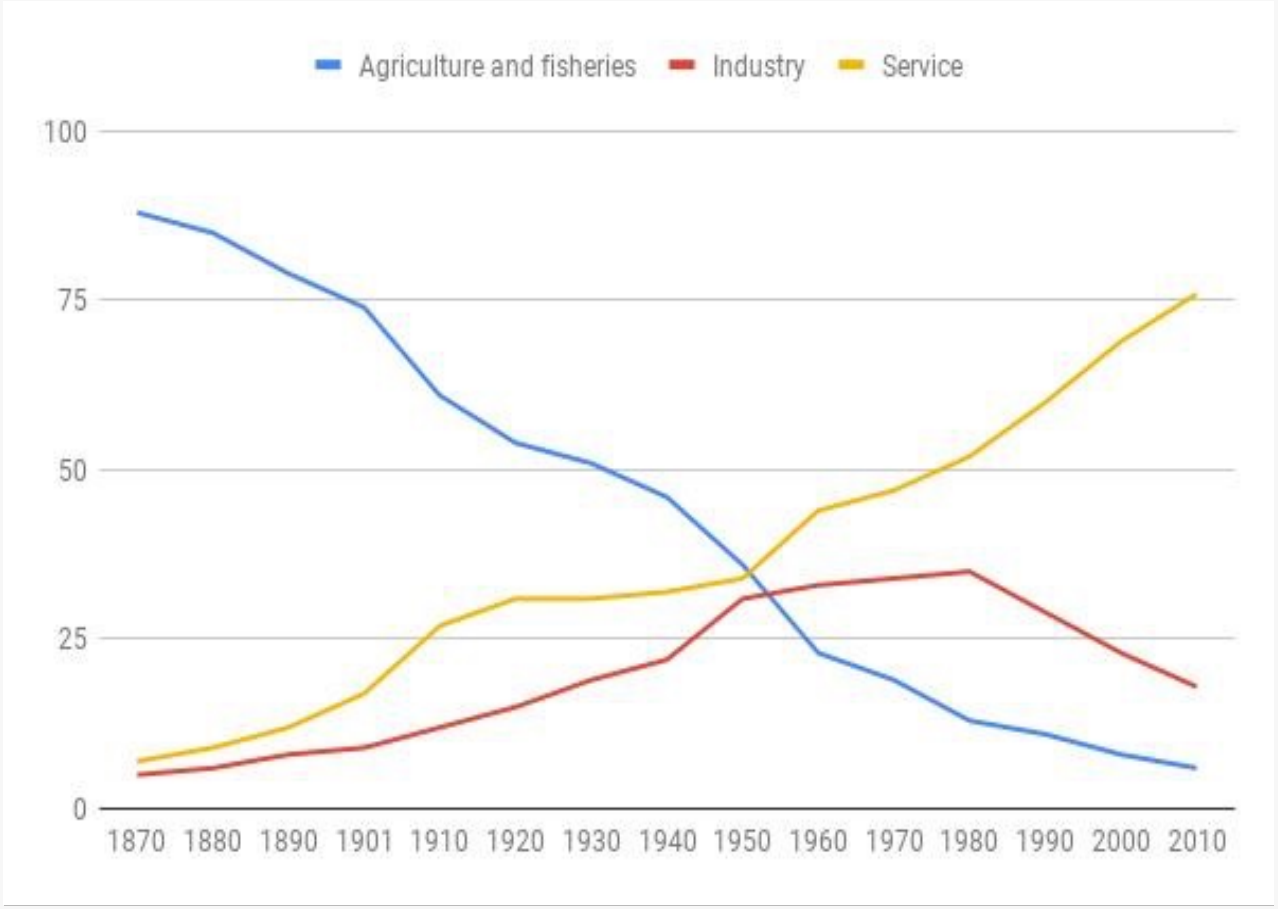
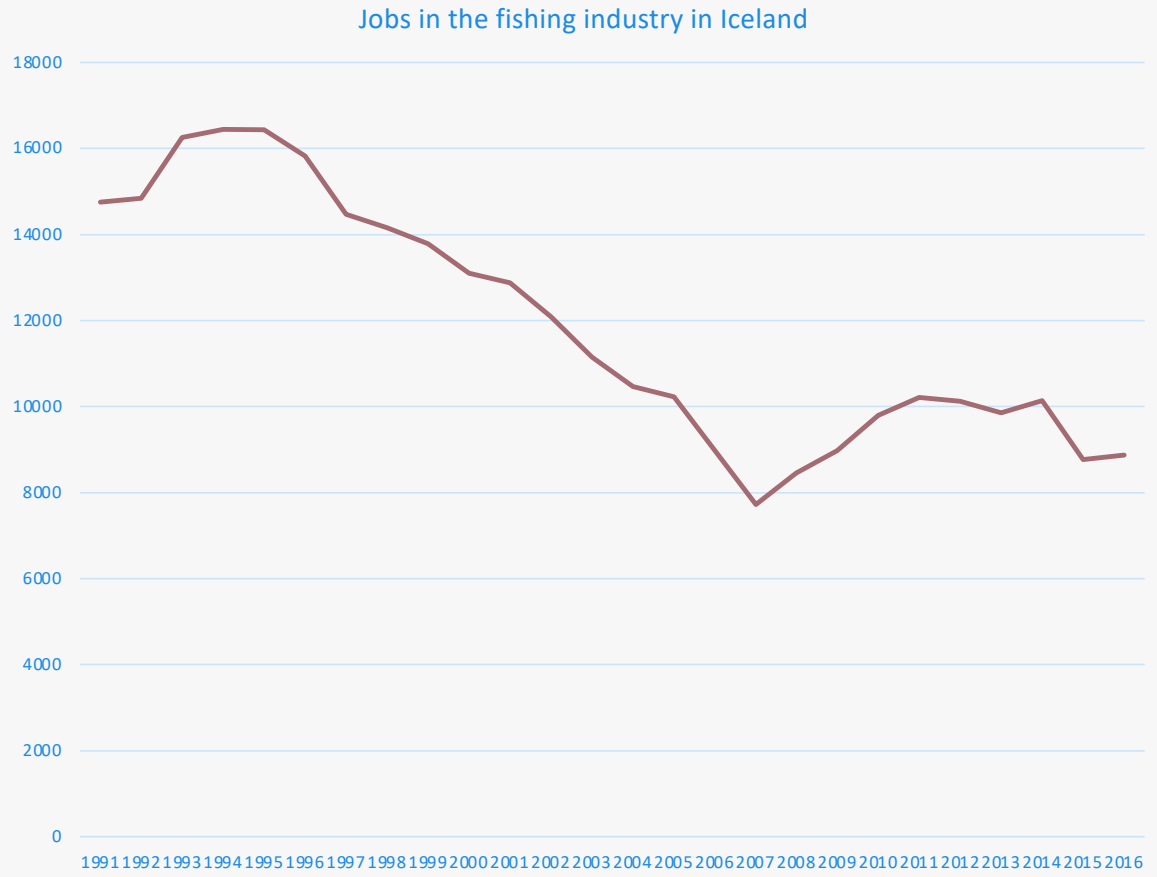
Changes in the labour market in Iceland are well known.

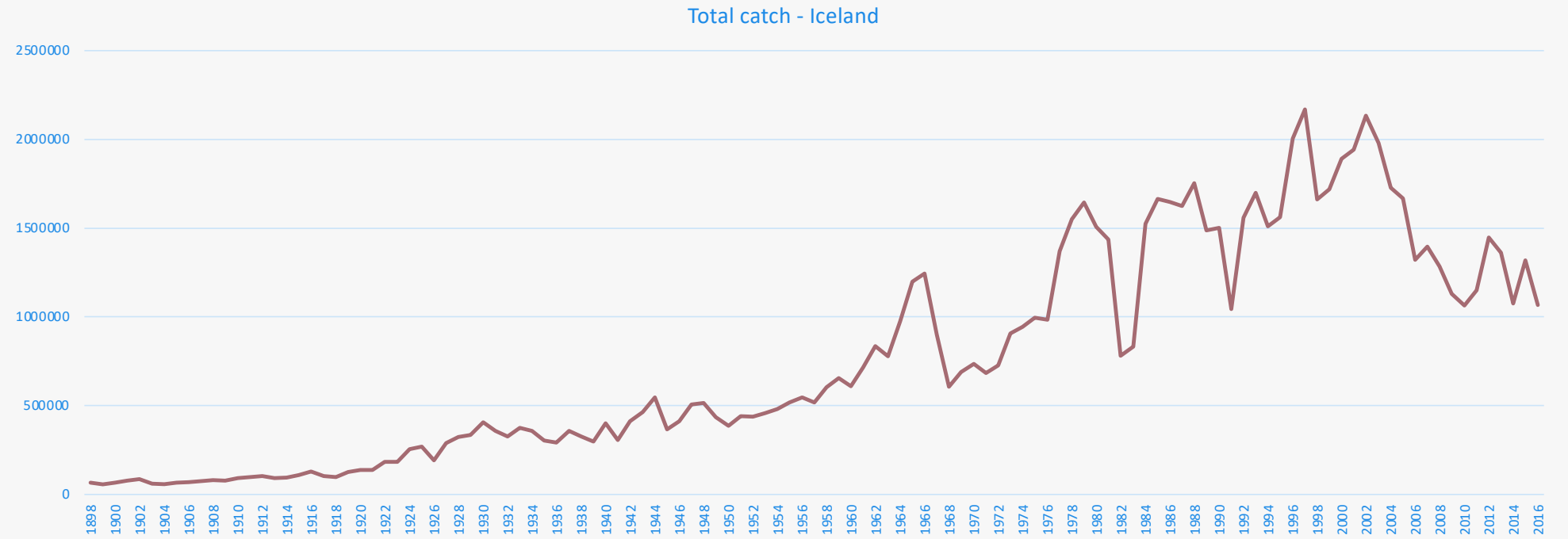
- Jobs in fisheries and agriculture have dropped from over 80% of the labour market down to under 15% in the last 100 years.
- Jobs in services have taken over.
- Seafood sector still of great importance in terms of export.



Fewer jobs

- In the traditional fishing sector there are fewer jobs.
- In high-tech fishing sector we have an increase in job.
- Big difference between the sectors in terms of skills required.





Technological advancement and fisheries

- Industrial revolutions have had a huge impact on fisheries.
- The first and second revolutions increase the total catch and how far ships can go.
- The third increases the amount of data about the industry.
- The fourth is about quality and better production.

Robot with a Knife nominated

Marel Poultry's "Robot with a Knife" has been nominated for the Food Processing Awards 2017

Automatic tub transport

A new and innovative automated transport system for tubs is expected to change catch handling significantly and to improve conditions and working practices for crew. This is a co-operative development project by the companies that has been designed with HB Grandi's technical department and Nautic, which designed the trawlers.

The primary advantages offered by the transport system are:

- An unmanned fishroom system.
- Automatic delivery of empty tubs from the fishroom to the handling deck.
- Tubs to be filled and finished on the handling deck.
- Transport of tubs from the handling deck and stacking in the fishroom is automatic.
- Fishroom inventory maintained automatically.
- Automatic loading and discharge.

Valka

Valka Cutter

Automatic removal of pin bone and portion cutting

The Valka Cutter automatically removes pin bones and cuts to the desired portions. The machine uses combination of an X-Ray and 3D image processing system together with robot controlled water jets to locate and cut pin bone and portions with great accuracy.

The system analyzes each fillet and cuts highly uniform portions in relation to size, weight and thickness according to your specification.

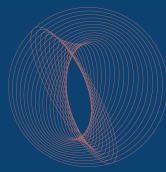
Multiple cutting patterns or programs can be defined and different size of fillets

Seafood sector

- Technological advancement within the seafood sector.
- Increased competitiveness (Machine vs. Labour).
- Better results in processing (impact on pricing)
- Use in other food sectors.

Disruption

- Rural areas vs. high tech development.
- Shift in jobs. Traditional jobs automated but increase in high tech jobs.
- Competition with labour in other countries.
- Change of relation with consumer.
- Disruption of the traditional value chain.



Guthenberg press

- 1440 Gutenberg in Germany his invention drastically changed society.
- The establishment of the printer strengthened certain crafts such as copyists, book binders, gold- smiths, rubricators, illuminators, and miniature painters.
- Printing offered opportunities.

Reformation and the printing press

- When Luther made his first public appearance in 1517, the art of book printing had been in existence for over half a century.
- Catholic vs Lutheran.
- Already in the years from 1517-1520, Luther was the most widely read and most influential writer on religious subjects in Germany.
- One-third of a million copies of his works were spread throughout Germany between 1517 and 1520.