Risk management in Social Services

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Who am I?

- Ph.D. in Mechanical Engineering at University of Twente
- Project, Program and Department Manager at TNO (Dutch Applied Research Organisation; accident investigation)
- Associate Professor Management Science at Technical University Delft
- Teacher Shell Project Academy
- Project and Risk Management Expert at ASML (Dutch multinational high tech company)
- Bridge builder, family man, sportsman. hobby poet, hobby philosopher, …

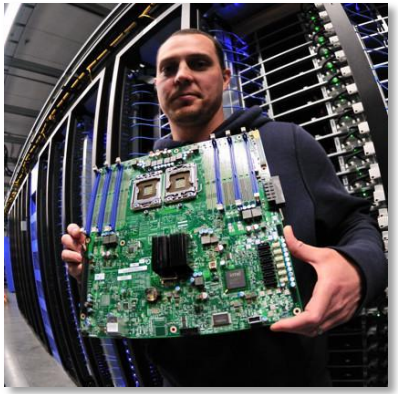
Agenda

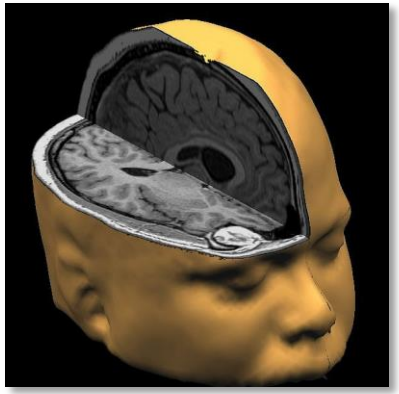
- Short introduction ASML
- Quality management in a company
- What are risks in the first place?
- Risks management in action
- Risk management is important, but not the holy grail

What am I doing here?

Short Introduction ASML

It’s hard to imagine a world without chips

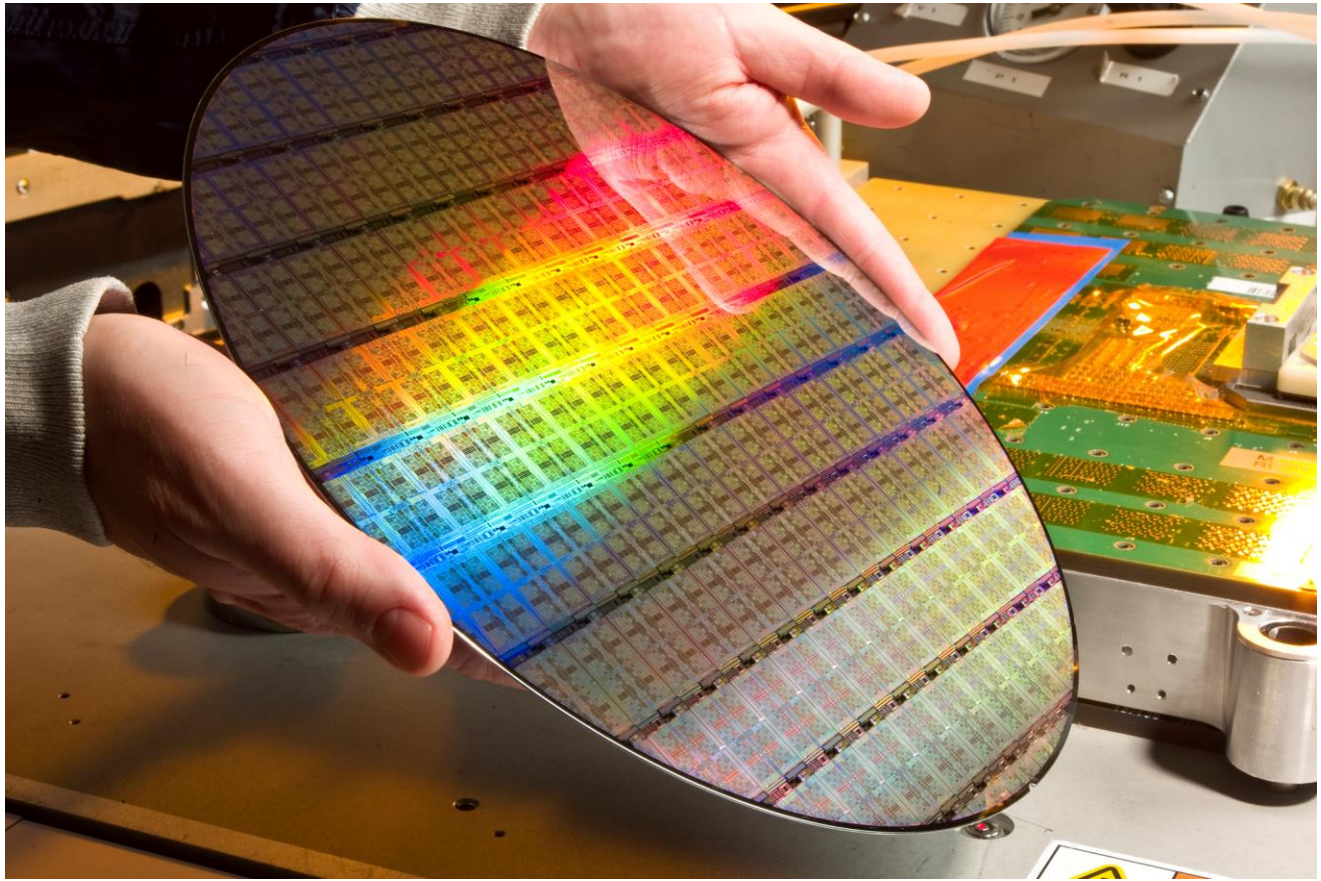




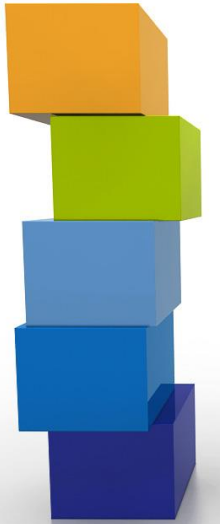
ASML makes the machines for making those chips

- Basically our machines are complex printers
- All of the world's top chip makers are our customers (e.g. Samsung, Intel)
- 2016 sales: €6.8 bln
- ASML is a Dutch company
- 14,500 employees worldwide

A wafer is like a pancake



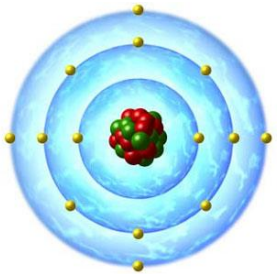
Nanometer accuracy

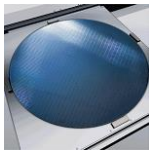


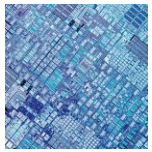
Can you drive 600 kilometers per second on the autobahn – while keeping the wheels of your car within 2 millimeters from the white line? And accelerate to 100 km/h in 0.18 sec? With larger than 97% uptime? An ASML system can.

40 layers within 2 to 3 nanometer

(1 nm = 4 silicon atoms)







A chip has more than just one layer

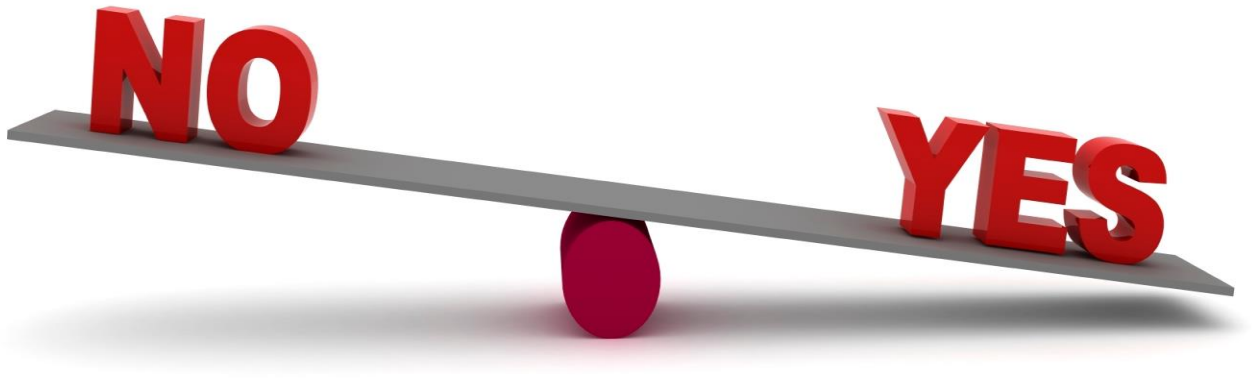
Quality management at a company like ASML

Two types of quality need to be distinguished:

- Product quality – the qualification of our machines (nanometers, speed, reliability)
- Process quality – first time right, zero failure, no failure leaves me
  - All processes described in Level 1 (company map) to Level 5 process (work instructions)
  - This includes process quality of projects and production processes

Now to my topic….: risk management

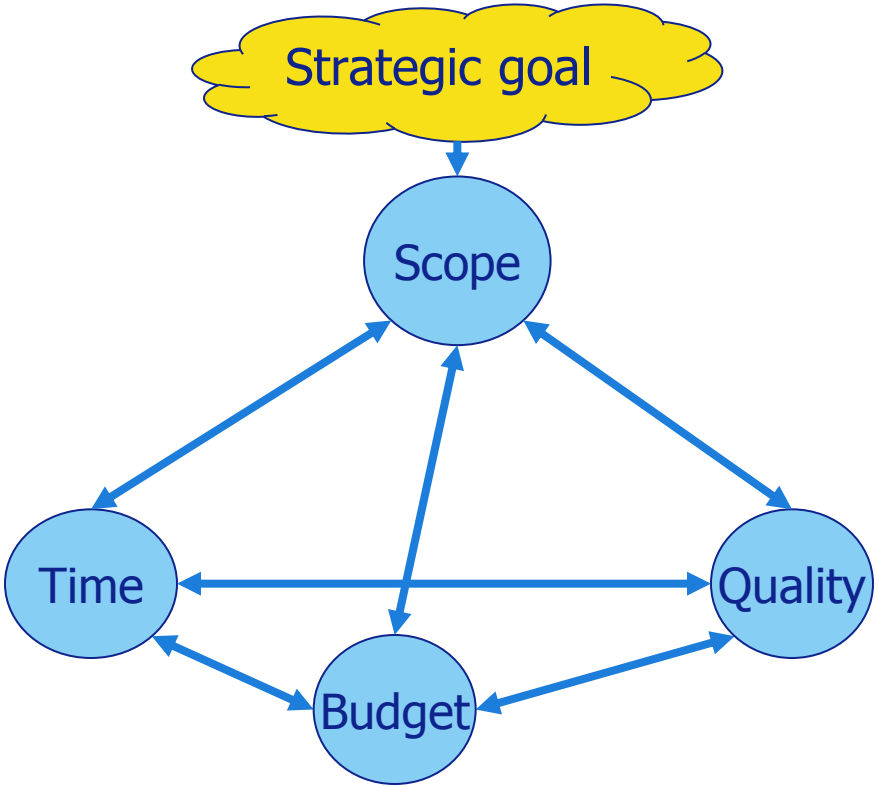
Risk management in the social sector?



What is a risk?

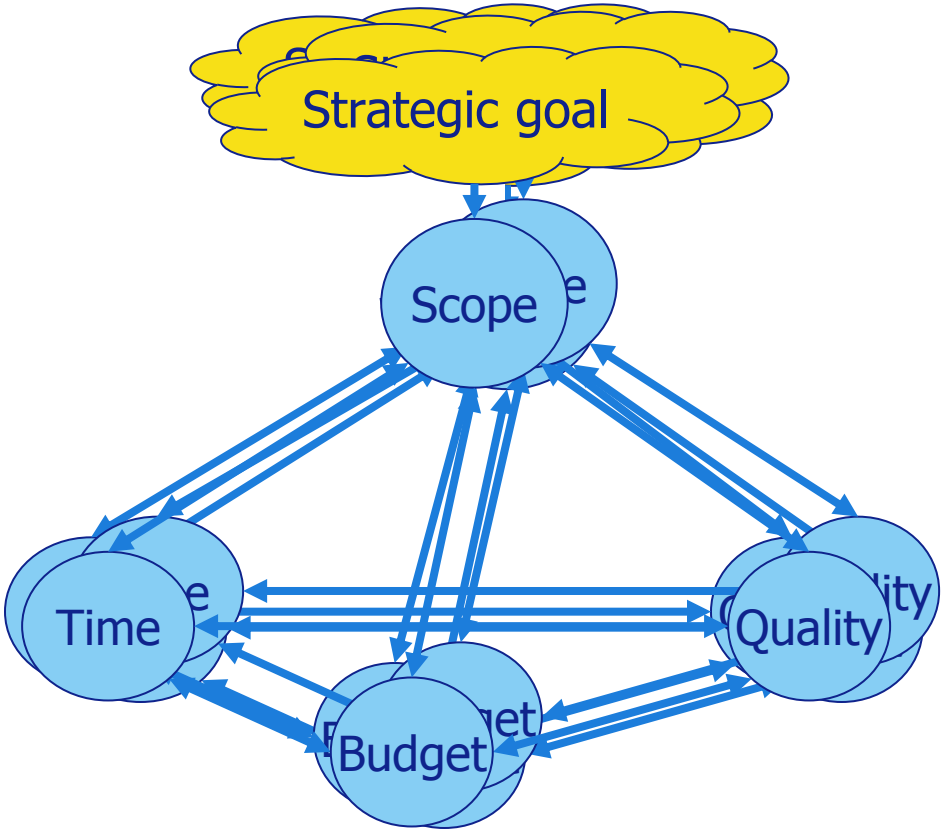
Promises in management

As manager you make multiple promises, for example…



(source: Turner, 2008)

Risks make all your project promises blurry…



Definitions: Uncertainty – Risk – Issue

Uncertainty –	intrinsic unknown in an organisation (does not have to be bad)
Risk* –	an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more promises such as content, schedule, cost, or quality
Risk (ISO 31000)	the effect of uncertainty on objectives (used to be "chance or probability of loss“)
Issue –	existing (!) problem (might be a risk that materialized)

(*source: PM-BoK, 5th edition)

A risk is an uncertainty that matters

Drilling a bit further into risks…

- A risk is about:
  - the probability of an uncertainty and
  - the impact it has on the organisation

- Priority of risk = probability x impact

- Qualitative risk analysis: probability and impact in categories: for example "*high-medium-low"* or "*3-2-1*

Risks are subjective, thus personal…

- Who are you and who are your team members…?





Different types of risks

There are risks on various levels:

- Strategic risks (e.g. politics, economy, financing, insurances)
- Operational risks (e.g. health risks, contracting, timing risks)

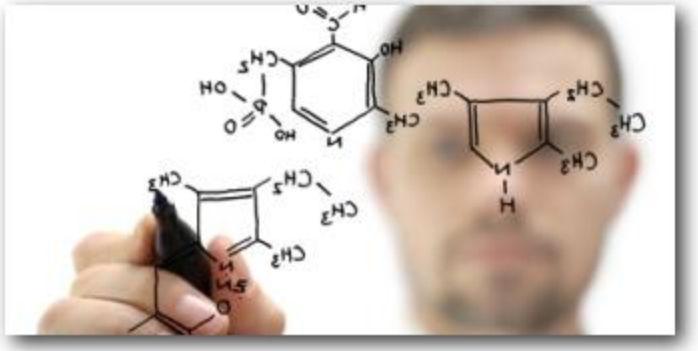
For each risk it needs to be decided on what level it will be dealt with

Risks management in action

It is important to phrase risks in the right way

A good risk definition contains three parts:

1. A cause
2. The risk event
3. The effect on a project promise



Proper formulation is key for being capable (at all) to manage the risk

Choose your responses to Threats and Opportunities

Risks and quality assurance

Also there is a crucial difference between risks in:

- Quality assurance – focused on prevention,
  e.g. measures, conditions, product development
- Quality control – focused on identification,
  e.g. audits, checks

Don’t jump into managing all risks away (control), but deliberately think about your response (assurance).

Risks management is not the holy grail

Risk management in a company

Risks are

- an important decision input at major decisions
- used to determine the chance of hitting the targets
- an important input for progress meetings
- formulated rather well (cause-risk-effect)
- part of the culture…

Risk management is not a holy grail

- “I am so proud of my 1500 risks in my risk register…”
- “Risk management makes my work dull….”
- “I really need to have all the risks in my register”
- Check-in-the-box culture
- Cover your back behaviour

- Yet another thing from the private sector…?

Added value of risk management in social services

Risk management…

- gives you control of those uncertainties that matter in your organization
- forces you to think of what is the real uncertainty really
- forces you to think deliberately on your risk response: what, when and by whom

Paul van Tongeren (Dutch ethics prof): “Who wants quality needs to deal with uncertainty…”

Assurance in Social Services

ASML