

Facilitators and blockers for ML adoption

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Intro

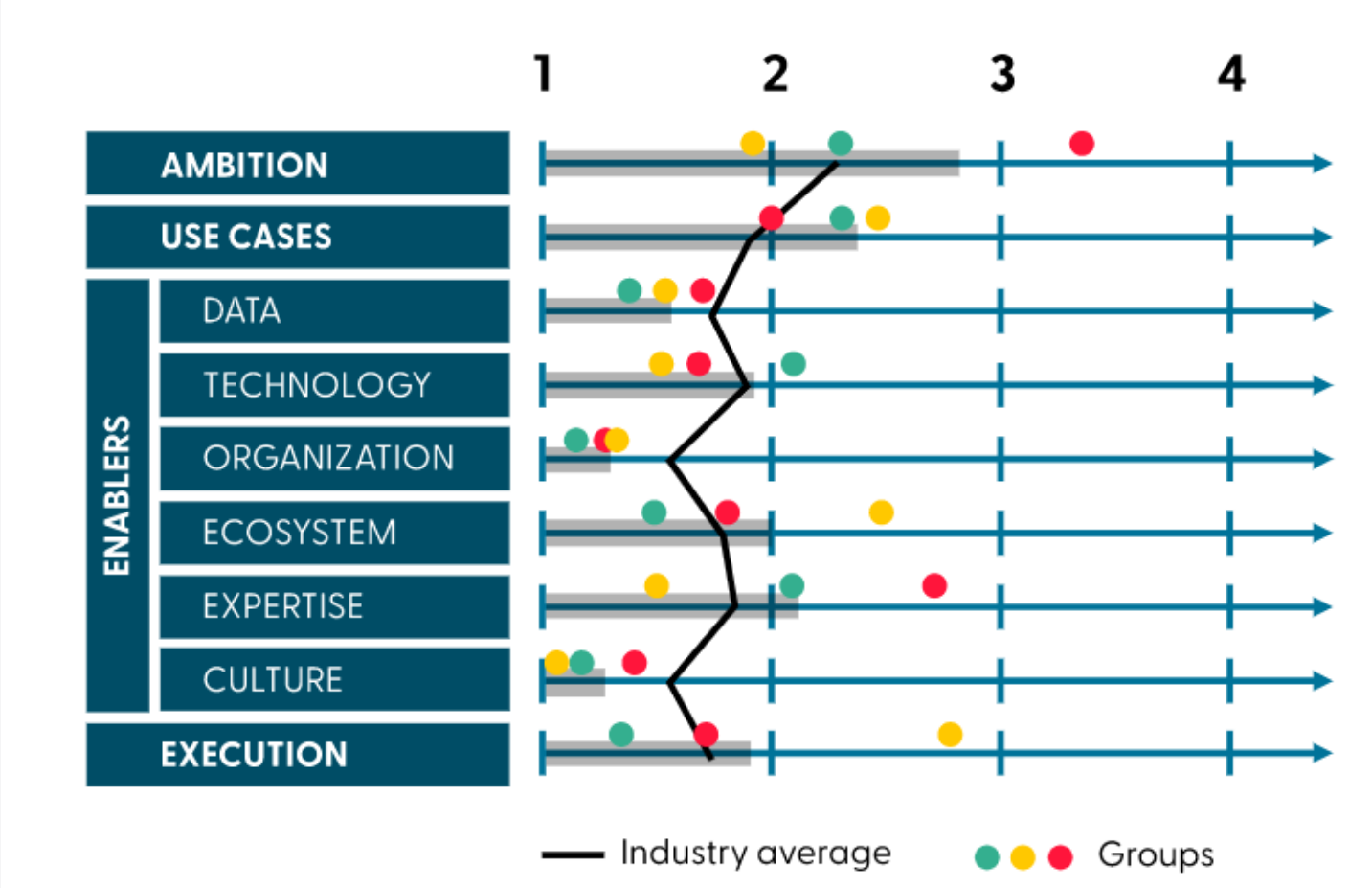
- There is a lot of technical guidance for ML, less capability / organisational guidance
- ML should support:
 - Efficiency & automation
 - Tapping into new data sources
 - Increased quality by expanded range of techniques

Intro

- Establishing ML and AI functions is not only:
 - Delivering successful pilots
 - Having the right IT infrastructure
- How do we embed ML?
- How do we sustain ML?
- Need greater understanding of our ML maturity

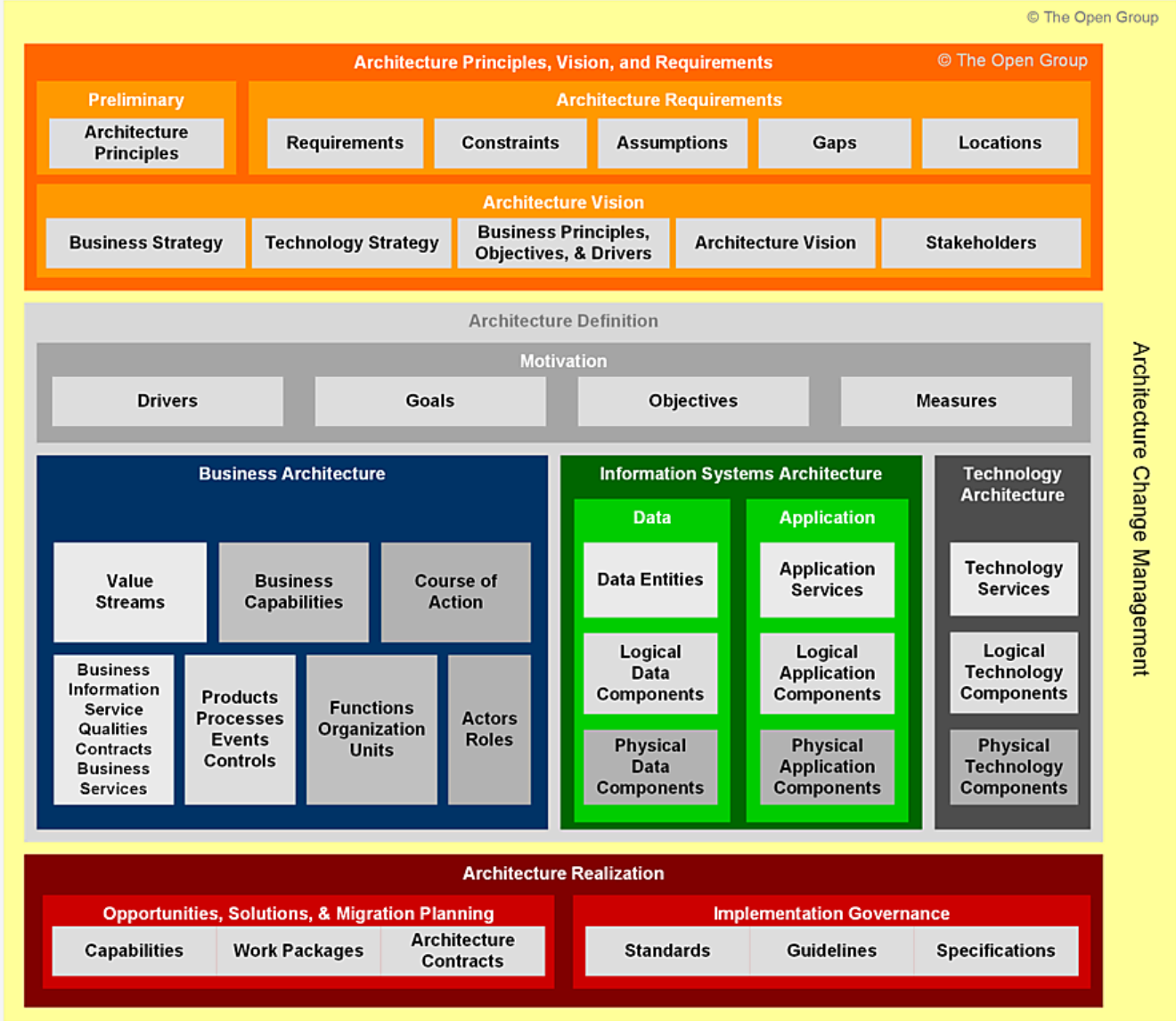
Scope

- How do you divide the problem?
- See AI Sweden framework & maturity model



Scope

- See TOGAF as an alternative
- Business capability:
 - People
 - Processes
 - Information
 - Resources

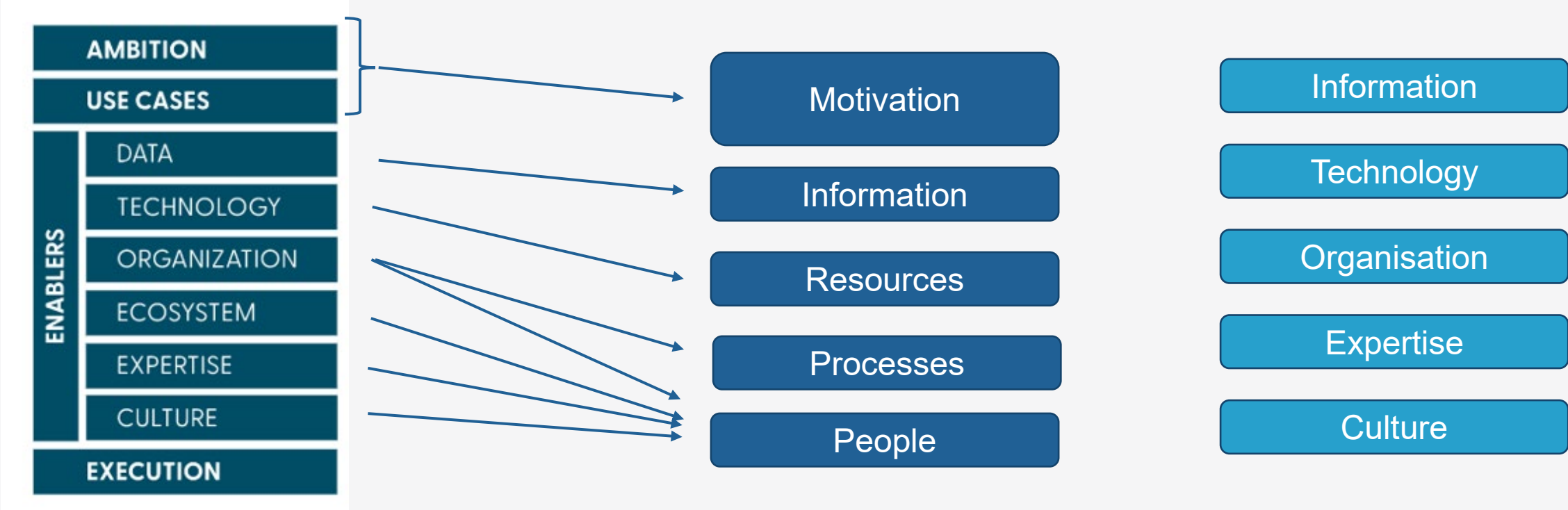


Architecture Change Management

Scope

Close enough, but
granularity of Swedish
framework is useful!

Synthesis!



Organisation

- Clear function / responsibility for ML
- ML visibility & contact point
- Escalation route for ML issues - SRO
- Hub & spoke models
- Adequate policies
- No policies / lack of clarity on status of ML
- Lack of leadership – no owner, no contact, no initiatives
- Spokes without a hub, hub without spokes

Culture

- Existing expert groups for learning & practice
- Established product delivery approach
- Ease of collaboration stats / ML / IT
- External communities
- Trust & transparency
- High degree of expertise silos
- ML as deliverable within a project, rather than product
- Risk aversion

Expertise

- ML practitioners
- ML and data science as recognised roles
- Access to training
- History of carrying out Big Data / Data Science / ML projects
- ML projects are outsourced
- No training (internal or external)
- No ML role recognition
- Salaries unable to attract and retain talent
- Data science and ML skills are secondary to roles

Technology

- Access to:
 - Hardware
 - Software & packages
 - Cloud
- Funding
- Open source
- MLOps and Devops tooling & practice
- Software restrictions / delays / old versions
- ML carried out on generalist hardware or individual laptops
- Multiple hurdles and handovers in ML lifecycle from R&D to deployment

Information

- Ease and speed for accessing and merging data
- Metadata & business rules
- Secure environments
- Data can't be merged, accessed or placed in a suitable environment
- Legal and privacy hurdles

Recommendations (1)

- Organisation:
 - Establish a named lead; clarify the status of ML in your NSO with clear published policies; provide a contact to raise concerns; provide enough room for staff to carry out projects and fail; consider where established processes can benefit from ML (not only new, innovative processes)

Recommendations (2)

- Culture:
 - Create internal networks for ML and invite staff to partake in external networks too; publicise to staff ML activities and projects; be open and transparent; consider critical ML models as ‘products’ of the NSO
- Expertise:
 - Recognise ML and data science roles alongside IT and statistical roles; provide sufficient opportunities to develop projects and access training; consider pay & benefits

Recommendations (3)

- Technology:
 - Don't buy a single tool to solve everything; provide adequate hardware (either on premises or via cloud); lots of ML is open source – consider your open source policies; ensure you have Ops practices that allow to bring ML from R&D to live
- Information:
 - Target data you can apply ML to; ensure your platforms are suited to the volume, speed and privacy requirements of the data

Conclusion and questions

- Still time to build a maturity model
- All conclusions to be challenged!