

AI Center of Excellence Strategy: Scaling AI in Production in Energy Transmission

Background and Summary:

Following initial successes in developing AI proof-of-concepts within the Innovation department, Elia Group founded the AI Center of Excellence (CoE) in 2020, with the mission to “enable everyone in the company to harness the power of their data via AI and ML”. At the time of the AI CoE founding, 3 core areas were identified as the core capabilities and enablers the AI CoE would need to provide in order to achieve this mission: **(1) people expertise**, **(2) tool support**, and **(3) process orchestration**. At the time of the AI CoE founding, these enablers still had to be put in place: for example, Elia Group had only 1 internal data scientist (people expertise) at its founding in 2020, and did not yet have an ML-model training and deployment platform in place (tool support). In the ensuing 2 years, the AI CoE has expanded its capabilities in these core areas, while also identifying a new area of vital importance: ML-Ops.

Main learnings:

In each of these 3 pillars, the following were our primary learnings in building up the AI CoE over the course of 2 years:

1. People Expertise
 - Deepening people expertise involved up-skilling, hiring and training at two levels: within the AI CoE, and within the wider business. Within the AI CoE, this mainly involved hiring more internal data scientists, and upskilling them to focus on ML-Ops and software engineering best practices. In the wider business, an AI Demystification course was provided to 12 departments, to give all employees a base knowledge of ML and AI concepts, and hands-on trainings were made for citizen DS. A training was also developed for business owners of AI projects, to help them better lead the projects and manage the uncertainty involved in data-driven product development.
2. Tool Support
 - To improve the tooling options available for data scientists, the AI CoE worked together with IT. Challenges included managing IT security concerns, especially for model development and deployment within the secure IT environment, and training IT experts on the unique needs of data scientists as developers.
3. Process Orchestration
 - We knew that advancing AI adoption within the company would require change and coordination across all departments. In the 2 years of building up the AI CoE, we found that the most important areas for process orchestration were with the data and IT teams, and with setting up strong project governance centered on empowered business owners of AI projects. Without these two aspects, frustration often appeared on the business side (apparent through misaligned expectations on the length of each phase of an AI project, and the uncertainty at each phase), and the side of the data scientist (frustration around not being able to access the tools and data they need).

Outcomes and Strategy going forward:

Taking these learnings in the 3 original pillars into account, the AI CoE core competencies changed to include one other main pillar, ML-Ops. ML-Ops is a way of working that focuses on putting machine learning models into production as quickly as possible, making it easy and automatic to re-train and improve the models, and above all, managing ML models as living products: monitoring their performance together with the business.

With this in mind, the new set up of the AI CoE is as shown: with process orchestration taking on a new position, supporting the other 3 pillars at all times. Consistent education and communication are the central tools comprising process orchestration: particularly, enabling those in the business (outside of AI CoE) to both deeply understand machine learning, and also to create their own ML proof-of-concepts. With these 4 core enablers, **(1) people expertise**, **(2) tooling support**, **(3) ML-Ops**, and **(4) process orchestration**, Elia Group has increased the number of ML use cases in production, as well as the number of departments within the business with ML use cases.

This strong basis for enabling AI adoption then allows the focus to shift to deepening AI adoption: namely, by expanding the number of use cases and departments with AI use cases. This also allows for a more focused selection of use cases: improving the ideation phase with techniques like data

thinking and AI-by-design. This strategy fits well with a movement toward product-centric work in the organization. Finally, having this strong operating model allows for more use cases to be tested, put into production, and maintained, as the solid governance and technology infrastructure framework can support more models in production.