Machine Learning II

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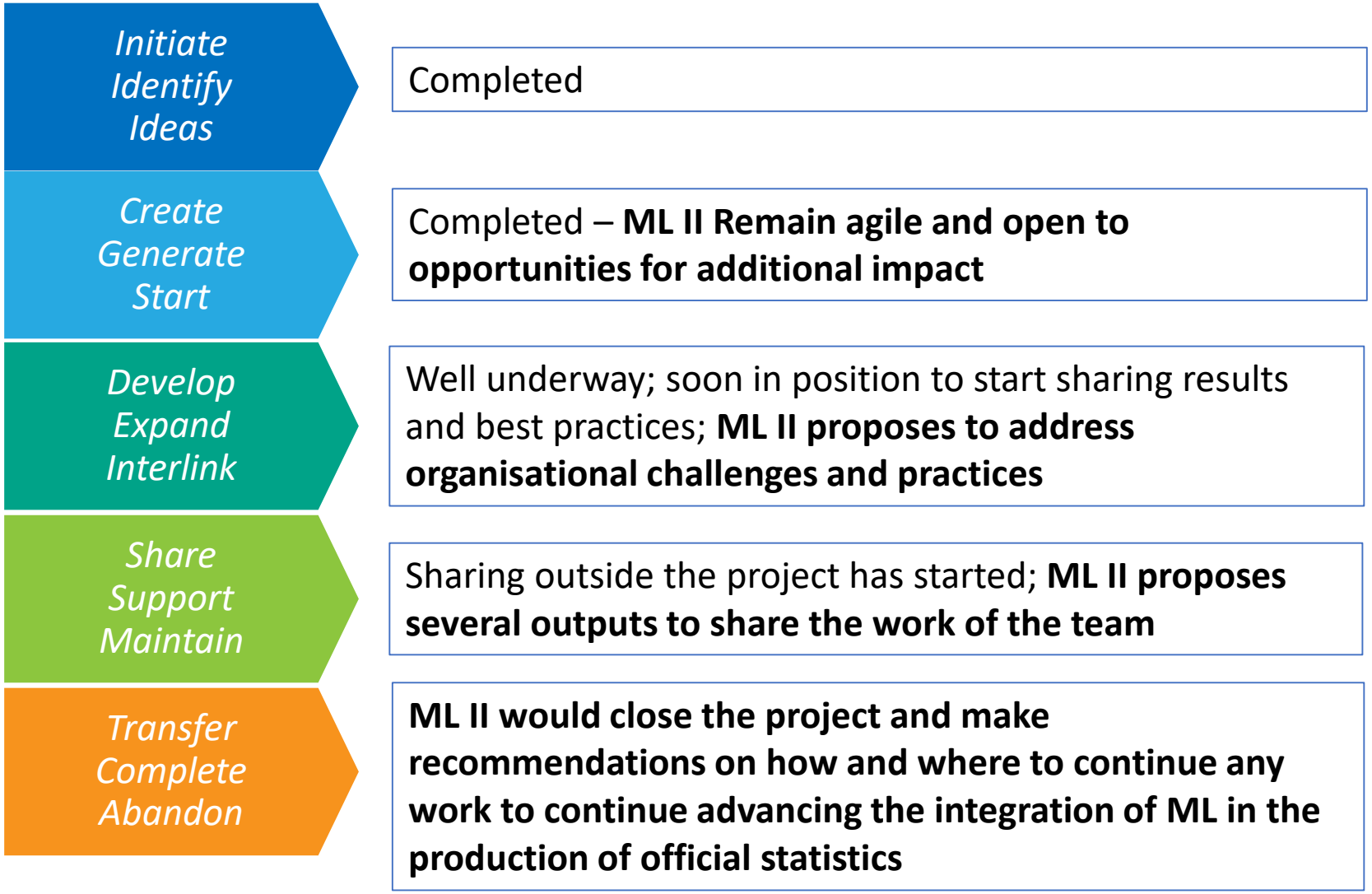
ML project overview



Integration of ML in organisations

- Some members concerned about risk of having ML solutions shelved
- Other members are looking into organisational models to bring together the multi-disciplinary expertise needed to integrate ML
- CES Seminar on access and use new data sources expressed similar needs
- ISI WSC 2019 session on “How to Create Innovative Environments to Harness Big Data in Official Statistics: Examples from Four National Statistical Institutes”
- Developing Organisational Capacity

Organisational challenges

- One of the recurring themes from the discussions at the sprints and monthly meetings is that **integrating machine learning into official statistics requires more than simply building machine learning systems**. In fact, a number of participants noted that they had already developed otherwise successful machine learning solutions, but had been unable to implement them into production processes because of a variety of **organizational and structural impediments** including uncertainty over who should be responsible for building, evaluating, and maintaining these **highly interdisciplinary systems**. Another comment observation is that in pursuing their pilot studies, team **members are finding out similar or complementary developments within their own organisations**.
- Existing work on numerous proof of concepts (PoCs) has shown that ML can add a great deal of value. However, the transition from a PoC or demo application to a ML solution embedded in the production of official statistics is another matter. **Too often have I heard that early promising results learned from PoCs have been shelved for a later day**. I propose to keep the momentum going and learn from how NSIs overcome blockers.
- From the perspective of my organization, this project was a very valuable exercise which has enabled us to come up with the solutions which might have not been developed so quickly without an external push. However, although the exercise have been completed and we can present the results, there is a big challenge of **how to actually proceed with the implementation and the risk of shelving is high**. So, at least from our perspective, **focusing on the implementation aspects is very desirable**. The implementation challenge is big indeed, as at this stage not only do we have to cope with methodological or scientific issues, but we have to **transfer our developments to our colleagues who work with traditional methods**, **reach the top management**, ensure appropriate technology, etc.
- Here in … we are **working on the concept of an institutionalized Data Science Group**. I was wondering if you could ask all the members of the HLG-MOS for any sort of documentation as to how their institutions started with these sort of teams/areas, ... I am sure … would greatly benefit from understanding similar cases so we can design a proper strategy.
- The groups can be requested to see if the following topics are covered and if not, be included in their work: (a) **Inventory of changes in organizational structures** to support incorporation of new data sources into the statistical process… (d) **How countries are bringing together different disciplines to solve problems** – IT, mathematics, statistics, economics

WP3 - Integration of ML in organisations

- In many organisations, most of the talent required to use ML is present or being acquired. The question the ML project proposes to address is how NSOs are organized to bring together this talent from defining the business needs to applying and maintaining ML solutions.
- The goal of this work package is to explore how different NSOs are organized to integrate ML in their production processes, and report on the different practices, sources of impediments and propose successful practices.

Project outputs in 2020

- Report on pilot studies and ML code (**FEB**)
- Synthesis of demonstrations, recommendations on use of ML and supporting reference documents (**APR**)
- Best practices in the development of ML, supporting quality framework and review of integration practices in organisations (**SEP**)
- Workshop/training material to share the work of the project, including a hands-on learning exercise (**NOV**)
- Project wrap-up and recommended next steps (**DEC**)
- Workshop/training delivery (**2021**)

Indications of success

- Delivery of the outputs
- Sustained or increased momentum to continue the work on integration of ML beyond the project
- Increased integration of ML in organisations

Thank you!

For further information:

ML project progress and proposal background paper

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