

Business Case for the ModernStats Carpentry

This business case was prepared by Kate Burnett-Isaacs (Statistics Canada) and Eric Anvar (OECD) and is submitted to the HLG-MOS for their approval; it draws on the Meta Academy initiative in 2021-22.

| Type of Activity | |
|--|---|
| <input type="checkbox"/> New project | <input checked="" type="checkbox"/> Extension of existing project |
| Purpose | |
| <p>The ModernStats Carpentries project draws from the lessons learned in the context of the 2022 Meta Academy project (see the short Annex explaining the main takeaways from the Meta Academy project, including a definition of the gaps and potential capabilities that would make for a Meta Academy, and how the Carpentries initiative is well positioned to support them).</p> <p>The purpose of the project is to pilot a partnership with the Carpentries organization to create the ModernStats Carpentry. The Carpentries are a non-profit organization, registered in the US, funded by membership and workshop fees, and grants from donors. Their vision is to be the “leading inclusive community teaching data and coding skills.” In order to engage¹ with the Carpentries, the HLG-MOS and/or member organizations will need to pay a membership fee; however, in the context of a ModernStats Carpentry, participating organisations could organise as many trainings as they wish (within national context or in the context of a cross-national initiative) at no fee; also, all Carpentries contents and training materials (data samples, codes, documents, etc.) are open and free under CC license, stored in the open Github platform, and can be reused at no cost. The Carpentries membership fee covers typically the following cost for the member organisation:</p> <ul style="list-style-type: none"> • A framework and support to develop training, • A methodology to train trainers and a certain volume of trainers trained per year, • Access to a community of 4000 certified trainers and maintainers (mainly from academia), to peer review training contents, exchange good practice, reuse existing content etc, • A platform to organise and coordinate training sessions. <p>The Carpentries business model addresses several of the needs identified in the Meta Academy project (see Annex) in the following ways:</p> <ol style="list-style-type: none"> (i) A common understanding of the training needs, a shared methodology or pedagogic approach to create learning content: The Carpentries have a standard Lesson Program Incubation model that covers these aspects, with an emphasis on the quality assurance of lessons, through an iterative approach (learn by doing) and based on experience gained with the other Carpentries initiatives; (ii) A forum or community for ‘academy managers’ or ‘trainers’: through the ‘Train the trainers’ programme, but also mentoring groups, the development of a consistently skilled network of trainers is at the heart of the Carpentries’ value proposition – to which should be added the existing network of 4000 trainers from all over the world. | |

¹ meaning: create a programme dedicated to modernisation of official statistics, train trainers, take part in training organised by other *Carpentries* organisation

- (iii) **A forum and method to ensure training content and delivery evolve with the industry:** through the community of trainers and maintainers that includes academia and industry partners, as well as the Carpentries requirement and methods to keep training up, ModernStat can efficiently and effectively be kept up to date.

Description of the project and the Work Packages/sub-activities

The Meta Academy project for 2023 will be split into two work packages.

The purpose of **work package 1** will be to put together the initial **ModernStats Carpentry Lesson Program** or curriculum. This work package will focus on repurposing existing Carpentries content for select key personas within statistical agencies as well as explore how to put traditional official stats course into the Carpentries framework. Under this umbrella, we will encourage member NSOs to take the Carpentries' Train the Trainer course, at their own expense, to undertake pilot training sessions and help evaluate the value of the Carpentries, and determine how best to turn Carpentries content into an official stats content.

Work package 2 will explore membership, collaboration and organizational models between the HLG-MOS and the Carpentries. Topics to be covered include membership with the Carpentries, procurement, administrative overhead, IP of content, legal aspects, etc. The goal of this work package is essentially to determine a cost effective and sustainable **business model for the HLG-MOS ModernStats Carpentry** and its members to benefit from the Carpentries model and products in the context of the HLG MOS existing governance and structures (especially, the Capabilities and Communication Group).

Deliverables and timeline

The main deliverable for **work package 1** will be a Lesson Program that will be submitted to the Carpentries organization for approval to become the ModernStats Carpentry. This lesson program will include:

1. A repurposing of existing Carpentries content for a NSO specific persona within statistical agencies.
2. This content will then be translated into French (and possibly other languages depending on participation) in order to demonstrate the international outreach and applicability of the Carpentries curriculum.
3. This work package will explore putting a traditional official stats course (like price indexes or GDP) into the Carpentries model.

The deliverable of **work package 2** is to determine a cost effective and sustainable business model for the HLG-MOS and its members to benefit from the Carpentries model and products in the HLG MOS context.

Offices/Countries committed

This project will be led by Statistics Canada and the OECD, in a fashion similar to the 2022 Meta Academy project. Members from the 2022 project are welcome to continue their participation; new members are warmly welcome to join in. Participating entities from the 2022 project include: Eurostat, Statistics Canada, OECD, Statistics Netherlands, Statistics Norway, Statistics Ireland, Bureau of Labour Statistics, Census Bureau, ISTAT and INEGI.

Alternatives considered

The main alternative considered would be to build ourselves (under the HLG-MOS) the platform and necessary frameworks to establish an international academy for official statistics. This method

approach would be very time consuming and costly. In addition, this method would be inefficient since we would need to develop frameworks that already exists as open, reusable assets.

How does it relate to the HLG-MOS vision and other activities under the HLG-MOS?

This project already has connections with the Capabilities and Communication Group, particularly the *Future of Work* project – of which a central pillar is the offering of development opportunities to staff. In addition, there has been a need highlighted at the Executive Board, to enable HLG-MOS groups and projects to develop capacity building opportunities – a general goal for the ModernStats initiative to which the ModernStats Carpentry would directly contribute. Beyond direct benefits in a national context (capacity to create or co-create more smoothly training; capacity to discover and reuse training content from other organisations), the project can also contribute to better interconnect with the academic world – heavily involved in the Carpentries initiative – as well as feed into a development agenda through cooperation with developing countries. This project can help agencies adopt a service-oriented approach and an agile adaptive culture to meet their own and their stakeholders and statistics users’ needs.

Proposed start and end dates

Start: February 2023

End: November 2023

During the first phase of the project (Feb-Jun), emphasis will be on work package 1 and experimentations with the Carpentries model (taking trainings, training trainers, possibly producing one pilot training).

During the second phase of the project, lessons learned from the experimentations should lead to the two strategic outputs:

- A proposal for the ModernStats Carpentry Lesson Program,
- A proposal for the ModernStats Carpentry business model.

Annex: short summary of the main takeaways from the 2021-22 Meta Academy project, leading to the ModernStats Carpentries project

The ModernStats Carpentries project draws from the lessons learnt in the context of the 2021-22 Meta Academy project (see [project home page](#), especially [benchmarking activities](#) under WP1). The latter project explored different training models across NSOs to understand the common challenges and highlight options for common approaches.

The Meta Academy project confirmed the opportunity for statistical offices to develop a common framework to co-create high quality training and reuse content at an international level: In the current state, significant barriers exist in that (i) there is no **common understanding of the training needs, and no shared methodology or pedagogic approach to create learning content**; (ii) there is no **forum or community for ‘academy managers’ or ‘trainers’** to exchange practices and learn from each other, share on priorities or decide to co-investment or mutualise training efforts in a particular area, (iii) this **affecting especially the capacity to catch up with a constantly evolving landscape** (technologies, emerging needs...). **The previous gaps give a broad definition of what “Meta Academy” capabilities** would cover, and what would constitute a common “framework” for statistical offices to join forces in removing barriers and, ultimately, unleashing the creation and use, at scale, of open digital assets to boost National Statistical Offices (NSOs) upskilling efforts necessary for modernization.

Several potential avenues emerged in this exploration of which we would like to point at critical ones:

1. **On the pedagogy:** some initiatives focus more on self-learning approach; others on synchronous learning experience with a coach (onsite or online). The two approaches are complementary, and self-learning can be an interesting foundation to make the most of synchronous engagement. However, it is recognised that, especially for more advanced skills, human engagement through collective time and coach-trainee relationship are essential.
2. **On the content:** some initiatives take a broad approach at covering all regular official statistics activities (including statistical standards); others are very much focused on data science or data intensive scientific activities – the latter including initiatives from the market or outside of the official statistics universe.
3. **On the audience:** some initiatives target a national audience (sometimes NSO or NSS only, sometimes targeting more broadly the public service) while others aim to grow an international network (especially, with a data for development agenda); multilingualism remains a difficulty for many.
4. **On the platform:** all initiatives crystallise around a digital platform through which training content and services are created and traded, a brand is promoted to unite a community of trainers and trainees.

The most promising avenue to explore, emerging from the Meta Academy project, is to develop a ModernStats Carpentry. By ‘promising’, we mean the scope of work that, among many possibilities, represent the optimal potential value for money by filling a clear shared gap (value), and yet making the most of existing initiatives (money). Indeed, the project would consist in piloting the adaptation to the official statistics context, of a concept already delivering value at a large scale in the academic context. By singling out this option, we suggest to concentrate our efforts on (1) synchronous learning (vs. self-learning), (2) data science type of skills (vs. official statistics and standards in general), (3) enabling NSOs to develop a national ecosystem of learning (vs. an international community of trainers / trainees, for example geared to development objectives) and (4) using an existing platform and method (piggybacking on the existing Carpentries platform and method would help minimise costs) but under the ModernStats branding and HLG-MOS governance. The previous assumptions do not entail absolute exclusion of scopes but give an idea of the priorities for the project – with the possibility to venture and spill over opportunistically where relevant in less prioritised areas of work.