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THE MEGAPROJECTS AT AALBORG UNIVERSITY: A REVIEW AND ASSESSMENT

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This article investigates the performance of Megaprojects, a joint initiative launched in 2019 by Aalborg University (AAU) in cooperation with Aalborg Municipality. Despite its steady growth, Megaprojects face numerous challenges and issues. To identify these concerns, two surveys and eleven in-depth interviews were conducted. One survey focused on students' (across five faculties) and the other on staff's opinion and motivation to participate in Megaprojects. Altogether, 267 usable survey responses were received. The in-depth interviews were conducted with the Megaproject manager at AAU, the Megaproject manager from Aalborg Municipality, one of the Megaproject founders, three coordinators of the Megaprojects and five academic staff members. The findings of this research were presented to the Megaproject management, AAU management, incl., vice-rector, deans, and academic staff, and Aalborg Municipality representatives. The article discusses key challenges and issues hindering the performance of Megaprojects and puts forward a number of actionable recommendations to enhance the performance of Megaprojects.

The Megaprojects at Aalborg University

AAU launched Megaprojects in 2019 in cooperation with the Aalborg Municipality with the aim to encourage the students to find creative solutions to some of today's challenging problems. This aim is achieved inter alia by encouraging interdisciplinary research towards the United Nations' 17 sustainable development goals (SDGs) across all AAU faculties or disciplines (*What is a megaproject, n.d.*). Problem Based Learning, that is the core pedagogical model at AAU and which AAU continuously makes efforts to optimize its ongoing development and adaptation to better meet the societal and educational demands and changes, also contributes to this aim. Since 2019, the Megaprojects have been gradually growing. Meanwhile, its performance has been hindered by series of challenges and issues, such as low student participation, insufficient awareness, cross-faculty culture differences, low participation or involvement of academic employees (e.g., as supervisors), having a significant impact on the students' motivation to participate in the Megaprojects.

Key Challenges & Issues within the Megaprojects

Awareness about Megaprojects emerged as one of the key concerns. The Megaproject management has been striving to raise awareness of the Megaprojects through multiple channels, mainly: Megaprojects conference, presentations at semester introductions, and Megaprojects website. According to the data from the students' survey, more than half of the respondents (60.7%) lacked a certain knowledge of the Megaprojects, e.g. what the Megaprojects is, how to participate in it and what the benefits are. For example, when testing the awareness of the students, those who responded that they have never heard of the Megaprojects were presented with the description of the Megaprojects concept from the website. Two-thirds (66.2%) of the respondents were not made aware that the concept is an extra-curricular activity. Participating in Megaprojects that is an extra-curricular activity, with no ECTS and assessment, the students only get a certificate acknowledging their participation. Data also shows that students were not aware of such recognition, although they were expecting to receive a recognition of some sort.

Data from the survey of academic employees also point to a lack of awareness of Megaprojects and its benefits among 24.8% of the respondents. As Megaprojects are set up as an extracurricular activity, academic staff participates in its activities on voluntary basis: it is not their work obligation, no resources (hours) allocated for it. In such case, participation of academic staff in Megaprojects depends on their personal interests, spare time and perceived benefits. Further interpretation of the survey and interview data highlighted the following three challenges and issues. Some deemed that the current version of the Megaproject is not a genuine interdisciplinary research. The others consider that Megaprojects concept as a good idea, but do not see how staff can benefit from it, arguing that it is only beneficial to the students.

The other main issue is with how the information about Megaprojects is communicated to students and staff. The survey and interview data shows that the main channel to reach the academic staff and students is through university-wide email system managed by the Megaproject management. The second most likely way to reach the target groups is outside of the control of the Megaproject management, e.g., the students receive the information about the Megaprojects during the semester introductions and staff through co-workers (word-of-mouth). As the intended information through these channels is not controlled, it mediated through opinionated personnel. Survey and interview data revealed that opinions about the Megaprojects are less than favourable. It emerges that insufficient awareness, acknowledgement and knowledge of the Megaproject lowers the chance of attracting potential participants, be it staff members or students.

To the above challenges and issues, data further points to a misalignment between Megaprojects and individual curricular learning goals. This misalignment is due to inter alia the extra-curricular nature of the Megaprojects, different cultures in setting the learning goals, timing of the start of a semester and project work. For example, prior to the student involvement, all challenges of the Megaprojects are designed and pre-determined by the Megaproject management. This makes the participants, students and supervisors, seek

connections between their disciplines, semester projects and the Megaprojects challenges that they may be unfamiliar with, or lack personal interests and insights towards. Furthermore, students are examined within their study programs, following their semester's learning objectives, while Megaprojects learning objectives are not accessed by anyone. In the end, students end up submitting separate projects instead of one coherent project. This approach prevents Megaprojects from becoming truly interdisciplinary.

All these issues and challenges highlight one of the recurring problems that emerged from the survey and interview data, namely lack of incentives. The majority of the respondents indicated that there are no good or enough incentives, if any incentives at all. Lack of incentives is translated into a need for 'resources', such as 'extra teaching hours'; 'opportunity for research and publication'; and formal 'acknowledgment' of the work and participation in Megaprojects. Such incentives are pivotal to keep Megaprojects concept 'alive' and attract staff members and students to jointly contribute to finding creative solutions to SDGs challenging problems.

Recommendations on how to manage the future growth of the Megaprojects

It is Megaprojects' management vision to see Megaprojects as a long-term strategy for AAU. This is based on the assumption that Megaprojects shall steadily grow not only in numbers of staff and student participation, but also in its impact. To achieve this, we put forward a set of recommendations to be considered by the Megaprojects management, namely to:

- Increase positive awareness of the Megaprojects
- Introduce a bottom-up approach to the development of Megaprojects challenges, thus stimulating genuine interest from students and their supervisors
- Develop and implement a long-term bold strategy

Brand awareness and reputation are critical to acquire participants, students and staff. The Megaprojects management has already been working hard to build and enhance the brand awareness

within each faculty. These efforts shall continue to further strengthen the knowledge about the benefits the reputation of the Megaprojects individually targeting students, academic employees (supervisors), and the university management. University e-mail is preferred way of dissemination and communication by the students (91.6%) and together with the Megaprojects website would contribute to a faster and wider dissemination and communication about the Megaprojects.

To facilitate a bottom-up approach to the design of Megaprojects challenges, the Megaprojects management could invite early in the process semester coordinators and supervisors from different departments and/or faculties to co-create a challenge. This approach would inter alia help stimulate interdisciplinary collaboration, establish an interdisciplinary research community at AAU, clear and coherent communication among Megaprojects participants. This way possible risks of unclear and mismatching communication or misunderstandings or lack of insight into the challenges will be mitigated.

As far as a long-term bold strategy for the sustainable development of the Megaprojects is concerned, the following recommendations are put forward (Figure 1):

- One, the Megaprojects shall be integrated into the AAU Institute of Advanced Studies in PBL (*Styregruppe for etablering af Institute for Advanced Study in PBL, n.d.*)
- Two, Megaprojects will become a 30 ECTS, interdisciplinary semester, offered to all AAU students, based on an inter-disciplinary curriculum (here are few examples for a such model: New Venture Creation semester (*New venture creation, n.d.*))
- Three, AAU students who desire to participate in the Megaprojects will take advantage fully of the internal, student mobility mechanisms (based on Bologna student mobility principles); this will inter alia contribute directly to the enhancement of human and financial resources needed to support Megaprojects as well as of harmonization of student-supervisor cooperation.

| IASPBL + Megaprojects | | | | | | | | | | | | | | | | |
|----------------------------------|-----------------------|-----------------|-----------------|-----------------|-----------------------|-----------------|-----------------|-----------------|-----------------------|-----------------|-----------------|-----------------|------------------------|-----------------|-----------------|-----------------|
| | 5. Semester (30 ECTS) | | | | 6. Semester (30 ECTS) | | | | 9. Semester (30 ECTS) | | | | 10. Semester (30 ECTS) | | | |
| ENG | 1 | 2 | 3 | n | 1 | 2 | 3 | n | 1 | 2 | 3 | n | 1 | 2 | 3 | n |
| TECH | 1 | 2 | 3 | n | 1 | 2 | 3 | n | 1 | 2 | 3 | n | 1 | 2 | 3 | n |
| SSH | 1 | 2 | 3 | n | 1 | 2 | 3 | n | 1 | 2 | 3 | n | 1 | 2 | 3 | n |
| SUND | 1 | 2 | 3 | n | 1 | 2 | 3 | n | 1 | 2 | 3 | n | 1 | 2 | 3 | n |
| | MP ₁ | MP ₂ | MP ₃ | MP _n | MP ₁ | MP ₂ | MP ₃ | MP _n | MP ₁ | MP ₂ | MP ₃ | MP _n | MP ₁ | MP ₂ | MP ₃ | MP _n |

Figure 1. Integration of Megaprojects into the Institute of Advance Study in PBL

Note: Four Megaprojects 30 ECTS semesters are suggested to be designed across all faculties as part of IASPBL, building on the 3 pointers discussed above. Within a semester, Megaprojects groups (e.g., MP1) will be formed of 1 (or 2) students from each faculty. With this framework, academic staff from various faculties will contribute to these semesters with teaching, supervision and assessment as well as with co-creation of Megaprojects challenges in a true inter-disciplinary manner.

To achieve the above-mentioned vision, we propose a roadmap (Figure 2). It was suggested that the preparations would have to start in 2021 and it would include the development of the AAU Megaprojects (AAUMGP) framework (Sep 2021 – Aug 2022). During this step, the Megaprojects will be fully integrated into IASPBL, the development

of 30 ECTS, cross-disciplinary semesters will start, taking into account teaching and learning activities, assessment, administrative set-up, finding resources, incl., financial and HR to administratively and academically support AAUMGP semesters, how MGP challenges will be defined, and initiate AAU-wide consultations. The next step would be to

gain the approval of the AAU Study Boards (Sep - Dec, 2022). From the beginning of 2023, AAUMGP semesters will be marketed to the AAU students as appropriate. AAUMGP management will develop, as part of marketing, a communication strategy and

campaign to raise awareness of the new 30 ECTS inter-disciplinary semesters among and attract as many as possible prospect students. The launch of the AAUMGP Semesters is set for Sep 2023.

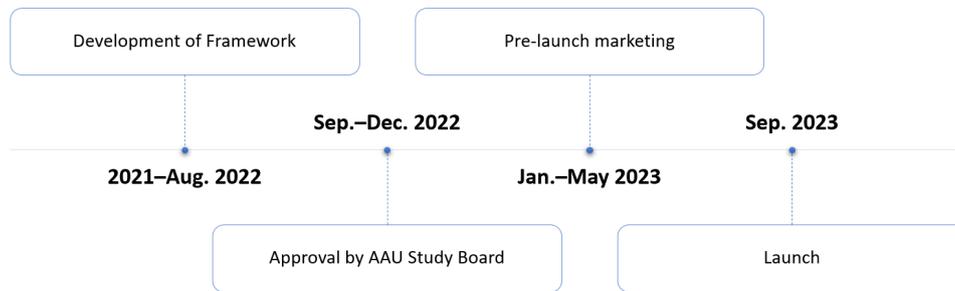


Figure 2: A roadmap to develop and implement a Megaprojects long-term bold strategy

Note: the reference point of the proposed dates in the roadmap is July 2021 when the roadmap was presented to the AAU, Mega-projects and Aalborg Municipality management

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