SPANNING BOUNDARIES

BETWEEN ACADEMIA + INDUSTRY

What are Spanning Boundaries Agents and why are they so important to the future of the knowledge society?

A research report as part of the
Spanning Boundaries Project

Executive Summary

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In 2020, we have seen just how much our cities, nations and even the whole world can be quickly confronted with immense health, social, and economic challenges. These disruptions demand quick and collaborative innovation to find answers and ensure sustainability not just of companies but entire economies. It is in challenging times like these that we witness how scientific and innovative minds come together and provide a shining beacon of hope. Indeed, university-business cooperation (UBC) drive radical innovation that benefit individuals and society at large. At the forefront of these collaborations, we saw the power of individual people coming together, united by a common goal and motivated to push through and past the looming uncertainties. This success has been built by and with so-called boundary spanners, that is, people who successfully bridge between the academic and industrial world and build networks, enable knowledge creation and transfer, and collaboratively create, manage, and implement innovative solutions.

These boundary spanners, defined in this report as individuals known for their success in breaking down silos both among internal units and across sectors in their external engagement for collaborative innovation, are crucial in driving innovation. According to the European Commission, boundary spanners draw upon a deep understanding of both the higher education institution (HEI) ecosystem and the industry reality and thereby are able to bridge sectorial and disciplinary silos. However, literature in the UBC context remains focused on the organizational actors or the ecosystem and misses an understanding of what makes the individual boundary spanner effective in their bridging endeavours between HEI, industry, and society.

The following report makes a first attempt to identify, define, and characterise the boundary spanners' (1) qualities, (2) skills, (3) knowledge, (4) roles, (5) activities and responsibilities and to identify spanning boundaries (6) barriers and drivers in the UBC context. This report is based on:

- A review of the boundary spanning literature in the UBC context,

- A large qualitative study on spanning boundaries champions from different European countries (40 interviews with spanning boundaries champions; 24 interviews with spanning boundaries experts) conducted in 2020, and

- A large quantitative survey on HEI, industry, and internal and external intermediary representatives (n=505) in 2020 working at the intersection between the different organisations.

The aim is to educate new cohorts of boundary spanners and to support existing ones to extend and further strengthen the collaborative initiatives that help us tackle the pressing challenges of today and tomorrow.

First, our findings highlight a variety of different qualities that can be summarised using the personality traits of the Big-5 and entrepreneurial traits (i.e., openness to experience, conscientiousness, extraversion, agreeableness, neuroticism, innovativeness, locus of control, risk attitude). We thus connect boundary spanner research to a rich research history and validated operationalisation on the topic of personality (e.g., Goldberg, 1990; John & Naumann, 2007a; John & Srivastava, 1999b; Kerr et al., 2017), which can be used to support the training of new cohorts of boundary spanners as well as to make existing boundary spanners aware of their traits and development potential. Specifically, our findings highlight that:

- Boundary spanners may differ from entrepreneurs in their focus on agree-

ableness, specifically their empathy and humility necessary to collaboratively build networks and innovation with others.

- Boundary spanners combine their different qualities situationally, which allows for a flexibility necessary to circumvent and push forward in the face of ambiguities and uncertainties, and to collaboratively solve complex problems.

Second, regarding a boundary spanner's skillset, our results show that all skills (i.e., creativity, entrepreneurial skills, mobilising resources, vision, complex-problem solving skills, collaborative skills, bridging skills, negotiation skills, leadership skills, managerial skills) were rated high (M>3.5) on importance. Thus, all skills can generally be regarded as important for the spanning boundaries activities and are relevant for building up and training boundary spanners. Specifically, our results show that:

- The highest mean rating was given to creativity skills (M=4.23) while the lowest mean rating was computed for leadership skills (M=3.88). This indicates that being a creative and original thinker and conceiving of alternative solutions for a new challenge are regarded as more important in boundary spanning activities.

- Respondents were further asked to indicate their perceived skill gap. The largest gaps are found in mobilising resources (0.66) and entrepreneurship skills (0.47).

Third, our results show that the aspects of knowledge and expertise were all rated relatively high in importance (except for expertise with a mean value of <3.5). This is to be expected, as the boundary spanner would effectively draw on a variety of knowledge and expertise to develop and build networks to create and transfer knowledge for collaborative innovation. On average, the mean importance of all aspects is M=3.79. Specifically, our results show that

- While knowing the aims and needs of the collaboration partners were regard-

ed as most important (M=4.33), field specific expertise was rated as the least important (M=3.48).

- Regarding the perceived knowledge gaps, the largest gaps exist in knowing the aims (0.64) and needs (0.59) of the collaboration partners.

Fourth, previous literature as well as our qualitative study indicated different roles of boundary spanners that relate to the activities, which the boundary spanners perform. Significant differences were identifiable regarding a boundary spanner's role and their need and gaps concerning skills and knowledge. Based on our findings and results, we propose to differentiate between three different types of boundary spanners:

- Boundary spanning facilitators who show a tendency to build and maintain networks. They help to initiate boundaries, support the collaboration throughout the process, and maintain it in the long-term.

- Boundary spanning collaborators who are less involved in setting up and maintaining the network but aim at creating content and sharing it with others. The collaborator is highly involved in knowledge creation activities and less often involved in facilitation activities.

- Boundary spanning enactors who engage in initiating, collaborating, and supporting the collaboration. Enactors span the entire process and overlap strongly with the spanning boundaries facilitator as well as with the collaborator.

Fifth, regarding the boundary spanner's activities, the majority of our respondents often or always engage in building and maintaining networks (67%), which is consistent with our definition of a boundary spanner as someone who initiates, supports, and sustains collaboration. In addition, we further define a boundary spanner as someone who engages in the collaboration, which may be reflected in the activity of facilitating continuous interaction and communication (62%), creating, transferring, and translating knowl-

edge (60%) as well as aligning and managing interests (51%). Interestingly, fewer respondents were often or always involved in managing academic and student mobility (23%). In addition, and consistent across the different spanning boundaries champions interviews, people described that they were engaging in initiating and collaborating that was simultaneous to supporting the collaboration and followed by sustaining the relationships. The process was described as iterative and dynamically shaped by and shaping the different actors and context conditions (individual / organisational / environmental) involved.

Sixth, within the process of initiating, collaborating, supporting, and sustaining collaborations, the boundary spanner is faced with influencing forces (i.e., drivers and barriers) that shape the boundary spanning process and that are – in turn – shaped by the process (Garud, 1994; Groen, 2005). As network building involves the interaction between multiple aggregational levels, that is, the micro-, meso-, and macro environment, these co-evolving patterns may drive or hinder the spanning boundaries journey over time. Our findings show that these barriers and drivers can be clustered into four dimensions of entrepreneurial networking (Groen, 2005), that is,

- **Scope,** which relates to the strategic goals and capital of the person involved in the spanning boundaries activity,

- **Scale,** which relates to economic optimisation and capital,

- **Skill and value,** which relates to institutions and pattern maintenance and cultural and human capital,

- **Social network,** which directly relates to the interaction patterns and involves the role of social capital.

Seventh, we see that the barriers and drivers largely exist within the immediate environment of the collaboration initiatives of the boundary spanner and may exist within or between the different organisations. Yet,

circumventing these barriers lies within the boundary spanner's set of competencies, that is, the qualities, knowledge, and skills, and involves a sensibility to one's own as well as others' competencies, an understanding of wants and needs and aims and priorities, an ability to craft out the overlapping motivations and goals and to deliver on these, despite continuously arising issues along the collaborative journey. Based on the previous insights, this report proposes a process model that brings together the multiple levels, their interaction, the different activities, as well as the role of the individual's competencies and influencing factors driving and shaping the spanning boundaries process over time.

Concluding, this report articulates a comprehensive picture of the boundary spanner as the individual that engages in spanning boundaries between HEI, industry, and society. This individual draws on a set of qualities, knowledge, and skills that allow to initiate the collaboration, engage in collaboration for joint development and innovation, support collaborative activities, and / or engage in sustaining the network for further collaboration in a successful manner. Indeed, by specifying the differences within the activities, our research further identified three different roles (the facilitator / the collaborator / the enactor) that are all equally relevant for spanning boundaries, yet, give different importance to the different competencies. As such, the boundary spanner's set of competencies allows for a highly situational, flexible manoeuvring of the spanning boundaries journey, which involves pitfalls and dead ends that can be circumvented and drivers that can be used to ensure successful collaborative innovation initiatives.

Access the report in full here.

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