OVERLAPPING LOGICS AND INSTITUTIONAL ALIGNMENT SPACES: MAPPING THE ORGANISATIONAL TRAJECTORY OF AN IS INNOVATION

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OVERLAPPING LOGICS AND INSTITUTIONAL ALIGNMENT SPACES: MAPPING THE ORGANISATIONAL TRAJECTORY OF AN IS INNOVATION

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Abstract

Institutional IS research focuses on explaining IS adoption depending on its alignment with a set of coherent institutional pressures. In contrast, institutional logics research emphasises the institutional complex and contested nature of most organisational contexts where multiple and often divergent institutional logics interact to shape organisational action. Adopting an institutional logic perspective and relying on an in-depth case study of the development and implementation of a student led visualisation tool to display course information in a large European university, this study examines the trajectory of the IS innovation across an institutional complex organisational landscape. The success of the innovation is explained by its ability to change over time and spaces, both in content and process, as the innovation actors sense alignment spaces where multiple logics overlap, and negotiate between these different logics by inscribing the IS innovation with specific practices reflecting the demands imposed by these changing alignments, and materially reflected in features of the IS innovation. The concept of alignment spaces provides a powerful tool for IS researchers to aid the examination of IS implementation in institutionally plural context, and consider not only time but also the landscape as important in understanding the progression of IS innovation over time.

Keywords: institutional logics, IS innovations, IS trajectory.

1 Introduction

How can we explain the development, implementation and use of IS within an increasingly complex and multifaceted organizational context? There is a wide tradition in institutional research on IS to explain the role that the context plays in shaping the development, implementation and use of IS through considering the alignment between the IS and the dominant institutional logic within the context in which the system is embedded exemplified by a combination of coercive, mimetic and normative pressures (for a review see Mignerat and Rivard, 2009). As modern organizational environments become more complex and fragmented (Pache and Santos, 2010) and the prevalence of organizations that aggregate multiple and often divergent institutional logics increases (Battilana and Dorado, 2010) it becomes important to examine how IS innovations happen within such hybrid organizations. Adopting an institutional logic perspective, this paper sets out to investigate the trajectory of a IS innovation within an institutionally hybrid organization. The findings indicate that as IS travels through the organization, it encounters changing configurations of norms, values and expectations prevailing at different times and in different organizational spaces. The success of the IS innovation in navigating this plural institutional terrain is explained by its ability to change over time and spaces, both in content and process, as developers, users and other stakeholders sense alignment spaces with the institutional context where multiple logics overlap and negotiate between these different logics by inscribing the IS innovation with specific practices reflecting the demands imposed by these changing alignments, and materially reflected in features of the IS innovation. The alignment spaces concept allows the research both to examine how a IS innovation evolves over time through the blending of inscribed practices as actors navigate across multiple alignment spaces that emerge through the overlapping of the varied
configurations of institutional logics characterizing the organizational context in which the IS is designed, developed, implemented and used.

2 Institutional research and IS innovation

Institutional theory conceptualizes organizational behaviour as the product of ideas, values and beliefs that characterize the environment in which organizations operate (DiMaggio and Powell, 1983). Organizational survival thus depends on their ability to align their practices with the norms, values and beliefs that are dominant within their environment (Meyer and Rowan, 1977). These norms, values and beliefs are embodiments of institutional forces that operate along different dimensions, e.g. regulatory, normative and cognitive (Scott, 1995). Although the existence of multiple and conflicting norms, values and beliefs was recognized since the 1970s (Meyer and Rowan, 1977), most of the subsequent institutional research, and its application to IS assumed the presence of a dominant logic characterizing a particular institutional field and manifesting through a coherent set of institutional pressures. Such research emphasized isomorphism through structural alignment, largely following DiMaggio and Powell’s (1983) seminar research on institutional pressures, explaining the success of IS implementation and use based on its alignment to a set of coherent institutional pressures that characterize the context in which the IS is embedded (see Mignerat and Rivard, 2009). Evidence was however mounting that organizations operate in complex environments where they are exposed to multiple and often conflicting institutional demands (Pache and Santos, 2010). Conflicting institutional demands call into question the ability of innovation actors to align the innovation successfully with its institutional environment (Currie and Guah, 2007) leading to its abandonment (Bunduchi et al., 2015).

The institutional logics approach was developed in the past decade and a half to refine this institutional understanding of organizational behaviour by highlighting that organisational environments are populated by multiple institutional logics. Institutional logics reflect both the content and the meaning of institutions and are “the socially constructed, historical patterns of cultural symbols and material practices, including assumptions, values, and beliefs, by which individuals and organizations provide meaning to their daily activity, organize time and space and reproduce their lives and experiences” (Thornton et al., 2012, pg. 2). Multiple logics embedding different values and norms, providing different source of identity and authority, and manifesting through different organizational practices inhibit the same setting. For example, within a health care context, Ruef and Scott (1998) identify technical logics considering normative support for staff qualifications and quality assurance mechanisms and managerial logics concerned with accounting practices and rules of conduct for administrative staff, while Reay and Hinnings (2009) document the differences in how the business logics and the medical professionalism logics organize behaviour. Research identified multiple institutional logics across different sectors including market, bureaucracy, professional, state, religious and community logics (Thornton et al., 2012). These logics both constrain and are shaped by the actions of organizational actors as they engage in practices which may reinforce, alter or abandon altogether certain logics. In recent years, institutional research has thus moved from examining how organizational structures are shaped by conformity to institutional demands, to explore how multiple institutional logics shape individual and organizational action (Thornton et al., 2012).

Similarly, institutional logics lens has only recently been deployed in IS institutional research to explore IS innovation in contexts characterized by heighten institutional complexity. Institutional logics lens has been useful in examining the conflictual, emergent and dialectical nature of the process of IS design, implementation and use reflecting the interplay between alternative institutional logics over time (Hayes and Rajao, 2011), and its role in inadvertently triggering organizational change through providing the occasion for unearthing latent tensions between competing logics in hybrid organizations (Mangan and Kelly, 2009). Organizations may attempt to cope with these latent tensions through loosely coupling elements of their practices with the different institutional logics present during IS use (Berente and Yoo, 2012), or through developing multiple organizational visions that align with specific configurations of logics present during IS implementation (Bunduchi et al., 2015). At a conceptual level, Seidel and Berente (2013) explain how the variegated institutional environment interacts with
the local, idiosyncratic interpretations and use of IT through relying on the concept of affordances which they use to describe the possibilities for action with technology within a particular organizational context as actors draw from a particular logic. Research has also examined how organizations can transition from one logic to another during IS implementation and use. Focusing on the development, implementation and use of visualization boards, Hultin and Mahrin (2014) use the concept of emulsification to explain how technology adopted based on one logic becomes entangled with practice, shaping the actors’ focus of attention towards a second logic leading to the enactment of new practice. In the context of IT outsourcing decisions during IS implementation, Mola and Carugati (2012) find that organizations can change from a dominant logic of localism to a logic of market efficiency through specific hiring practices and the development of organizational wide IT management competencies.

Building upon this research, we examine how multiple institutional logics shape not only the outcome of the IS innovation process (success or failure) and its use, but the entire trajectory of IS innovation from development to implementation and use. The research focuses on a particular type of plural institutional context: a structural differentiated hybrid. Empirical analysis of hybrid organizations tends to focus on blended hybrids which blend practices from different logics (Binder, 2007; Pache and Santos, 2011; Smets et al., 2012). In contrast, empirical analysis of structurally differentiated hybrids that contain different logics into different parts of the organization is relatively scarce (Greenwood et al., 2011, for an exception see Reay and Hinings, 2009). Our research question is thus: How do IS innovation succeed to be developed, implemented and used in plural organizational contexts characterized by multiple and often conflicting institutional logics? The research draws from the institutional logics lens to map the trajectory of a successful IS innovation both in terms of its process (covering development, implementation and use) and its content (features and functionalities).

3 Research Design

The research is exploratory and follows an interpretative research design (Walsham, 1995) with a single instrumental case study (Stake, 1995) of a IS innovation. The focus on exploring the context (the institutional logics) in which the IS innovation was developed and implemented, and its role in shaping the trajectory of the IS innovation explains the choice of an interpretative approach (conform Walsham, 1993). The need to access rich data on the perceptions of various stakeholders involved in the development, implementation and use of the IS innovation accounts for the selection of the instrumental case study method (conform Yin, 2003).

3.1 Research setting

The case involves the development, implementation and use of a new student led IS in a large European university. The IS, TRACK, is a corporate wide service implemented across the entire university which displays course and degree information. TRACK was originally envisaged as a way of providing existing students with a better tool to visualize and experiment with different course combinations for different tracks through a degree, and thus allowing them to make their course options.

The selection of the innovation was based on two criteria (1) complexity of IS context and (2) the perception of IS success. First, the high education sector, similarly with other professional sectors, is characterized by strong tensions among the traditional professional excellence through research and teaching, the increase in corporatism managerialism (Deem et al., 2007), and the pressing market demands to consider research and student rankings (Wende, 2008), with universities being typically organised as structurally differentiated hybrids, dealing with the multiplicity of logics by compartmentalising them in different units (Greendwood et al., 2011). The university under study is one of the largest university in the country, with a strong global reputation for teaching and research excellence. The university comprises over 20 schools organized across three colleges, employing over 13000 people. The university’s IS department employs over 1000 employees split between the central information services (CIS) department, responsible for all corporate IS development, and the student services (SS) department, responsible for delivering all student facing IT services. The university thus
combines research, teaching, market, corporate logics with strong IS professional demands (see Greenwood et al., 2011).

Second, the IS system itself is highly successful, in terms of the speed and extent of adoption and its outcome. TRACK begun in 2011, developed by a student in the School of Math with the support of a high level academic [Stage 1]. From May – Nov 2012 the project gained funding from the national student association and the head of CIS. This funding allowed the student to bring in another student developer and to roll out of the system within the School of Math [Stage 2]. As the two students graduated in May 2013, they were employed by CIS to pilot the system to two further schools. A Board senior management from CIS, SS and the principal office was set up to supervise the pilot. By August 2013, TRACK was rolled out to the three schools, and by November 2013 the students finished working on rebuilding the system for wider development on the assumption that funding will be secured for roll out across the university [Stage 3]. Following the success of the pilot, in April 2014 TRACK was taken on by the SS department as a corporate service, and the two developers joined the CIS team dedicated to SS developments. In August 2014, TRACK became available to all existing students (years 2-4), and formally adopted by over half of the Schools within the university, and in September 2014 opened to new students (year 1) [Stage 4]. By June 2015 all schools bar two whose degrees include no option courses formally adopted the system. TRACK’s evolution from pilot to corporate deployment was extremely fast comparing to a typical corporate system.

TRACK generated significant value both for users (students and academics) and for the university. Comparing with the existing degree regulation and course information display system, TRACK’s modern design, interactive features and user friendly interface enabled much easier access to information, facilitating users’ ability to choose courses (students), to provide student support (academic student advisors), and to update course information (academic lecturers). Moreover, TRACK’s mass adoption incentivized Schools’ to revise their degree and course descriptors, enabling the university to comply with government requirements for student focused degree descriptors. The combination of these benefits: empowerment for students, better student support and up to date course information was expected to increase student satisfaction, and consequently the university’s position in the national student evaluations. More broadly, TRACK’s mass uptake by users, and the external recognition through a national award for excellence enabled the university to portray TRACK as a successful exemplar of a student led innovation, and arouse discussions within IS&SS departments to change software development process to create space for experimentation, to consider design and usability, and to engage with students. These discussions encourage experimentations with other forms of supporting student led innovations such as student ideas competitions, collaboration with student hackatons, and other efforts to formally include student led innovations within the typical IS corporate processes.

3.2 Data collection and analysis

Primary data involved semi structured interviews with thirteen respondents involved in the development, implementation and use of the system including the two student developers, two senior management academic champions of the system, four senior representatives of CIS department, two senior representatives of SS department, two academic users within two different Schools, and one administrative staff involved in deploying TRACK with new students. The interviews were conducted in May-June 2015 and lasted between 2 hours and 20 minutes. The interviews were transcribed, and the transcriptions were sent back to respondents for verification. The students’ perspective on using TRACK was gathered through secondary data, relying on surveys that were conducted during the deployment of TRACK to gather student feedback following the pilot in 2014. Further secondary data involving extensive project documentation covering the entire duration of the project from 2012-2015 was used to triangulate the interview data.

Data analysis began with descriptive codes as soon as the first interviews were transcribed, and was done inductively, seeking to closely reflect the data, by using the respondents language as faithfully as possible. This stage led to the identification of over 600 descriptive codes. These descriptive codes were first organized into 18 different categories, including adoption, approach to development, con-
cerns raised regarding the system, content of the system, context of development and content of use, development, drivers, outcomes, perspective, promotion of the system, reception, requirements of different stakeholders, resistance, serendipity, support, use of the system, value and reasons for success each with different subcategories. These categories formed the early interpretative codes. At this point the focus was on interpreting the data to search for relationships and patterns, and facilitate the next stage, pattern coding to identify the final themes. Although depicted here in a linear fashion, coding was highly iterative, moving between coding, looking for meanings in the data, writing narratives and revisiting the literature. These iterations allowed us to identify a key pattern: shifts in the innovation relate to positioning across different combinations of institutional logics. The analysis then moved back to re-code the data around institutional logics and changes in the IS innovation features. This re-coding led to the identification of three broad thematic domains: innovation domain, reflecting the innovation content and process and including most of the content, adoption, development and use early interpretative codes; the institutional landscape domain, reflecting the institutional logics and alignment spaces, including the context codes and the action related codes such as resistance and support; and the outcome domain, reflecting the perception of value by the different categories of stakeholders, and including mostly the original outcome categories. This paper examines the first two domains.

4 Case Analysis

The case analysis identified four themes across two domains: the institutional context domain characterized by multiple institutional logics overlapping across different alignment spaces; and the IT innovation domain, characterized by shifting features which change as the innovation moves across alignment spaces over time, and pivot features which remain unchanged and represent the core elements of the IT innovation that allow it to pivot from one alignment space into another.

4.1 Pivot features of IS innovation

Two characteristics of the IS innovation remained constant throughout its organisational trajectory: a user centric approach and a focus on students above all other users. These constant features enabled the innovation to develop a strong position within the university as a user and student focus initiative which provided a stable basis as significant changes took place in other parts of the innovation.

4.1.1 User centric approach

User led focus on solving a genuine user problem. As students, developers had a deep knowledge of the context of use enabling them to focus their efforts throughout development on solving a genuine problem: poor understanding of course information and degree rules which hampers students’ ability to choose courses, and fulfill their university degree. Their user identifies thus justifies the developers unabated focus on prioritising usability. The need to consider usability drove most technical choices (e.g. programming language) throughout TRACK development, through for example incorporating interactive functionalities such as the dynamic program builder, using visual displays to facilitate understanding of information, and relying on a modern design that aligned with the designs of digital systems that a typical student would use outside the university environment.

Seeking and responding to users’ feedback during development and implementation. The two student developers sought and addressed users’ feedback during the early stages (Stage 1-2) by seeking their colleagues’ (other students) feedback, and later as they become less knowledgeable of the context of use as TRACK became used beyond their own School (Stage 3 onwards). The team was highly responsive to users’ feedback which was promptly evaluated and often incorporated into the system. Such prompt responsiveness to user feedback allowed the team both to improve the content of the system, and to gain the support from users who are more likely to commit to a system which they can actively and immediately shape.

Giving control to users during use. A key element of the student developers’ vision for TRACK involved empowering users. The system included functionalities that allowed contribution from its us-
ers, such as student feedback on courses and lecturers updates to course description. End users, whether students or personal tutors depending on Schools, can also moderate student reviews. TRACK development involved a modular design which allowed functionalities to be switched on and off enabling Schools to control its implementation. This user centric approach which empowers users not only to shape development, but also to control the system’s use is novel within the organization and more widely within the sector, going well beyond current efforts to alter existing development process through improving understanding of the user (student surveys), engaging the users (seeking student feedback on developments), and even seeking novel ideas through engaging users (sponsoring student led initiatives). Student centric approach

Students led system. A defining feature of TRACK is its student centric nature, with a number of features which focus specifically on empowering existing students above all other users. These features include: (i) the visualisation of pathways without personal tutor assistance, allowing students to make course decisions by themselves; (ii) the student feedback functionality to provide course reviews allowing the students’ voice to be heard and to shape other students’ choices; (iii) naming students as moderators for student feedback; and (iv) incorporating the student feedback functionality within a corporate system which is formally used by the university, thus making student feedback officially part of the university.

4.2 Shifting features of the IS innovation

TRACK’s success depends on the ability of innovator actors to change elements of both its content and the process involved to adapt to shifts in the institutional context as the innovation progressed from a student idea to a full corporate service. These shifting features include a gradual organizational and technical embeddedness of the IT innovation within the organization, and a gradual narrowing down in the scope for radical features and functionalities of the system.

Organizational embeddedness refers to the process through which both the student development team and development process itself become part of the IS team and the normal IS and organizational wide process and practices. Organisational embeddedness manifests in the changes in the degree of control developers had over funding allocation and in the opportunities for improvisation and bricolage that this control allowed.

Strong high level commitment to TRACK at stage 2&3 provided dedicated funding enabling TRACK development to take place outside typical IS procedures. Dedicated funding removed the need to consider funding requirements and university priorities during the early stages of development. Moreover, their user identity meant developers did not have to rely on a corporate client to identify business requirements. Dedicated funding and lack of corporate clients throughout Stages 1-3 meant developers were in sole control of development choices, with the freedom to experiment with functionalities to implement driven solely by their vision for a user and student centric system. Early stage development involved the convergence of planning with execution, a clear vision and an emphasis on rapid experimentation and scaling up. The developers acted as bricoleurs, finding creative workarounds within organizational rules, such as working behind the scenes to rebuild the system (Stage 3) despite the corporate mandate to focus on functionalities and scaling up. Typical CIS organizational constrains on development such as funding cycles, and the need to negotiate funding in university set committees and to match varied stakeholders’ priorities, became apparent only at Stage 4 as development was brought back in line with CIS processes and practices and developers lost both their control over funding allocation and the space for improvisation outside the organizational constraints.

Technical embeddedness refers to the process through which the system becomes part of the hierarchy of organizational IS. Technical embeddedness is manifested in the changes in the degree of technical control developers had over data input, technical choices and system support during system development and the diminishing need for improvisation and bricolage that this changes in control required from developers.

During Stage1-2, developers were not being restricted by, nor were they being made aware of the technical requirements that constrain corporate IS development, such as the need to account for user
accessibility (only at Stage 3), and to abide by university supported programming languages and infrastructure to ensure system resilience (only at Stage 4). This technical isolation from corporate systems gave developers full control over all technical choices such as what programming language to use without the need to consider interoperability with the technical infrastructure, but at the expense of having access to any to technical resources that are taken for granted in CIS development such us integration with existing systems, access to corporate data and CIS support, technical knowledge of corporate CIS development, and pertinent knowledge of the wider context such as university degree rules. Lack of access to existing technical resources forced the team to adopt a frugal approach to development. Developers acted as bricoleurs, engaging in creative bundling of available resources, such as using their personal networks to access students to provide feedback on courses to support the student feedback functionality. The team also acted as improvisors, through drawing upon available resources they had for development: their own time, through taking on system support for example by manually imputing all the data, and answering help desk calls from users; and the administrative support within the Schools, which extracted in spreadsheets the course data from existing systems.

From Stage 3 onwards, as the system gradually becomes embedded in the corporate technical infrastructure, the pressures to abide by the corporate technical constrains erodes developers’ control. For example, at Stage 4 the CIS department brings in other developers to support future system development, diluting the original developers’ control over development choices. At Stage 3, to enable system support and maintenance, IS department gives TRACK access existing IS systems to support automated upload of data, while at Stage 4 it moves support to the CIS support team. These choices transform TRACK student developers into corporate professional software developers who focus exclusively on software development working simultaneously on multiple projects. Splitting developers’ attention between different projects further dilutes their control over TRACK. At the same time, wider access to technical resources eliminates the technical constraints that encouraged bricolage and improvisation: manual input and direct support is replaced with automatic input and relying on CIS support team, the use of personal networks to provide student reviews is replaced with integration with existing student feedback systems and the manual crafting of application is replaced with more robust and resilient approach in line with university technical standards.

The scope for investing in developing radical functionalities and features narrowed down significantly over time due to the trade-off between investments in features and scaling up versus investments in robustness and maintenance that changes over time, and the increased in the variety of actors’ interests in shaping development decisions also changed with time

First, organizational isolation and the need persuade Schools to buy in to the system before the project’s IS dedicated funding runs out drove developers (from Stage 1); the IS champion (from Stage 2) and the senior university manager involved in the supervisory Board (from Stage 3) to focus on adding new functionalities and scaling it up fast, rather than consider long term resilience and support. A flurry of new value-adding functionalities were developed ranging from the dynamic program builder to the student feedback. In contrast, CIS development work is client driven, requires prior corporate approval and prioritizes large scale developments. With some certitude that the developed software will be used on a large scale, developers are required to consider issues of sustainability and robustness from the outset. TRACK’s focus on developing radical functionalities which are then quickly tested through use is thus intrinsically related to the frugality (lack of resources) and incertitude (whether the system will succeed beyond the original School) characterizing TRACK development. As TRACK becomes a corporate system at Stage 4, with the associated expectation for long term and wise user base support, development focuses on improving the accessibility of the system in line with university standards, supporting the transition to the corporate supported programming language, improvement of performance error handling to support a large user base, and documentation building to enable support as system support moves to the dedicated CIS support team. Gradually, the scope for prioritizing functionalities development over robustness and long term support work narrows down.

Second, the variety of interests shaping development also increases with time narrowing down the scope of development to incremental and non-controversial features that are likely to gain agreement. At Stages1-2, development efforts were driven exclusively by the two developers’ vision to improve
students’ understanding of course information. Enjoying dedicated funding and full control over development, developers were free to experiment with radical functionalities, such as the student feedback functionality. As development progressed, the number of actors shaping development increased first through the setting up of a supervisory Board at Stage 3, and then through moving to the typical IS funding approval university committee based process including varied university stakeholders from Stage 4 onwards, narrowing down the scope for radical developments. For example, a novel functionality to rank course options depending on student popularity in past years was controversial as many academics across different Schools considered that it would bias students’ choices towards popular courses, and thus unlikely to gain sufficient support within the diverse university funding committee. In contrast, the expansion of TRACK functionalities to student advisors which was an incremental improvement in existing functionalities to support for example, email communication between students and their advisors, which was a process for which TRACK was already used widely by Schools, was prioritized for further development.

4.3 Operating institutional logics

The institutional domain is characterized by multiple practices, assumptions, norms and rules to form part of different institutional logics. The analysis reveals five types of logics that shaped both TRACK and its development, implementation and use with varying degrees of intensity, at different times and in different spaces within the organization. These logics are espoused by multiple respondents. The user developers aligned at different times with the market, teaching and IS professional logic, the research and teaching logic was often simultaneously present for the academic respondents, the corporate and IS professional logics was competing for attention in shaping IS & SS respondents’ practices, while the senior management champions of the innovation oscillated between the teaching, the market and the corporate logic. Through following different rules and conventions, each logic focuses the attention of innovation actors on different practices with varying degree of intensity at different times during the trajectory of the innovation.

The market logic shapes actors’ perceptions of the university as a service provider. The logic thus directs students and government’s expectations of university education to focus on addressing students’ demands by providing students with a set of skills adequate to enable either students’ mission fulfillment, or their employability upon graduation. Within the university, this logic generates practices that encourage university responsiveness to changes in student demands and expectations, the development of student and employee skills focused course descriptors, and a strong focus on usability during the development of new student facing systems. Consistent with this logic, students are seen as knowledgeable and capable of making their own decisions, thus leading actors to engage in actions that focus on empowering students to make their own choices, and to provide and moderate their own course feedback.

According to the teaching logics, the university is a place of learning, and academics’ role is to of educate students, not to serve customers. This logic encourages responsiveness to student demands not to address their demands, but because student engagement improves learning. Within the university, this logic generates practices that focus on seeking students’ participation and feedback to improve their learning, and on developing student focused course descriptors that facilitate their understanding of course material, and inform their course decisions. Students are seen as learners, not as customers, and this learning process is to be guided by academics. Students are not trusted to possess yet the required knowledge and experience neither to make course choices on their own (hence the concern for deploying the system to bias students’ choices), nor to decide what is appropriate feedback on teaching. Academics thus maintain control over decision making, for example in guiding student choices, and in moderating student feedback.

IS logics emphasize the role of IS developer as a professional service provider. This logic focuses IS professionals’ attention on the quality of IS development process to eliminate some of the corporate constraints that the corporation impose on the development work and introduce a degree of freedom and creativity into the work. This logic explains the adoption of novel methodologies, such as agile
development, to resolve some of the IS process related problems and to seek solutions to some of the structural problems, e.g. bringing developers closer to the clients without relinquishing control to nor providing a real space for direct end user engagement. For example, in an effort to develop a closer understanding of users, the IS solution is to develop an IS-SS partnership that brings developers closer to the SS business analysis, rather than seeking to engage directly with the end users. Business analysts, another category of IS professional, are expected to deliver the end user perspective to the development process. Professional developers are seen as possessing the required expertise to develop legitimate corporate products that have to be deployed at scale, and to emphasize robustness and scalability from the outset of IS development, rather than focus on functionality development.

The corporate logic is concerned with developing the scale and scope of the university. The logics focuses actors’ attentions on the need for efficiency and effectiveness management of a large organization, which is achieved through a focus on processes rather than goals. The logic explains the actors’ emphasis on processes such as setting up management committees to approve work and control resource distribution through negotiation across many internal stakeholders. For IS developers, the result is a focus on the development process, for example through creating an audit trail to ensure accountability, rather than on the outcome of this process. This focus on processes explains the efforts to embed the innovation in the existing organizational and technical corporate processes during the latter stages, and the university efforts following TRACK’S success to develop a generic process to support student led innovation as part of the standard suite of corporate processes. This student led innovation process would allow the university to build a reputation for student engagement.

Finally, although a dominant operating logic within the university, the research logic appears only superficially to influence TRACK development. Research logic focuses academics’ attention on creating and protecting their research time. Research prowess is widely perceived to determine both hiring decision and promotion applications. Consequently, research active academics would tend to prioritize research over other activities, including teaching and administration. This prioritisation reflects in the emphasis on limiting the time spend during advising meetings to the university prescribed time interval. Student advisors’ positive reaction to TRACK can be explained by its ability to facilitate student advising meetings by reducing the complexity involved in searching for, checking and selecting course options. This resulted not only in better student support (according to the teaching expectations), but also in less time spent on providing student support.

4.4 Alignment spaces

The intensity of prevalent institutional logics varies widely across spaces (different units) and times (different stages) so that at different occasions during its trajectory, TRACK may occupy different configurations of overlapping logics. These overlapping spaces come into existence as innovator actors sense aligned expectations between different logics that inhibit these spaces and times and seek to negotiate by positioning within and then transferring the innovation across these aligned spaces.

Stage 1&2: University as a student service provider, and the School’s focus on engaging students (market and teaching). TRACK emerged as the result of the overlap between concern among senior academics within the School of Math for developing a solution to the problem of inadequate course information to improve student support and its general ethos for engaging with students to enable better student experience (teaching logic), and students’ interest in improving university service provision (market logic). This alignment explains the support the project received originally from the national student association due to its student led and centric nature.

Stage 2: The School’s focus on facilitating student experience, and government pressures for universities to become customer focused (teaching and market). The School of Math’s focus on improving student learning and experience through clarifying course information to facilitate option selection (teaching logic) explains its support for TRACK development and deployment. This focus on improving student experience aligned with government pressures for universities to become student focused, for example by tailoring course degree information for student consumption (market logic). This alignment explains the support the project received originally from the national student association due to its student led and centric nature.
Stages 2&3: IS focus on encouraging creativity and experimentation, and student expectations and government pressures on universities to become customer focus (IS professional and market). CIS director’s support was critical in transiting TRACK from a small-scale student project in the School of Math to a pilot of a potential corporate wide system ready to be scaled across three Schools. This support was explained by the CIS concerns at the bureaucratization of CIS processes which limits the scope to exploit corporate software developers’ technical skills and creative abilities to enable radical developments benefitting the end users (IS professional logic). This concern matched the government pressures for universities to become more market focused and change their services to provide value to their end customers (market logic).

Stage 3: The university concern for preserving its reputation for supporting student experience and developers’ focus on solving customers’ problem (corporate and market). Senior management’s support for TRACK at Stage 3 can be partially explained by widespread concern within the university regarding the quality of student experience. Part of this concern for the quality of student experience related to both the current content and design of student facing digital services which was considered inadequate (corporate logic). This concern for the quality of student facing digital services aligned with student developers desire to deliver an IT service that satisfies their own needs for an easy to use system for selecting course options (market logic).

Stage 3: Government pressures for universities to become customer focused and the university’s drive to harmonize processes across Schools (market and corporate). Senior management commitment to TRACK from Stage 3 onwards was largely due to its perceived ability to increase the visibility of course information both for students and academics population. Better visibility incentivized Schools to update and improve their degree and course information. Such improvements aligned both with government pressures for universities to improve degree descriptors to reflect student needs (market logic), and with corporate concerns for harmonization of course information formats across Schools to facilitate large scale management of degree information (corporate logic).

Stage 3&4: Schools’ ethos on improving student experience and the university focus on maintaining its reputation through improvements in student facing services (teaching and corporate). The three Schools involved at Stage 3 were characterized by strong expectations for improving student experience which explains their interest in participating in the pilot. For example, one School was consistently ranked the best school for student support in the university, and all Schools emphasized the personal nature of student support to facilitate student learning (teaching logic). The Schools’ expectations to improve student experience aligned with the corporate focus on improving the university reputation. A key element of this reputation was students’ perceptions of the quality university service provision (corporate logic). TRACK, through its improvements in both the design and the content of course information available to students, facilitates student experience both directly and indirectly by enabling advisers to provide better student support, and aligned both with the Schools’ focus on improving student experience and with the university concern for raising its reputation with students.

Stages 3&4: Prioritize research time and focus on student support (research and teaching). The unexpected uptake of the system by student advisors at Stage 3 and 4 is due to the system aligning two otherwise conflicting expectations. On one hand, TRACK allowed student advisors to provide more in depth student support during the advising meeting, rather than focus on explaining complex degree rules and searching for course information (teaching logic). On the other hand, TRACK enabled students to explore various option courses and consider the implications for their degree by themselves outside the advisng meeting, thus not having to rely on the advisor to explain the implications of various choices. Even as the advising meeting remained the same length (e.g. the prescribed 30-15 minutes at the beginning of the academic year), TRACK reduced the need for interaction between advisors and their students outside the meeting as there were less need for advisor to clarify options and degree paths. TRACK allowed academics to reduce the time spent on student support, improving the tradeoff with the research time (research logic).

Stage 4: IS concern with resilience and corporate focus on alignment with existing processes (IS professional and corporate). As the system became part of IS at Stage 4, its development was facli-
tated by the alignment between the IS professional expectations for developers to address the demands for robustness and resilience (performance and error handling), usability and accessibility requirements (conform university requirements), and sustainability and maintenance (implement corporate technical standards) on one hand, and the corporate expectations for alignment with existing IS organizational systems, processes and practices on the other hand. Organizational embeddedness at this stage to bring TRACK in line with the corporate wide processes (corporate logic) strongly parallels the technical embeddedness of the system within the corporate infrastructure (IS professional logic).

Stage 5: Corporate focus on managing processes and IS expectations of professional specialization (corporate and IS professional). As TRACK diffused across Schools and became part of central IS provision, it acquired a symbolic status of a successful exemplar of student led innovation. The efforts both within IS, SS and at university level gradually shifted from developing TRACK and promoting its adoption by Schools, to encouraging changes in existing processes involved in student facing IS development, delivery and support to provide the space of creativity and experimentation (IS professional logic); the exploration of options for developing a corporate process to engage students in generating ideas, identifying problems, and offering potential IT solutions to be fed into corporate IS development; and collaboration between different units engaged in student led innovation to improve the university reputation as focused on improving student experience (corporate logic).

5 Discussions

The institutional context is characterized by multiple alignment spaces between different institutional logics operating in different spaces within the organization at different times. The ability of innovator actors to sense overlapping alignment between multiple logics drove the initiation of the project by the academic champion within the School in Math with the students involvement (market and teaching logic), explained the CIS director’s original interest in the project and his decision to organize the project separately from the CIS structure (market and IS professional logic), his subsequent decision to continue funding the project under the supervision of a purpose build university committee, and to focus on developing functionality at the expense of robustness (market, IS professional, teaching), and the SS’s decision to take ownership of the project and transfer into corporate service, but change development focus towards support and maintenance (market, IS professional, teaching and corporate). The concept of “sensing alignment” recognizes that innovator actors do have choice in deciding which alignments to navigate towards and which to steer away from as exemplified at Stage 2 by the School’s academic champion to reorient towards alignment with the IS professional (through seeking the involvement of the CIS director) rather than market logic (through pursuing further funding from the student association), and at stage 3 in the CIS director’s decision to maintain a strong alignment with the market logic through emphasizing bottom up implementation within Schools and maintaining the project separate from the normal CIS processes, rather than seeking to position the project solely at the confluence between IS professional and corporate logics through bringing the project fully within the CIS structures.

To progress the innovation through an institutionally plural context, actors also need to negotiate between the different logics occupying these sensed alignment spaces by enacting changes in the innovation to respond to the demands imposed by the changing configurations of aligned logics. During its trajectory across multiple alignment spaces, the IS innovation process is changing shape, from isolation to embeddedness in corporate organizational and technical infrastructures, from frugal innovation to gradual access to wider range of resources, and from improvisation and make do approach to a focus on following processes to justify funding and ensure accountability. The need to respond to changes in the alignment spaces, from the overlap between the market & teaching logics towards the confluence between IS professional and corporate logics also explains the changes that the actors make to the content of the IS itself by narrowing down the scope for radical applications that would serve the user (such as popularity course ranking) towards improvements within the existing parameters of use (which are supported by existing processes and gain broad consensus), and the shift away from radical functionalities that emphasize usability and rely on different design approaches to development (such
as the dynamic program builder) to incremental features that focus on sustaining within existing parameters of use (which aligns with what is seen as legitimate within the corporate and IS professional logic, i.e. building in robustness and resilience and inward focus). Similar with sensing alignments, the concept of negotiating between logics implies that the institutional logics themselves are conceived as malleable, to a degree, by the actors. For example, in maintaining a student led focus throughout development, the actors pushed the boundaries of IS professional and corporate logics which do not sit easily along the expectations for prioritizing students’ needs. A compromise was reached which allowed the TRACK team to maintain the student led focus, and instead respond to the requirements of these two logics by increasing embeddedness of the IS process (corporate logic) and narrowing down scope for radical features development (IS professional). This was a critical decision evident at each stage during the trajectory of the innovation, and driven by student led vision for a user centric service of the original developers.

6 Conclusions

The study explores the trajectory of the IS innovation as it navigates through an institutionally plural organizational context. We find that success is largely due to the ability of IS innovation actors to both occupy and then shift across multiple episodes of alignments between overlapping logics in different spaces and at different times, from its inception at the confluence of the market and teaching logics and throughout its trajectory through re-alignments successively with the IS professional logics, the research logics and the corporate logics.

Our findings bring several contributions to IS research. First, the findings advance the current debates in institutional IS research which only recently begun to examine organizational IS innovation in institutional plural contexts characterized by multiple logics (Berente and Yoo, 2012; Bunduchi et al., 2015; Hayes and Rajao, 2011; Mangan and Kelly, 2009). This research has examined the mechanisms that hybrid organizations develop to cope with multiple logics. While existing research focuses mostly on how organizations deal with two conflicting logics during IS implementation (Bunduchi et al., 2015; Mola and Carugati, 2012) or use (Berente and Yoo, 2012), we explain instead on how IS innovation can successfully navigate multiple logics throughout the trajectory of a particular innovation from development, through to implementation and use. The analysis finds that to understand the trajectory of a IS innovation, one needs to examine not only the time, but also the spaces which the innovation inhabits. This approach allowed this study to unearth the evolution in the content and process of the IS innovation, identifying the difference between pivot and shifting IS features, as well as the movements across alignment spaces which might have been obscured if the research would have focused only on one stage (e.g. post implementation). The concept of alignment spaces provides a powerful tool for researchers to aid the examination of IS implementation in institutionally plural context, and consider not only time but also the landscape as important in understanding the progression of IS innovation over time. While research on IS implementation has long given attention to time as a critical factors explaining the nature of IS innovation (as exemplified by the stage models of IS implementation, Cooper and Zmud, 1990, Mignerat and Rivard, 2009), less attention has been given to the progression of innovation across organizational spaces. The concept of alignment spaces allows researchers to highlight the relationship between locales where innovation happens (alignment spaces) and the episodes through which the innovation processes (transition across the different stages).

Second, the findings point to another avenue through which IS innovations can provoke the emergence of institutional entrepreneurship in hybrid organizations. While Mangan and Kelly (2009) find the scale, scope and significance of a large and failed IS project to be critical in unveiling latent tensions and instigate institutional reform within a blended hybrid, we find it is the success of a small scale IS to navigate well acknowledged tensions between different parts of a structurally differentiated hybrid which provides an occasion for encouraging reform through offering a template for change. During its trajectory, TRACK was promoted by the development team, the CIS and SS and the academic champions as a student led innovation success story, and used as an exemplar to actively encourage the development of other pathways to support student led innovations. In this respect, the TRACK team can
be seen as institutional intrapreneurs who have, inadvertently at first, challenged the current model of organizing IS development within the university, by demonstrating the value of supporting alternative way of sponsoring, initiating, developing and sustaining IS innovations through drawing from an abundant but much underutilized university resource: the creativity and enthusiasm of its students.

References


