



Processing societal expectations: entrepreneurship initiative decision-making at a research university

Juha Tuunainen¹ · Kari Kantasalmi¹

Accepted: 29 May 2023
© The Author(s) 2023

Abstract

Deploying systems-theoretical conceptuality, this paper improves understanding of the organisational consequences of the intensified societal engagement of a research university. Aligning its work with Luhmannian organisational analysis, it addresses the dynamic interplay between two modes of administrative decision-making communication, namely, the traditional professional administration and the New-Public-Management-oriented (NPM) managerial techniques. Our research observes how the politico-economic conditions of the society translate into the university's decisions concerning an initiative to engage in start-up entrepreneurship. The article contributes to higher education literature by showing that the university's professional administration is a discrete organisational function internally differentiated into specialised administrative branches, each of which operates according to a sense-making regime associated with its primary societal system reference, such as education, science and the economy. The article also demonstrates the structurally conditioned differences in branch-specific temporalisations of the entrepreneurial initiative during decision-making. Inspired by the Luhmannian view on temporality, we demonstrate how administrative decisions synchronise the varied structural time horizons within the university's professional administration. Focus on temporality in decision-making thus allows us to see how the NPM-inspired managerial techniques are operationalised in administrative communication at universities. Consequently, the paper argues that university administration is a complex dynamic entity, which varyingly aligns itself to national policy scripts, and only selectively enacts features of a global trend known as NPM.

Keywords University organisation · Systems theory · Management · Administration · Decision-making · Entrepreneurship education

✉ Juha Tuunainen
juha.tuunainen@oulu.fi

Kari Kantasalmi
kari.kantasalmi@helsinki.fi

¹ Department of Marketing, Management and International Business, University of Oulu Business School, P.O. Box 4600, Oulu FIN-90014, Finland

Introduction

Since the 1980s, national policies have varyingly enacted features of new public management (NPM). This has given rise to views according to which the societal anchorage of universities in politics and the economy has diminished their organisational autonomy (Schimank, 2005), strengthened their administrative hierarchies and weakened their collegial self-government (Donina & Paleari, 2019). Accordingly, the political and economic environment has been said to have penetrated the internal organisation of universities (Bleiklie, et al., 2015), thereby corrupting (Lorenz, 2012), or at least significantly shaping it (Bruckmann & Carvalho, 2018). Consequently, the NPM-inspired managerial techniques (Ferlie et al., 2008) have been claimed to have blended with traditional academic administration, resulting in the “neoliberal” university’s expanding managerial orientation (Davies, et al., 2006).

Despite these claims, the higher education literature also points out that university administration has developed a strong sense of uniqueness and does not directly import managerial forms deployed in other types of organisation (Shepherd, 2018). Existing administrative structures supplemented with managerial techniques can thus be regarded as an organisational filter mediating between universities and their societal environments (Fumasoli, et al., 2020; Hasse & Krücken, 2013). Thus, Bruckmann and Carvalho (2018) argue that a hybrid model of academic “collegial” administration and new managerial orientation has emerged within universities. However, limited attention has been paid to the different forms of professional administration in organisational decision-making. Furthermore, there has been little research regarding how managerial procedures meet the features of more traditional university administration. Thus, we assume that traditional administration and NPM-inspired managerial techniques are qualitatively different (Hughes, 2003) yet closely related aspects of the universities’ decision-making processes. Our focus, therefore, is on the subtle ways in which the external societal stimuli are observed from the administrative and managerial viewpoints and formulated into internally processable problems and eventual resolutions communicated within the decision-making process that exposes the dynamic between traditional and novel administrative procedures.

To address this topic, we draw upon Niklas Luhmann’s systems theory and conceptualise university administration (Baecker, 2010) in terms of its internally differentiated branches. We do so to better see how these operate as sensitised to their primary societal reference problems in education, science, economy and else within functionally differentiated society. The administrative decision-making on university degree structures and curricula resonates primarily with changes that have taken place in the societal system of education (e.g. regarding academic labour markets and expectations for lifelong learning), while professional research management reflects the altered conditions of scientific research (e.g. research funding structures and the economic relevance of science). Furthermore, the branch for communications and community relations is sensitised to the economics and politics and observes stakeholder views about the university while focusing on public relations. To better understand how the developing professional administrative branches operationalise managerial techniques, we describe the dynamics in decision-making communication regarding the university’s internally differentiated administrative structures. Furthermore, to gain more accurate views on each branch’s structurally conditioned temporalisations in preparing decision premises that generate further decisions, we also differentiate between chronological and structural notions of time (Luhmann, 1976, 1995, 41–52).

Our empirical focus is on an initiative according to which a most notable public research university in Finland should be more active in advancing start-up entrepreneurship (hereafter “the initiative”), an expectation which was not easily fitted into its traditional administrative structures. Thus, the chosen case allows analysis of the ways in which managerial techniques, such as organisational experimentation (Hansson & Mønsted, 2008), unfold regarding the varying structural expectations of the administrative branches of a university. Organisational experimentation is a recently adopted technique in the public sector to deal with societal complexity and the related multiplicity of temporalisations in the organisational decision-making (Baecker, 2010; Åkerstrøm Andersen, 2020). This controversial initiative allows us to describe how the interplay between traditional public administration and the NPM-inspired managerial procedures became operational in the emergence of potentialising forms of organisation (Åkerstrøm Andersen, 2020) that both support the university’s third mission performance and affect decisions conditioning teaching and research. We therefore formulate our research question as follows: How are the managerial techniques and traditional administrative procedures deployed in the processing of a complex initiative in the differentiated administrative structure of a research university?

The structure of the article is thus: In the “[Systems-theoretical optics for understanding dynamics in administrative and managerial decision-making](#)” section, we elaborate and discuss our theoretical lens, which draws upon systems-theoretical inspiration. In the “[Data and methods](#)” section, we describe our data and analytical methods, before moving to the “[Decision-making about the entrepreneurship initiative at the University of Helsinki](#)” section where empirical research results are illustrated. Finally, the article ends in the “[Conclusion](#)” section, which focuses on concluding discussion.

Systems-theoretical optics for understanding dynamics in administrative and managerial decision-making

In higher education, universities are increasingly considered organisational actors of their own right (Hasse & Krücken, 2013) with a particular “organisational dimension” that acts as a filter between “exogeneous pressures” and the university’s internal action (Fumasoli et al., 2020). Furthermore, it has been claimed that decision-making within universities is increasingly formalised (Fumasoli et al., 2020) and that “a hybridism with a combination of both collegial and managerial logics” is evolving (Bruckmann & Carvalho, 2018, 643). We approach this broad topic by looking at administrative and managerial decision-making from the viewpoint of Luhmannian systems theory. Based on this theory, we view the society as an all-encompassing social system, which contains subsystems (e.g. economy, law, politics, education and science) that observe their unique societal functions and specialised communication formats while following temporal logics of their own (Nassehi, 1994). Territorial states have developed national systems of higher education as organisational forms offering structural couplings of functionally differentiated communication formats with global reach (Pfeffer & Stichweh, 2015; Pfeffer, 2013).

Organisations, in turn, typically process decisions via self-referential and self-sustaining (autopoietic) communication. This implies a difference between an organisation and its internally relevant societal (i.e. intra-societal) environments. An organisation is closed in terms of its decision operations as well as in terms of regulation of reflecting the premises of those decisions (Luhmann, 2018, 185). Its internally relevant societal (i.e. intra-societal) environments, however, include several possible meaning references

that require sensible (sinnhaft) selectivity on what is meaningfully processable within an organisation and what is not. University organisations' decisions primarily concern education and science typically reduced to matters of teaching and research, but with recently added third mission concerns (e.g. Sørensen, et al., 2019). Ensuing from oscillation between internal self-references and external other references in an organisation's operations, the functionally differentiated societal subsystems are thus observed as evolving sense-making regimes for processing of meanings that condition significations in organisational decision-making. This means that a university self-referentially constructs its relevant environments through internally structured semantics (Baecker, 2010) corresponding to the administrative branches for research, education and third mission performances.

As underlined by Hasse and Krücken (2013) in their discussion about legitimacy, a public university cannot consider irrelevant how its organisational performance is observed by other societal subsystems, such as law, politics and the economy. However, these cannot directly insert resources into the university's internal communication, which is a synthesis of information, utterance (*Mitteilung*) and understanding. This unified structure of communication means, first, that every communication selects what information is being presented. Second, any utterance means selecting the reason for and the way in which something is said. Finally, understanding distinguishes information from the utterance, which Seidl and Becker (2010, 214) explain as follows: wearing a red tie could be understood as the utterance of a socialist conviction (i.e. information), but if the red tie is not understood as an utterance at all, or if it is understood containing some other information, a completely different kind of communication becomes realised. Understanding is, therefore, decisive for the recursive acknowledgment of communication. Furthermore, understanding or misunderstanding refer neither to processes in human mind nor to behavioural consensus among humans, but to an organisational process, which is fundamentally grounded in communicative events that are contingent by nature (Schoeneborn, 2011). In organisational decision-making, agreement on acceptance or refusal of communications can thus be of importance as a social construct only, i.e. as a "communicated agreement or supposed agreement" (Luhmann, 1996). External references are capable of irritating (i.e. surprising or inspiring) a university's internal processing of meaningful decisions, and only if such irritations are viewed as relevant by the organisation, are they (in)formed by the structural state of the university.

Inspired by Baecker (2010), we suggest observing how university administration internally organises the university's increasingly complex societal entanglements. However, we do not attribute neither decision-making nor sense-making to boundedly rational or relational human behaviour, as Simon (1997) or Weick et al. (2005; also, Bruckmann and Carvalho, 2018) do. Instead, we conceptualise these in terms of a social system's constant oscillation between self-reference and external reference (Arnoldi, 2010, 33). Thus, a university is an operationally closed decision-making system with self-sufficiency in deciding its internally deployable decision premises (Luhmann, 2018, 185). As such, it interprets the developments in its environment according to its internal state, including its previous decisions and premises that may be undecidable as well, such as organisational cultures and identities (Fumasoli, et al., 2020) that are often based on the notion of *Bildung* (Kantasalmi, 2015; Lenartowicz, 2015; Kleimann, 2019). So, by memorising past decisions and oscillating between envisioned futures, the university administration and management temporally combines sense-making and decision-making to selectively consider the relevance of its external references, which become deployed in these processes as *de facto* internal constructions (cf. Boland, 2008).

A university, as all social systems, reproduces itself via ongoing communicative events that are focused on what was decided and what was not during the process of decision-making. All such communications convey three dimensions in processing meaning, namely factual, social and temporal. Regarding the factual dimension, difference considering the topic of communication is made, for instance, in terms of what topic belongs to science or higher education and what is above all meaningful in economic communication, such as entrepreneurship. In other words, a reference system can be attributed to administrative branches that process the meaning of what we will in this paper observe as the initiative. The social dimension, in turn, considers “grasping the sociality of meaning as the plurality of perspectives of observation” (Baraldi, et al., 2021, 142). This means that the university administration’s decision-making needs to consider the motivations of different socially established views to contribute to possible significations of the topic at hand. An entrepreneurship initiative, which could be considered as irrelevant, for instance, from the viewpoint of *Bildung*, might however motivate members of an organisation to share socially constructed expectations about the university’s capacity to promote research-based applications or enhance employability. Finally, the temporal dimension, which also is inherent in organisational decision-making, is expressed in terms of a selection related to two conceptions of the present: first, the continuously passing present, according to which current events constantly become the past, and, second, “the durative present”, which holds access to the future open (Baraldi et al., 2021, 142–143). In terms of our current analysis, the passing present is observable in administrative decisions reducing alternative futures into a one selected option, while the durative present is illustrated by open-ended managerial techniques that postpone decisions to experiment with different meaningful solutions.

Following the theoretical perspective explicated above, we show how the factually controversial and originally vague economic initiative for advancing start-up entrepreneurship was processed in the specialised administrative branches of the university that each resonated in their sensemaking about the topic with different societal reference systems (Luhmann, 1986, 40–42). Parallel with this processing, the university administration was fundamentally restructured according to changes in its legislative environment and expectations regarding its societal services. Our analysis thus unfolds the ways in which the university administration and the NPM-oriented managerial techniques operated alongside each other during the studied decision-making process. We also pay attention to the distinctions each administrative branch deploys as it processes the entrepreneurship initiative, which reflects the altered external expectations about the university’s economic relevance. Furthermore, the branch diversity in administrative sense-making suggests paying attention to varying structural temporalisations related to the processing of the initiative and associated semantic moves the administrative branches take. For example, the expressions of “academic entrepreneurship” and “science-based business” were developed in the restructured branch of research administration to suit the university’s scientific mission, while the notion of “student entrepreneurship”, resonating with that of an educational sense-making regime, was related to the inclusion of a mandatory module entitled “working-life period” in the degree program’s curricula (Rector’s decision, 22/2016). Analysing sense-making and decision-making switches of these kinds, the interplay between the novel managerial techniques and more traditional administrative decision-making becomes visible.

Thus, our analysis focuses on the decision-making communication within differentiated structures of the university’s professional administration and the ways in which NPM-oriented managerial techniques are deployed when processing the meaning of the initiative, reflecting the expectations of the societal subsystem of economy. The initiative itself was

controversial in factual terms as it emphasised economic relevance, entrepreneurial spirit and start-up skills instead of epistemic or educational ones. Therefore, our analysis shows that the traditional university administration with complementary NPM-inspired managerial restructuring viewed the initiative cautiously, but not indifferently, and processed the significations in quite unusual ways as regards the social dimension of sense-making. Furthermore, the administrative-managerial operations emphasised the temporal dimension of the initiative's meaning processing as a search for a form, which would allow the coupling of innovation-oriented research with entrepreneurship-oriented tertiary schooling. During this process, the role of traditional academic leadership, meaning the Rectorate and the faculty, was to serve as occasional checkpoints only, in addition to making formally communicated decisions dated and archived in the university.

In summary, our systems-theoretical inspiration guides us to assume that the expectation structures of the functionally differentiated administrative branches resonate differently with the studied economic initiative. A key to understanding the administrative and managerial dynamics present in the case example is to pay attention to the varying temporalisations of the different administrative branches as they process it. We thus observe switching between such branch-specific sense-making and decision-making logics to see how the administrative and managerial processing of the initiative is temporalised during decision-making. As our analysis shows, the dated administrative decisions synchronise the structurally conditioned temporalisations across administrative branches while simultaneously closing certain options and creating new complexities to be processed in subsequent decision-making. Furthermore, the administration supplemented with NPM-inspired managerial techniques also occasionally postpones decision-making by deploying experimental organisational development for temporarily stabilising the oscillation between possible visions of the future.

Data and methods

Traditional public administration, resembling the classic Weberian model of bureaucracy, tended to archive decisions and decision-making premises that served organisational memory. Managerial decision-making, in turn, consists of NPM-inspired techniques, such as fact-finding, networking, pre-decisional piloting and stepwise constructed agreements, that leave fewer traces to support research on decision-making (Åkerstrøm Andersen & Pors, 2017). This can be seen in the availability of data for the present analysis, which focuses on the University of Helsinki during the 2000s.

We base our analysis on data that includes 26 interviews, some of which comprise more than one individual as an interviewee (see Appendix 1). These interviews were dialogic in nature (Russell & Kelly, 2002) and they were conducted between the years 1999–2022 in the context of multiple successive research projects. Of these interviews, one was made in 1999, seven in 2000, one in 2005, six in 2012, one in 2016, nine in 2019 and one in 2022. During the study, about half of the interviews were connected to the investigated decision-making process and were thus analysed in detail. The rest of the interviews were used as secondary data to get a picture of the evolving context of the university administration and activities as well as their recent historical background. Such information was fundamental in terms of providing a baseline against which the novelty of the analysed process clearly stood out.

In addition to the interviews, we used more than 100 documents (e.g. strategies, plans, memoranda, reports, power point slides, press releases and minutes produced by the University, the Ministry of Education and Culture and the City of Helsinki) that supplemented the interviews in detailing the broader context of the studied case example and describing different phases of the decision-making process under investigation. The criteria for and practices of collecting these data, which ensues from our sustained interest in studying the University's commercial engagement since the late 1990s (e.g. Tuunainen, 2001, 2005; Tuunainen & Knuuttila, 2009; Tuunainen et al., 2021), was as follows:

- 1) We interviewed representatives of the Ministry of Education, the Finnish Innovation Fund Sitra, the National Technology Agency (Tekes), the Council of Rectors of Finnish Universities, the University of Helsinki and the managers of the University of Helsinki's technology transfer company (12 in total) to get an overview of the higher education and innovation policy context wherein the studied decision-making process occurred. These interviews were supplemented by an extensive set of documents that further specified the history of commercial engagement of the University and described its evolving context between the late 1990s and 2010s.
- 2) We also interviewed professional administrators and managers of the University (12 in total) who had participated in the decision-making, not to attribute their agency, but to reveal the operational logics of the University's different branches of administration. These interviews were conducted to improve our understanding of the complementarities of the administrative and managerial operation modes in the decision-making processes. Thus, the interviews were designed to collect interpretations about the development of the studied initiative and the broader sense-making regimes resonating within each branch's distinctive operational logic.
- 3) The framing of the interviews in the past tense enabled us to understand the extant frames for referencing the initiative by each administrative branch, based on its relevant sense-making regime used in decision-making. We stretched our data to cover years since the late 1990s onwards, i.e. before the entrepreneurship initiative, to understand how the University administration historically operated. This was relevant for us to see how the administrative operations unfolded in result of the new university legislation of 2010.
- 4) Because several administrators and managers indicated that they had processed the initiative with stakeholders external to the University, we also interviewed these two outsiders to have full understanding about the studied developments. Involving outside partners in organisational decision-making was particular to the more recently established Research Services (RS) and Communications and Community Relations (CCR) branches that were oriented towards the University's third mission and were less tied to legislative or administrative regulations (e.g. statutes issued on degree education and teaching arrangements) governing the organisation.
- 5) Because some administrative branches were not engaged in producing and archiving dated and filed organisational memoranda and decisions, we also chose to collect a set of unofficial documents from our interviewees. With the help of such data, we were able to gain a better understanding of the administrative sense-making regimes of different branches as well as to identify decisional options that were ruled out during the process. Conversely, we checked the University archives and collected any decisions that we could find in relation to the process we investigated.

The systems-theoretical conceptuality guides our analysis of the structurally conditioned semantics present in the investigated decision-making processes. We took the sense-making regimes of each administrative branch as structural correspondents for environmental expectations the branch was set to deal with via interpretative semantics (scientific research and innovation, higher education, stakeholder relations etc.) (Besio & Pronzini, 2011), and thereby illustrate the ways in which the administrative branches operationalise such interpretations in the form of decisions. Under the methodological guidance described above, we thus describe how such sense-making leads the University, first, to decide to establish and later to corporatise the student entrepreneurship hub and, second, to renew its degree program structures by adding a specific module entitled “working-life period” (Rector’s decision, 22/2016) into the curricula. Figure 1 summarises our coding process (Charmaz, 2006) with reference to the various phases of the analysis.

The main phases of our data analysis are presented in Fig. 1. First, gleaning from the methodological insight offered by systems theory, we openly coded (Charmaz, 2006) our data to see (1) how the University administratively conceptualised the societal expectations present in its environment, (2) how its administrative branches processed the semantics corresponding to internally interpreted expectations concerning the initiative and (3) what decisions were made according to the structures and semantics of the branches. Second, to determine the operation mode of administration at different stages of the decision-making, we organised the data categories according to administrative branches. In this phase, we observed that occasionally the branches intervened in each other’s operative domains, for instance when the University was subject to significant budget cuts, the Financial Services (FS) decided to corporatise the hub, thus synchronising the preceding temporalisations of the hub’s organisational form developed in the branch of CCR with those of the FS. Third, we organised the decision-making by the branches into two main categories, managerial and administrative. This was to examine how the emergent managerial operation mode took the lead in advancing the initiative at the University (the “**Managerial**

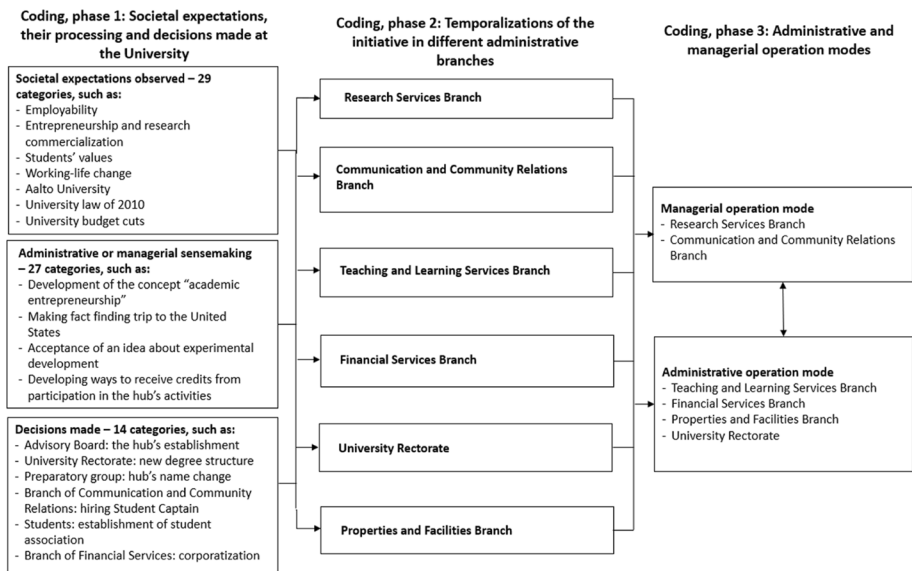


Fig. 1 Main phases of data analysis

decision-making mode: from entrepreneurship “buzz” to student entrepreneurship company” section) and second, how the administrative mode enabled its partial integration into the University’s discipline-oriented degree structure (the “Administrative decision-making mode: Entering “working-life period” into curricula” section). Consequently, we detected switches in administrative responsibilities and temporalisations between different branches and interpreted such moves as being characteristic to their dissimilar sense-making regimes connected to the systems of higher education, scientific research and stakeholder relations.

Decision-making about the entrepreneurship initiative at the University of Helsinki

During the post-war period, many countries began to pay attention to the role of science, technology and higher education for economic growth, and Finland was no exception. More recently, in the 1980s and 1990s, new public management, which had its roots in the rational choice theory and economic recession of the 1970s, started to shape governmental policies (Yliaska, 2015). In Finland, as in many other European countries (Sørensen et al., 2019), this change led to the gradual development of techniques that have been called management by results (Kuoppala, 2005). With associated budgeting and steering techniques that were gradually implemented and modified by the government during the late 1990s and 2000s (Interviews 10, 11, 12, 20), the reform sensitised universities to the NPM-modelled forms of “embedded steering” (Buchinger, 2007, 173). In parallel, rectors of Finnish universities who were inspired by the reform policy of the Organisation for Economic Co-operation and Development (OECD) initiated a renewal of the university legislation (Universities Act, 558/2009) in 2005 to “gain independence from the state bureaucracy”, which according to the University of Helsinki’s Head of Administration, “was badly adapted to the current needs of higher education and research” (Hämäläinen, 2014).

Although many commentators take this movement in politics as a pressure that penetrates universities and forces them to alter their operations, we hold that the universities themselves have a role to play in deciding how they observe, process and respond to changing environmental expectations. When it comes to the University of Helsinki, which is an example of European universities established in the early modern period (1640), the process of responding to the expectations was affected by its layered organisational identity, comprising of a Humboldtian concept of *Bildung* (Kantasalmi, 2015) and the University’s status as Finland’s leading research university (University of Helsinki, 2003) in the League of European Research Universities (LERU), an association of the most renowned research universities in Europe. The process was also characterised by the fact that, in the late 1990s, the University was a latecomer in the renewal of its internal administrative structures and processes as well as slow to respond to the expectations for increasing research commercialisation (Tuunainen, 2005; Interviews 1, 2, 3, 16, 17, 18). As these expectations coincided with the change in the universities’ legislative status and Finland’s membership in the European Union, which opened opportunities for large-scale research funding, the University decided, in 2007, to renew its administrative structure and managerial processes (Mansikkamäki, 2010, 7–8, 29). In addition, the University adopted “a new management system” with more clearly articulated linkages between strategic objectives, leadership roles and responsibilities as well as operative results across all organisational levels (University of Helsinki, 2009, 41–42; Interviews 10, 11, 12).

In this section, we illustrate how the University's internally differentiated administration tackled the external economic initiative of advancing start-up entrepreneurship and how it processed it further by using semantic modifications, fact-finding procedures and organisational experiments, with traditional public administration procedures, including collegial preparation and subsequent decision-making. Characteristic of the University's administrative branches was their resonance with the sense-making regimes of the different societal subsystems, such as economy, education, and science, that affected the ways in which they eventually tackled the initiative in question. We look, at first, how the novel branches of RS and CCR responded to the entrepreneurial expectations by using flexible, future-oriented managerial techniques, and focus, after that, on the more established branch of Teaching and Learning Services (TLS), which applied traditional public administration procedures, detailed in the University's Administrative Handbook (University of Helsinki, 2011), to regulate curricula in the context of the University's degree reform.

Managerial decision-making mode: from entrepreneurship “buzz” to student entrepreneurship company

The University of Helsinki's RS started to evolve by the turn of the millennium with a focus on commercialising scientific research results and supporting researchers' efforts to acquire external funds. Its focus was on innovation and bureaucratic technicalities of large-scale projects with collaborative partnerships in economy, especially in relation to EU and the then National Technology Agency (Tekes) (Interviews 1, 2, 3). Thus, heightened attention was paid to the University's economic partnerships, an orientation accentuated by the Government of Finland's efforts to create “an innovation university” by merging, in 2010, three universities into a single organisation later named Aalto University (Ministry of Education, 2007). As Aalto was situated in the Helsinki region, it sprouted concerns by alumni of the University. Investors were “extremely disturbed” to see that the University was “giving Aalto a head-start to do things related to start ups” (Interview 22). These views resonated in the newly organised RS, which incorporated, in 2012, the investor sector to participate in the preparation of the University's response to the novel economic expectations. Subsequently, a team representing the business world, the City of Helsinki and RS and CCR started to discuss the issue (Interviews 4, 6, 22, 23).

Being oriented to research commercialisation, RS took the lead in processing the stimuli, in collaboration with the above-mentioned partners and CCR, which was particularly sensitive to the development of the University's stakeholder relations. At the outset of the ensuing semantic work, a need to create “a buzz place” with strictly commercial goals of advancing “science-based business” in biomedicine was recognised (Interview 4). The City of Helsinki's Economic Development Department shared this aim: “An idea came up that, well, as there is a tremendous amount of know-how at the University, and an awful number of students, we need entrepreneurship buzz here as well” (Interview 6). Given the University's identity as a Humboldtian *Bildungsuniversität* (Niiniluoto, 2011), the concept of entrepreneurship sounded harsh and was soon replaced by that of “academic entrepreneurship” (Interview 8, 22) so as to make the initiative more digestible within the University with a strong scientific ethos.

Along with this semantic modification, the idea of academic entrepreneurship was introduced to the Advisory Committee of the City of Helsinki and the University, leading to the statement according to which the City will establish “a centre for promoting entrepreneurship” with the Universities of Helsinki and Aalto (City of Helsinki, 4.10.2012). This

announcement, prepared in alignment with the University's academic leadership, which served here as an occasional administrative checkpoint, was considered important within the City's Economic Development Department: "It was an expression of a strong will. It was a clear signal to the University that the City of Helsinki was serious" (Interview 6). Thus, following the commitment, the Advisory Committee expressed a will that a "centre for the creation of student and research-based entrepreneurship" will be established to support formation of new jobs in "non-traditional" academic fields, such as the humanities (Advisory Committee of the City of Helsinki and the University of Helsinki, 20.11.2012).

At the University, "the centre for promoting entrepreneurship" needed further managerial fine-tuning. To enable this, decisional leeway was created by means of fact-finding via a student survey ordered from a local think tank. CCR concluded that the entrepreneurial motivation among the students was not so much about "getting rich" but having "an interesting, meaningful working life" where one could "change the world" (Interview 7). This ethos contributed to the further transformation of the idea about "academic entrepreneurship" to that of a student entrepreneurship hub, a move which created new administrative complexities. Thus, to advance the idea about the students' "value-oriented entrepreneurship", RS and CCR, in collaboration with the city and business life, undertook a fact-finding trip to the USA to learn how similar hubs operated in California (Interviews 4, 6, 7, 22). Seeing tangible examples fortified the understanding that to process the idea further the managerial technique of organisational experimentation should be adopted. From the investor perspective, the experience "opened our eyes": "Suddenly, everybody thought that starting was much more important than finding the correct guidelines at the outset. We must, simply, start proudly doing things on the frontier where we do not know what we will encounter" (Interview 22). Thus, the decision to use organisational experimentation speeded up the formation of the hub's concept without locking the visions about its future form, only narrowing down their spectrum.

The experimental development was an unconventional managerial technique deployed by RS and CCR. The development of the hub, now renamed as "Helsinki Think Company" (HTC) and allotted an empty office space by the Properties and Facilities administration (Interview 7), thus illustrates how managerial potentialising (Åkstrøm Andersen, 2020), which kept the hub's organisational form open, operated in the preparation of decision premises at the University, which only 3 years earlier was administered a part of the state bureaucracy. A central characteristic of this managerial alignment with NPM was to distribute decision-making capacity to the involved students to avoid HTC becoming directly controlled by the University. To facilitate this, student interest in the entrepreneurship hub had to be raised and a community of students had to be created around it (Interviews 5, 6, 7, 13, 14). CCR therefore first recruited a part-time Student Captain to run and develop the hub. Second, the problem of the missing student community was solved by establishing a student association in connection to HTC so that the students could integrate themselves, instead of merely participating in its events (The University of Helsinki's and the City of Helsinki's agreement on cooperation for entrepreneurship, 2013). Third, instead of direct referring to entrepreneurship, the students developing the hub raised motivation among their peers by asking if their interlocutors were interested in taking their "academic expertise into practice" (Interview 14). Finally, the hub's experimental development was combined with further fact-finding efforts, e.g. interviews, surveys and campus-specific workshops, to tailor activities discipline-wise for varying student cultures. In such ways, CCR was able to "lighten" its managerial role and become HTC's "enabler" only (Interviews 5, 7, 13).

As HTC was set up and running, it remained a part of the CCR administration, which managed it with the City using a plan annually agreed with the students responsible for HTC's operation. HTC's bond with the students was secured by the association, which

offered them a community to join and find like-minded company (Interviews 5, 7, 13, 14). This arrangement changed in 2015 when severe budget cuts were imposed on Finnish universities. At the case University, the reduction totalled about 15% of its funding. The sudden shock resulted in prompt administrative intervention by the University's FS with an extensive organisational renewal program, including a reduction of 570 employees (University of Helsinki, 2017). The circumstances put HTC's personnel at risk of dismissal, thus endangering its future (Interview 6, 12).

In this situation, the experimental development of the hub quickly switched into hierarchical decision-making by the University administration. The decision-making responsibility was transferred from CCR to FS, which conceptualised the conditions for HTC's continuity from the perspective of the immediate needs of the University's finances. Thus, supported by top academic leadership and professional administration, it drew upon an established decision premise of organising the University's business-oriented activities by using a company form (Helsinki University Holding Ltd., 1992; Interviews 24, 25, 26) and decided to wrap up HTC in the form of a limited company (Interviews 6, 12). CCR viewed the swap as follows: "The company form was chosen because due to the [budget] cuts, we would not have been able to have the students as our temporary [employees]. It was the main reason, and it was [Financial Services'] decision" (Interview 6). The organisational status of HTC was thus transformed from a service offered by CCR to a private enterprise tied to the University by a temporary service contract only. Consequently, it became a service operator to provide extra-curricular student entrepreneurship activities to the University based on competitive bidding in the market.

This section has shown how the University's internally differentiated administrative structure observed its societal environment and processed its observations further within the organisation. At the beginning, the idea was about research-based start-up entrepreneurship in biomedicine but was later turned into a student-led entrepreneurship hub operating as a limited company outside of the University. During this process, each administrative branch tackled the initiative from the perspective of its own temporal horizon and sense-making regime, meaning, for instance, that CCR was ready for long-term, open-ended managerial experimentation, while FS decided to use hierarchical decision-making power implemented in a restricted timeframe. Also, a characteristic of the case was that at the beginning, TLS was not capable of processing the issue at all. We will now examine what was required of the University to facilitate its participation in the case example.

Administrative decision-making mode: entering "working-life period" into curricula

We showed above how the RS and CCR branches used managerial operation mode to enable, in temporally flexible ways, possible futures to be integrated with the entrepreneurship initiative representing the third mission of the University. Meanwhile, the TLS branch was incapable of addressing the initiative as it did not connect with degree-oriented education (Interview 9), which belonged to the decisional competence of the faculties rather than that of the University's central administration. However, this changed as the University's discipline-based curricula became subjected to updating in 2016 (Rector's decision, 22/2016). It enabled the degree-oriented educational administration to form potentialising links between HTC's developing entrepreneurship activities, the curricula administered by the faculties and the University's academic leadership. In this section, we show how HTC turned into a potentialising organisation (Åkerstrøm Andersen, 2020) providing educational services to the University's degree-oriented education.

If RS and CCR observed the University's societal environment in terms of research commercialisation and stakeholder relations, TLS focused on the education system and fragmentation of work careers that put pressure on students to consider such existential questions like "who am I, what do I want, what is important for me, [and] which direction should I go in" (Interview 8). The branch also observed that the students had a strong value base in their educational choices, e.g. in terms of looking at opportunities to contribute to important social, economic and environmental problems of the society. Synchronising these observations with the Bologna Process, which advanced competence-based curricula in Europe (Schomburg & Teichler, 2011), TLS aimed to increase the students' capacity for self-regulation in a dynamic and uncertain society. Thus, a curricular reform called "Big Wheel" was launched in 2015, simultaneously with the reductions in the University's budget (University of Helsinki, 2016; Interviews 8, 9). According to the Bologna Process, the University reintroduced bachelor's degrees to precede master's degrees and redefined their learning outcomes. In view of TLS' sense-making regime, "the focus was on refreshing the University's degrees. We went through them to ensure that they were up-to-date" (Interview 9).

The Big Wheel reform evolved organically from the preceding administrative observations and decisions in TLS and the faculties: the students' employability had been on the agenda since the 1990s, especially in terms of recruitment services based on funding from the Ministry of Education. Later, these services had evolved into ones that sought to develop students' capacity for self-management and career planning and to meet the changing conditions in the academic labour market and work via courses experimentally co-organised with teaching staff. Finally, some teachers had considered HTC and its extra-curricular entrepreneurship activities to be valuable for preparing students for changing working-life conditions. These events formed the premises of the Rector's decision (22/2016) emphasising the skills needed in "working life" thus including them as mandatory requirements in the degree programs (Interviews 8, 9).

This process altered the University's internal structural conditions and affected HTC's possible roles in the future. From CCR's perspective, HTC had developed its services so that it could "co-operate with the research services and educational [i.e., Teaching and Learning Services] administration" (Interview 6). However, the problem with the latter was that the hub had no relationship with the faculties' degree programs. One part of the issue was the small scale of the hub's operations and another that HTC was selective in terms of students it served. These reasons were summarised by HTC as follows: "Our strategy in a university which has people as many as a small town, was not to take part in the courses. The University organised courses on its own and we pursued our activities with the brave and eager who wanted to work with us" (Interview 14).

This strategy, however, proved difficult to maintain as teachers used HTC for their own purposes, as was noted by the hub: "Some teachers were enthusiastic, interested and convinced about the activity, so much that they used our work (...) to compensate for the absences [in their degree-oriented courses]" (Interview 5). The situation underlined the mismatch between HTC's extra-curricular entrepreneurial services and the University's degree programs. The issue was difficult to resolve as the hub was located outside the strictly regulated educational administration and could not introduce credited courses into the curricula. In 2016, the problem was still under consideration, as was observed by HTC: "At present, [we] really do not want to have a strong view in either direction as [we] can see the pluses and minuses in both" (Interview 5).

The administrative decision to start the Big Wheel reform was made by the Academic Affairs Council headed by the Vice-Rector for Education. As the reform was extensive,

the council followed traditional principles of the University's collegial administration (University of Helsinki, 2011) and organised its work into a set of projects commissioned to prepare the forthcoming decisions. Once the decisions were drafted, the council submitted them for the Rector's approval, thereby using the University's hierarchical decision-making structure. From the perspective of entrepreneurship, a significant decision was the introduction of a compulsory "working-life period" into bachelor's degrees to increase graduates' working-life competency and capacity in career planning (Interviews 8, 9). The key paragraph of the written Rector's decision (22/2016) read as follows: "All bachelor's degrees include a working-life period and training for expert duties with a total scope of at least 10 credits. The scope of training for expert duties is at least 5 credits and the scope of working-life period is at least 5 credits."

Once established, TLS began to design content for the module with teachers and faculty education co-ordinators. This was facilitated by an organisational reform of the boundaries between central administrative services, faculties and departments. In this situation, TLS' experience in organising career planning for students was made available to the faculties: "The career services have very meritoriously produced the [module's] content (...) [and] also consulted education programs about what kinds of content were needed and how it could be integrated into other studies" (Interview 9).

The content included reflective sessions in which students elaborated their evolving professional expertise and discussed it from the perspective of their career expectations. The extra-curricular entrepreneurship education provided by HTC could also be used. Even though HTC had formally become a company, its activities could be acknowledged in the curricula. However, no clear resolution concerning the relationship between HTC and the degree programs was achieved, and the issue was left administratively open: the students who participated in the hub's entrepreneurship programs could apply for credits by requesting that their previously acquired competence be accredited. As noted by the HTC: "The whole University has taken a step forward because of the Big Wheel reform. It put the working-life orientation at the very centre [of education]. Based on it, education co-ordinators of the campuses search for courses that can be included in this [module] and [realise] that those guys [in HTC] are doing what is needed" (Interview 14).

This section showed what structural changes implemented in curricula via traditional principles of the University's collegial administration and hierarchical decision-making were needed to make TLS capable of tackling the economic initiative, which had become the student entrepreneurship hub operating on the periphery of the University. It thus highlighted the ways in which the novel modes of professional management, such as experimental organisational development, can be dynamically combined with traditional university administration, which rests upon representative collegial preparation and hierarchical decision-making by academic leaders. The current university administration thus can be regarded as a diversified and flexible entity, which is capable of activating various kinds of administrative and managerial modes as well as related sense-making regimes and temporalisations in different situations, thereby increasing a university's capacity to couple itself with altering societal expectation structures.

Conclusion

Inspired by a systems-theoretical view of the university (Baecker, 2010) emerging in higher education research (Lenartowicz, 2015; Kleimann, 2019), this article improves understanding of the consequences of intensified societal engagement by universities. It shows how the politico-economic conditions of the society are observed and interpreted by different administration branches, and gradually translated into decisions about an entrepreneurship hub providing extra-curricular education for students. The analysis makes two contributions to the higher education literature and answers the research question about how the complex and vague initiative for advancing start-up entrepreneurship was processed through administrative and managerial modes of decision-making communication in internally differentiated professional administration structure of a university.

First, our analysis joins forces and empirically elaborates the “organisational dimension” Fumasoli et al. (2020) posit as a filter between “exogeneous pressures” and the University’s internal action. In this respect, we show that a university’s professional administration is a discrete (Hasse & Krücken, 2013) internal organisational form (Baecker, 2010) requiring functionally specified attention so as to facilitate understanding of how decision-making processes at universities are organised and co-ordinated. By analysing how each administrative branch interpreted and translated the external expectations into internally processable organisational problems and solutions, the paper also demonstrates how the differentiated administration varyingly resonated with its specific societal system references, i.e. education, the economy and politics (Krücken & Hasse, 2013). Furthermore, our analysis showed that the university administration is historically layered in how it adapts to the NPM-inspired managerial techniques that were gradually implemented in the national university policy in Finland since 1993 and became used within the University after the legislative reform of 2010. Some branches – e.g., TLS – followed traditional public administration principles, such as careful planning and hierarchical decision-making, while others, e.g. CCR more readily implemented the NPM-oriented techniques (Ferlie et al., 2008) with more options for temporalisation, including organisational experimentation combined with decentralised and flexible decision-making.

Thus, in contrast to Fumasoli et al. (2020), our analysis shows that the university administration involves complex dynamics that are varyingly aligned with national policy scripts enacting selected features of a global trends in NPM (Donina & Paleari, 2019). Instead of supporting those studies that emphasise the permeability of the boundaries between politics, economy and the university (Bleiklie et al., 2015; Lorenz, 2012), the present analysis shows how external inspiration becomes interpretatively observed and processed by the University’s administrative branches that observe divergent sense-making regimes and construct dissimilar temporalisations (Åkerstrøm Andersen & Pors, 2017) when developing novel organisational forms. Consequently, the emergence of the entrepreneurship hub investigated here may be considered a potentialising organisation (Åkerstrøm Andersen, 2020, 69), which allowed temporarily open-ended experimentation regarding the University’s multiple societal missions and stakeholders thus facilitating stability and change in the face of changing society.

Second, the paper poses a theoretical challenge for higher education research to understand better the dynamics of a university’s case-sensitive deployment of traditional public administration and the NPM-oriented managerial techniques. In our view, an adequate analysis of the complexities in administrative decision-making suggests detailed descriptive recovery of the varied temporalisations of

the issues processed. The decisions, including deferred administrative decisions, are always made in present by drawing upon variations in an organisation's memorised pasts and projected futures. Phenomenological sociology is thus needed to reconstruct such structurally conditioned past presents (Luhmann, 1976, 1995, 41–52). Inspired by the Luhmannian conception of time (e.g. Nassehi, 1994; Gehring, 2007), we reconstructed the varied temporalisations of the factually controversial economic initiative and illustrated how proper temporal logics of differentiated societal communication formats (e.g. education, science and economy), legitimised as unique sense-making regimes (Arnoldi, 2010) of the university's functionally specialised administrative structure, were operationalised during decision-making. By so doing, we added novelty to the literature which investigates the complex and multifaceted ways in which university administration interpretatively responds to the external societal expectations (e.g., Krücken & Hasse, 2013; Fumasoli et al., 2020).

Furthermore, by analysing how different administrative branches of the University made sense of the studied economic initiative, and how they processed it into a manageable form, our results elaborate upon those studies that seek to understand the change of universities in terms of various interpretative schemes used in administration. Instead of considering such schemes as constitutive of ideal typical constructs, such as organisational archetypes (Bruckmann & Carvalho, 2018), our study claims that evolving societal sense-making regimes are structurally coupled in the University's internal organisational observations and decision-making. For instance, the entrepreneurship hub hardly would have materialised if the branches of RS and CCR had not resonated with the economic sense-making regime and used flexible temporalisations that facilitated leeway (see Gehring, 2007) to allow the elaboration of the semantics that corresponded to the structural expectations set for the University by the national innovation policy, the City of Helsinki, and the local investors. TLS, which followed traditional public administration principles, saw the gap between its sense-making regime and the economic expectations but was unable to grasp it in terms of the degree programs' curricula, which according to the University's internal decision-making premises (i.e. rules of procedure), was the business of the faculties rather than that of the central administration. It was the Rector's decision that decisively synchronised the various time horizons of individual administrative branches, thereby also enabling TLS to contribute to the implementation of entrepreneurial education into the University's degree structures and curricula.

Another hierarchical, but in temporal terms accelerating, intervention occurred in the context of the budget cuts implemented by the University. Here, resting upon the previously formed organisational decision premises, the financial administration decided that the hub will be corporatised as had been done with the University's technology transfer services. Thus, in addition to guaranteeing the continuity of the hub's development, this decision made the hub more independent by it assuming the legal form of a limited company. Theoretically visible here are the subtle dynamics of interaction between traditional decision-making, modelled according to public bureaucracy, and the NPM-inspired, private sector-oriented principles. As empirical research on these dynamics is new and focuses primarily on formal governance structures (Bruckmann & Carvalho, 2018; Donina & Paleari, 2019) rather than actual, grass-roots decision-making processes by professional managers, an important goal of this article is to encourage other researchers to tackle these fine

dynamics in theoretically informed ways. To do so, systems-theoretical unfolding of temporalisations in administrative decision-making offers an adequate means to understand the current complexities about a university's societal engagements within the national systems of higher education and innovation.

Appendix 1: Interview data

Organisational context of the interviewee	Interview identifier	Date of interview
University's research services (RS)	1 (three participating interviewees)	20 January 2000
	2 (two participating interviewees)	12 September 2000
	3	2 April 2012
	4	8 March 2019
University's communications and community relations (CCR)	5	11 March 2016
	6	8 February 2019
	7	1 February 2019
University's teaching and learning services (TLS)	8	4 October 2019
	9	18 October 2019
University's financial services (FS)	10	10 February 2012
	11	29 February 2012
University's top professional administration	12	4 November 2022
	13	7 March 2019
Helsinki Think Company (HTC)	14	8 February 2019
	15	23 March 2000
External stakeholder organizations (including City of Helsinki, Ministry of Education and Culture, Finnish Innovation Fund Sitra, National Technology Agency (Tekes), Council of Rectors of Finnish Universities)	16	7 April 2000
	17	23 April 2000
	18	26 April 2000
	19	12 February 2012
	20	18 January 2012
	21	13 March 2012
	22	5 March 2019
	23	2 May 2019
University of Helsinki's technology transfer company	24 (two participating interviewees)	3 March 1999
	25	12 January 2000
	26	11 April 2005

Author contribution Both authors contributed to the study conception and design as well as data collection. The data analysis was undertaken by Juha Tuunainen. The manuscript was written by Juha Tuunainen and Kari Kantasalmi. Both authors read and approved the final manuscript.

Funding Open Access funding provided by University of Oulu including Oulu University Hospital. This research was supported by funding from the Academy of Finland (decision number 316545).

Data availability From the authors

Code availability Not applicable

Declarations

Conflict of interest The authors declare no competing interests.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Advisory Committee of the City of Helsinki and the University of Helsinki (20.11.2012). Minutes 1/2012.
- Åkerstrøm Andersen, N. (2020). Potentialization: Loosening up relations between public organizations and societal function systems. *Management and Organizational History*, 15(1), 65–89. <https://doi.org/10.1080/17449359.2020.1815548>
- Åkerstrøm Andersen, N., & Grønbaek Pors, J. (2017). On the history of the form of administrative decisions: How decisions begin to desire uncertainty. *Management & Organizational History*, 12(2), 119–141. <https://doi.org/10.1080/17449359.2017.1324800>
- Arnoldi, J. (2010). Sense making as communication. *Soziale Systeme*, 16(1), 28–48. <https://doi.org/10.1515/sosys-2010-0103>
- Baecker, D. (2010). A systems primer on universities. *Soziale Systeme*, 16(2), 356–367. <https://doi.org/10.2139/ssrn.1865626>
- Baraldi, C., Corsi, G., & Esposito, E. (2021). Meaning dimensions (Sinndimensionen). In C. Baraldi, G. Corsi, & E. Esposito (Eds.), *Unlocking Luhmann: A keyword introduction to systems theory* (pp. 141–144). Bielefeld University Press. <https://doi.org/10.1515/978383839456743>
- Besio, C., & Pronzini, A. (2011). Inside organizations and out: Methodological tenets for empirical research inspired by systems theory. *Historical Social Research*, 36(1), 18–41. <https://doi.org/10.12759/hsr.36.2011.1.18-41>
- Bleiklie, I., Enders, J., & Lepori, B. (2015). Organizations as penetrated hierarchies: Environmental pressures and control in professional organizations. *Organization Studies*, 36(7), 873–896. <https://doi.org/10.1177/0170840615571960>
- Boland, R. J., Jr. (2008). Decision making and sensemaking. Chapter 3. In F. Burstein & C. Holsapple (Eds.), *Handbook on decision support systems 1: Basic themes*. Springer. <https://doi.org/10.1007/978-3-540-48713-5>
- Bruckmann, S., & Carvalho, T. (2018). Understanding change in higher education: An archetypal approach. *Higher Education*, 76(4), 629–647. <https://doi.org/10.1007/s10734-018-0229-2>
- Buchinger, E. (2007). Applying Luhmann to conceptualize public governance of autopoietic organizations. *Cybernetics and Human Knowing*, 14(2–3), 173–187.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Sage.
- City of Helsinki (4.10.2012). Kaupunginjohtaja Jussi Pajunen: vastuullista välittämistä. The City of Helsinki's press release, publishable on 4.10.2012 at 11.00.
- Davies, B., Gottsche, M., & Bansel, P. (2006). The rise and fall of the neo-liberal university. *European Journal of Education*, 41(2), 305–319.
- Donina, D., & Paleari, S. (2019). New public management: Global reform script or conceptual stretching? Analysis of university governance structures in the napoleonic administrative tradition. *Higher Education*, 78(1), 193–219. <https://doi.org/10.1007/s10734-018-0338-y>
- Ferlie, E., Musselin, C., & Andresani, G. (2008). The steering of higher education systems: A public management perspective. *Higher Education*, 56(3), 325–348.
- Fumasoli, T., Barbato, G., & Turri, M. (2020). The determinants of university strategic positioning: A reappraisal of the organization. *Higher Education*, 80(2), 305–334. <https://doi.org/10.1007/s10734-019-00481-6>
- Gehring, P. (2007). Evolution, Temporalisierung und Gegenwart revisited. Spielräume in Luhmanns Zeittheorie. *Soziale Systeme*, 13(1–2), 421–431. <https://doi.org/10.1515/sosys-2007-1-236>

- Hämäläinen, E. (2014). How does a traditional public university meet the challenges of institutional autonomy? New modes of leadership and organizational development at the University of Helsinki. In D. A. Razak, A. Bladh, & E. Hämäläinen (Eds.), *Generating ideas for change and innovation*. DUZ Verlags- und Medienhaus.
- Hansson, F., & Mønsted, M. (2008). Research leadership as entrepreneurial organizing for research. *Higher Education*, 55(6), 651–670. <https://doi.org/10.1007/s10734-007-9081-5>
- Hasse, R., & Krücken, G. (2013). Competition and actorhood: A further expansion of the neo-institutional agenda. *Sociologia Internationalis*, 51(2), 181–205.
- Helsinki University Holding Ltd (1992). Sitra, Helsingin yliopiston Holding Oy ja tutkimuslöydösten kaupallistaminen: perustelumuistio. 2.9.1992.
- Hughes, O. E. (2003). *Public management and administration: An introduction* (3rd ed.). Palgrave Macmillan.
- Kantasalmi, K. (2015). Universities and the contingencies in politics of research, development and innovations: Finnish reform of doctoral programs. In I. Langemeyer, M. Fischer, & M. Pfadenhauer (Eds.), *Epistemic and learning cultures: Wohin sich Universitäten entwickeln* (pp. 115–137). Beltz Juventa.
- Kleimann, B. (2019). (German) Universities as multiple hybrid organizations. *Higher Education*, 77(6), 1085–1102. <https://doi.org/10.1007/s10734-018-0321-7>
- Kuoppala, K. (2005). Management by results at Finnish universities. *Journal of Higher Education Policy and Management*, 27(3), 345–355. <https://doi.org/10.1080/13600800500283692>
- Lenartowicz, M. (2015). The nature of the university. *Higher Education*, 69(6), 947–961. <https://doi.org/10.1007/s10734-014-9815-0>
- Lorenz, C. (2012). If you're so smart, why are you under surveillance? Universities, neoliberalism, and new public management. *Critical Inquiry*, 38(3), 599–629. <https://doi.org/10.1086/664553>
- Luhmann, N. (1995). *Social systems*. Stanford University Press.
- Luhmann, N. (1976). The future cannot begin: Structures in modern society. *Social Research*, 43(1), 130–152.
- Luhmann, N. (1986). *Ökologische Kommunikation*. Westdeutscher Verlag.
- Luhmann, N. (1996). Membership and motives in social systems. *Systems Research*, 13(3), 341–348.
- Luhmann, N. (2018). *Organization and decision*. Cambridge University Press. <https://doi.org/10.1017/9781108560672>
- Mansikkamäki, U. (2010). Yliopistouudistus Helsingin yliopistossa: Taustat, tavoitteet ja toteutus. Helsingin yliopiston hallinnon julkaisuja 70. Retrieved on 13 June 2023, from https://helda.helsinki.fi/bitstream/handle/10138/23898/hallinnon_julkaisuja_70_2010.pdf?sequence=1
- Ministry of Education (2007). *Teknillisen korkeakoulun, Helsingin kauppar korkeakoulun ja Taideteollisen korkeakoulun yhdistyminen uudeksi yliopistoksi*. Opetusministeriön työryhmämuistioita ja selvityksiä 2007:16. Helsinki.
- Nassehi, A. (1994). No time for Utopia. *Time & Society*, 3(1), 47–78.
- Niiniluoto, I. (2011). *Dynaaminen sivistysyliopisto: Sata puhetta ja kirjoitusta vuosilta 1987–2010*. Gaudeamus.
- Pfeffer, T. (2013). Global university system in world society. In E.G. Carayannis (Ed.), *Encyclopedia of Creativity, Invention, Innovation, and Entrepreneurship* (pp. 805–812). Springer. <https://doi.org/10.1007/978-1-4614-3858-8>
- Pfeffer, T., & Stichweh, R. (2015). Systems theoretical perspectives on higher education policy and governance. In J. Huisman, H. de Boer, D.D. Dill & M. Souto-Otero (Eds.), *The Palgrave international handbook of higher education policy and governance* (pp.152–175). Palgrave Macmillan. https://doi.org/10.1007/978-1-137-45617-5_9
- Rector's decision (22/2016). *Regulations on degree programs, degrees and competence produced at the University of Helsinki*. 18 February 2016.
- Russell, G. M., & Kelly, N. H. (2002). Research as interacting dialogic processes: Implications for reflexivity. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 3(3), Art. 18. <http://nbn-resolving.de/urn:nbn:de:0114-fqs0203181>
- Schimank, U. (2005). New public management' and the academic profession: Reflections on the german situation. *Minerva*, 43(3), 361–376.
- Schoeneborn, D. (2011). Organization as communication: A Luhmannian perspective. *Management Communication Quarterly*, 25(4), 663–689. <https://doi.org/10.1177/0893318911405622>
- Schomburg, H., & Teichler, U. (Eds.). (2011). (Eds.). *Employability and mobility of bachelor graduates in Europe: Key results of the Bologna Process*. Sense Publishers. <https://doi.org/10.1007/978-94-6091-570-3>

- Seidl, D., & Becker, K. H. (2010). Organizations as distinction generating and processing systems: Niklas Luhmann's contribution to organization studies. In S. R., Clegg (Ed.), *SAGE Directions in Organization Studies* (Volume I, pp. 205–228). Sage.
- Shepherd, S. (2018). Managerialism: An ideal type. *Studies in Higher Education*, 43(9), 1668–1678. <https://doi.org/10.1080/03075079.2017.1281239>
- Simon, H. A. (1997). *Administrative behavior: A study of decision-making processes in administrative organizations*. Fourth edition. The Free Press.
- Sørensen, M. P., Geschwind, L., Kekäle, J., & Pinheiro, R. (Eds.). (2019). (Eds.). *The responsible university: Exploring the Nordic context and beyond*. Palgrave Macmillan. <https://doi.org/10.1007/978-3-030-25646-3>
- The University of Helsinki's and the City of Helsinki's agreement on cooperation for entrepreneurship (2013).
- Tuunainen, J. (2001). Constructing objects and transforming experimental systems. *Perspectives on Science*, 9(1), 78–105.
- Tuunainen, J. (2005). Contesting a hybrid firm at a traditional university. *Social Studies of Science*, 35(2), 173–210.
- Tuunainen, J., & Knuuttila, T. (2009). Intermingling academic and business activities – a new direction for science and universities? *Science Technology & Human Values*, 34(6), 684–704.
- Tuunainen, J., Kantasalmi, K., & Laari-Salmela, S. (2021). Experimenting in the organisational periphery: Introducing extra-curricular entrepreneurship education in traditional research universities. In P. Eriksson, U. Hytti, K. Komulainen, T. Montonen, & P. Siivonen (Eds.), *New Movements in Academic Entrepreneurship* (pp. 48–66). Edward Elgar. <https://doi.org/10.4337/9781800370135.00012>
- Universities Act (558/2009). *Yliopistolaki*. Retrieved September 13, 2021, from <http://www.finlex.fi/fi/laki/alkup/2009/20090558>
- University of Helsinki (2003). *University of Helsinki: Strategic plan for the years 2004–2006*. Accepted by the Senate, 15.1.2003.
- University of Helsinki (2009). *Programme for leadership, management and support services 2010–2012*. Approved by the Senate of the University of Helsinki on 3 June 2009. Confirmed by the Board of the University of Helsinki on 16 September 2009.
- University of Helsinki (2011). *Helsingin yliopiston toimintakäsikirja*. Versio 3.3., 15.9.2011. Vahvistettu rehtorin päätöksellä 114/2010.
- University of Helsinki (2016). *Katsaus vuoteen 2015: 375 vuotta työtä tieteen hyväksi*. 18 March 2016.
- University of Helsinki (2017). *Katsaus vuoteen 2016 ja strategiakauteen 2013–2016*. 29 March 2017.
- Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the process of sensemaking. *Organization Science*, 16(4), 409–421. <https://doi.org/10.1287/orsc.1050.0133>
- Yliaska, V. (2015). New public management as a response to the crisis of the 1970s: The case of Finland, 1970–1990. *Contemporary European History*, 24(3), 435–459. <https://doi.org/10.1017/S0960777315000247>

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.