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# Paralysing parallelism? Co-existing agile and traditional organisational paths in large-scale telecommunications

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## Abstract

Previous research on co-existing paths has usually revolved around the development of a novel path that finally supersedes an existing path. In contrast, this study introduces an empirically grounded conception of the dynamic interplay between two intentionally co-existing organisational paths, one path persisting although in decline and one emergent path, where parallelism between the paths prevails. Our research is based upon a longitudinal, explorative case study at a large-scale telecommunications corporation, which tackles the challenge of introducing a new organisational path (i.e. an agile approach) while at the same time—intentionally and for good reasons—sticking to an older, well-established organisational path for some of its operations (i.e. a traditional management approach), leading to a fadeaway from the old path. We contribute to the literature by elucidating the evolving interaction dynamics of two parallel paths and how they give rise to a phenomenon we term paralysing parallelism in organisational paths. Towards this end, we elucidate the role of endogenous and exogenous self-reinforcing mechanisms.

## KEYWORDS

agile approach, organisational path dependence, parallel paths, paralysing parallelism, path creation, self-reinforcing mechanisms, traditional approach

## STATEMENT OF THE ISSUE

The existence of *parallel paths* is of high managerial relevance (Sydow et al., 2012a). Oftentimes, multiple paths are explored in the context of co-existing technologies (e.g. Sydow et al., 2012b). However, regarding organisational paths, research tends to focus on either path dependence or the abandonment of an existing path in favour of a novel path. As for the emergence of a new path, *path creation* represents perhaps the most prominent line of research. In this case, the role of intentionally breaking with existing paths to avoid the negative consequences of path dependence is explored (Castaldi & Dosi, 2006; Garud & Karnøe, 2001).

In contrast, what remains comparatively unexplored as yet is the persistence of an established organisational path while a novel organisational path unfolds in parallel and is *intended* to persist as well. Few inquiries exist that concentrate on parallel paths, although with a different

focus. For instance, Bergek and Onufrey (2013) focussed on multi-technology companies that offer different alternative technologies at the same time. The authors mentioned the possibility of parallel technological paths and tentatively hinted at path interactions. Bothello and Salles-Djelic (2018) suggested examining the interactions of institutional paths with regard to the evolution of environmentalism. Similarly, Stache and Sydow (2023) explored co-existence, although with a focus on a network of actors in a health-care setting, which is different from our *intra-organisational* setting. Thereby, the authors' focus rests on *path breaking* (by path creation), whereas we elaborate in concrete terms on *path creation* activities intentionally building up a *parallel* organisational path and hence, easing out the traditional one, resulting in a fading away of the established path. Moreover, we look at the upcoming dynamics between intendedly *co-existing* competing organisational paths and their development over time. Path co-existence and evolving

path interactions considering *organisational* path dependence and path creation within one organisation remain, to the best of our knowledge, rather uncharted territory. This motivates our explorative guiding research question: *How do the dynamics and tensions between an established and a new organisational path in creation unfold?*

To answer this question, we collected data from a longitudinal case study at a large-scale information and communication technology (ICT) company. We accompanied a transformation programme within the company, which was planning and pursuing the implementation of an agile approach (e.g. the usage of scrum methodology) for a major part of the company (i.e. the new path in the making), while intentionally sticking to the traditional approach (e.g. waterfall methodologies) for some of its operations at the same time (i.e. the persisting traditional path). Our experiences of the long-winded and strenuous transformation efforts enable an extremely detailed analysis of upcoming tensions in such situations of opposing parallel organisational paths.

In the current study, we contribute to the literature as follows: First, we explore the idea of intentionally maintaining two parallel organisational paths. Towards this end, we elucidate the dynamics and tensions by focussing on self-reinforcing mechanisms (SRM). Second, we put forward the potential for paralysing the parallelism of organisational paths.

## THEORETICAL POSITIONING: TOWARDS CO-EXISTING PATHS

### On the traditional concepts of path dependence and path creation

Following the conceptions of David (1985) and Arthur (1994), the phenomenon of path dependence has gained increasing popularity in different academic debates (e.g. Sydow, Schreyögg, & Koch, 2009). The downside of this popularity is that the term *path* is used in many different ways (Sydow, Schreyögg, & Koch, 2020). To use the theory of path dependence meaningfully for management research, we draw upon Sydow, Schreyögg, & Koch (2009), who build upon David (1985) and Arthur (1994) when they develop a *three-phase model*, which has received much attention in research on organisational path dependence. It defines and delineates three different phases in the emergence of paths, separated by a critical juncture and the lock-in, in each of which different framework conditions apply with regard to the actors' freedom of action and decision-making (Sydow, Schreyögg, & Koch, 2009).

The first phase of path emergence is characterised by high degrees of freedom for decision-making. However, even in *phase I*, no completely free choice of options is available, but a broad decision space still exists. Options outside this space cannot be selected because of previous

events, decisions or external conditions. Nonetheless, at this early stage, further developments are *unpredictable* and *non-ergodic*. A certain decision or event within phase I may unintentionally, and unnoticed, set in motion a *positive feedback process*, initiating increasing underlying dynamics that prospectively influence further decision-making. Arthur (1994) referred to these events, which at first glance appear insignificant, as *small events* (Arthur, 1994, p. 14); in later literature, the term *critical juncture* (e.g. Sydow, Schreyögg, & Koch, 2009, p. 691) is applied to such inconspicuous events with a subsequently major effect on further developments. Within the three-phase model, the *critical juncture* is understood as the triggering point in time at which a path starts emerging and so constitutes the transition point from phase I to phase II (Sydow, Schreyögg, & Koch, 2009).

While no clear path is yet discernible in phase I, it becomes increasingly discernible in *phase II*, where the decision space is significantly narrowed, approaching the evolving path. Triggered by the critical juncture, positive feedback processes are set in motion and increasingly dominate further decision-making. The actors in the second phase still have the possibility to select between different alternative options, and development in the direction of the upcoming path dependence is not yet inevitable at this stage. However, positive feedback processes tempt them to replicate similar decisions again and again and to reproduce previous action patterns. The drivers behind this path formation process are so-called SRM (David, 1985; Sydow, Schreyögg, & Koch, 2009). SRM refer to positive feedback processes, driven by 'sequential decisions [grooving] out an advantage that the system finds [...] hard to escape from' (Arthur, 2008, p. 9). With reference to Arthur (1994), the following mechanisms are highlighted as significant for *organisational* path formation processes: adaptive expectation effects, complementarity effects, coordination effects and learning effects (Sydow, Schreyögg, & Koch, 2009, 2020). Sydow and colleagues assumed that SRM operate behind the backs of actors and quasi-automatically culminate in a lock-in. This lock-in is difficult to escape as the SRM continue to operate largely behind the backs of the actors. Thus, with the increasing reproduction of similar action patterns within phase II, a path starts forming. The unpredictability and non-ergodicity start to vanish, and the evolving path gains an increasingly deterministic character. The end of phase II is characterised by a status called *lock-in*. From then on, all decisions and further developments appear to be predetermined by previous courses of action, and deviations are not possible or feasible anymore. The state of being locked in is characterised by *inflexibility* and potential *inefficiency*.

With regard to *phase III*, Sydow, Schreyögg and Koch (2009) assumed that a path within phase III is not completely determined but is a kind of corridor, characterised by an extremely strong restricted scope of action. This strongly restricted scope of action is called *path*

*dependence*. Path dependence should not be equated with inefficiency and negative consequences. On the contrary, dependence on a successful path can turn out to be very fruitful. The point in time at which the environment changes and the locked-in path thus turns from efficiency to inefficiency is called the 'rationality shift' (Rothmann & Koch, 2014). In such situations of changing boundary conditions, path dependence becomes harmful because of the great difficulties in freeing the development from inefficiently entrenched action patterns.

The central point of criticism of the traditional notion of path dependence concerns the agency of the actors involved and has been addressed frequently in recent literature (e.g. Fortwengel & Keller, 2020; Garud & Karnøe, 2001). According to the basic concept of path dependence, the process of becoming path dependent might happen by and large 'behind the backs of the agents' (Sydow, Schreyögg, & Koch, 2020, p. 722). Subsequently, only external shocks, catastrophes, crises or internal coincidental processes result in path-breaking change (Arthur, 1994). Thereby, a shift to new alternatives was assumed to happen by chance and to be unacknowledged (i.e. 'behind the backs of the agents'). However, more recent approaches from path research increasingly propose the contradictory idea of active path creation by 'mindful deviation' from previous action patterns (Garud & Karnøe, 2001) and assume that actors can reflect on situations and actions, act in a self-determined way and, thus, shape paths actively and intentionally (Fortwengel & Keller, 2020; Meyer & Schubert, 2007).

## Towards an analysis of co-existing paths

Taking a look at the *traditional* conceptualisations of path dependence, regardless of their disciplinary anchoring, they have a common focus on the development of a *single path*, be it with regard to path dependence (Sydow, Schreyögg, & Koch, 2009) or path creation (Garud & Karnøe, 2001). Venturing beyond this focus, scholars within different research areas have now started raising the idea of *multiple paths* and even elaborate on their reciprocal *interactions* (Hassink, Isaksen, & Trippel, 2019; MacKinnon et al., 2019).

Towards this end, Sydow et al. (2012a) put forward the notion of parallel *technological* paths within the semiconductor industry. They captured active involvement in endeavouring for an extension of an existing technological path (optical lithography), while at the same time aiming towards the creation of alternative novel technological paths in parallel. The authors touched upon the topic of the *interplay between* different technological, institutional and organisational paths but fell short of further exploring the topic as they assumed that only one path could finally prevail. Along similar lines, Bergek

and Onufrey (2013) clearly indicated that technological path dependence is not limited to single path patterns. They showed in their study that 'different technologies that have co-existed over long periods can be conceptualised as multiple technological paths rather than a unitary cumulative progression' (Bergek & Onufrey, 2013, p. 1289). Later, Onufrey (2017) highlighted *path interactions*, mainly focussing on their positive impact on each other. With their conception of multiple paths, Bergek and Onufrey (2013) also refined the traditional view on *radical innovations* in the light of path creation. They perceived the traditional concept of path theory as enabling two different scenarios: first, the development of an inevitable lock-in (Vergne & Durand, 2011), and second, the replacement of old paths by the creation of new ones (Araujo & Harrison, 2002; Garud, Kumaraswamy, & Karnøe, 2010). None of these perspectives allows for continuity between a previously existing path and a new one. Instead, radical technological change is seen as discontinuous and mainly driven by exogenous forces. Conversely, Bergek and Onufrey (2013) asserted that even radically new technological innovations can be based partially on old paths.

In the context of technology entrepreneurship, Agogué et al. (2015) raised the idea of multiple paths and spoke about the possibility of *shifting from one path to another*. Relatedly, with regard to technological innovations, Singh et al. (2015, p. 646) stressed the notion of *interdependencies between multiple paths*.

Within an *organisational context*, Maielli (2017, p. 104) proposed that two paths might *co-exist within the same organisation*, whereby path creation and path dependence might co-occur. Singh, Mathiassen, and Mishra (2015) went even further by explicitly addressing the need to understand the *interdependencies between multiple paths* and to elaborate on how they become entangled with one another through certain *organisational practices and arrangements*. Similarly, Bothello and Salles-Djelic (2018) stressed the need to examine path interactions in realms characterised by multiple organisational paths and called for identifying mechanisms of organisational change.

Recently, Sydow, Schreyögg and Koch (2020) pointed out that they still adhere to their initial idea of path dependence (Sydow, Schreyögg, & Koch, 2009) and, thus, basically suggested that an organisation is dominated by a *single* organisational path. However, theoretically, their conception is open to multiple paths in parallel, as they stress the assumption that *if* such parallel organisational paths existed, this scenario would be more likely to happen in an organisation with different strategic units and decentralised organisational structures; the assumption here being that in a large concern structure, parallel developments might have more room to unfold. This set up would allow different parts of the organisation to act with a certain degree of autonomy and enable them to follow their own strategic directions

simultaneously. This freedom of choice would be even more blatant in the collectivities of organisations (e.g. strategic alliances or networks), which are polycentric systems by their very nature (Stache & Sydow, 2023; Sydow, Schreyögg, & Koch, 2020).

In summary, first hints at parallel paths have already been formulated in different debates. However, most publications focus on technological trajectories, whereas we still lack a thorough understanding of parallel organisational paths and their management (Bothello & Salles-Djelic, 2018).

## RESEARCH SETTING AND METHODS

### Research setting

Our study is based upon a 2-year in-depth case study (01/2018–03/2020; Yin, 2018) at a large-scale European company in the ICT industry. ICT company (a pseudonym) has more than 200,000 employees and is active in more than 50 countries.

Our *sampling strategy* was theory driven (Patton, 2014), as our research team has a long-standing research interest in organisational paths, and we aimed to find a research context based on our interest in (parallel) organisational paths. However, in effect, sampling was also opportunistic, because of being contacted by chance by an unknown representative of an ICT company who was seeking cooperation with our institution (Patton, 2014). The ICT company was selected because of its bureaucratic and centralistic heritage and path-dependent engagement with traditional approaches (e.g. the waterfall methodology and complementary organisational and managerial structures), while at the same time trying to launch a new path by means of introducing the agile approach (e.g. manifested by means of introducing the agile methodologies Scrum or Kanban and complementary organisational and managerial structures; for a conceptual distinction between traditional and agile approaches, see Gemino, Reich and Serrador, 2021 as well as Tonnquist, 2008). To clarify our definitions of working in an agile versus a traditional manner, we follow Gemino, Reich and Serrador (2021) and make a

distinction on the level of analysis among approach, method and practices (cf. Table 1). The organisational *approach* refers to the structural and processual organisation and, therefore, to the highest level of abstraction when describing how a project will be designed and governed. The *method* implies more detailed operational guidance, whereas *practices* refer to concrete activities when operationalising a method.

One may question if sprint plannings, daily standup meetings, retrospectives and so on should be considered agile rituals or agile practices. We follow Pentland and Hærem (2015), who state that ‘routines are seen as practices that are situated in a social or material context’ (Pentland & Hærem, 2015, p. 465). In our manuscript, looking at sprint plannings, daily standup meetings and so on represent the lowest level of analysis, the practice level, including what some may term as rituals. We focus on distinguishing this level of analysis from the higher-laying ones, namely the method and the approach level.

We gained access to a major subsidiary of the ICT company, which works primarily with approximately 10,000 IT specialists to provide the internal IT infrastructure for the other subsidiaries of the ICT company. The team of authors got into contact with the company by the end of 2017. With the start of a new agile transformation programme on 1 January 2018, the first author spent time collecting data for approximately 28 months, being able to conduct interviews and participant observation and collect large amounts of internal company data.

### Data collection

Our data collection had two different foci, which run in parallel; however, their priority shifted over time. First, we draw on *retrospective data* to analyse sources as well as evidence for potential path dependence regarding the prevalent waterfall-driven management and to gain a first understanding of the ICT company, its history, its development and its current operations. Second, we collected *real-time data* for more than 2 years, tracking the efforts to break away from traditional organisational structures and processes, while employing agile methodologies in parallel (e.g. Scrum).

TABLE 1 Levels of analysis.

Level of analysis	Traditional	Agile
(Organisational) Approach	Traditional approach, characterised by clear hierarchic, bureaucratic, top-down guiding structures, providing stability and reliability in a predictable environment and following a well-understood, achievable set of objectives.	Agile approach, characterised by a higher degree of flexibility, dealing with a nonlinear and dynamic set of objectives because of an increasingly fast-changing and unpredictable environment.
Method	In our case: Waterfall-Project management methodology.	Agile methodologies such as Scrum, Kanban and hybrid versions of them.
Practices	In our case: e.g. Scoping-meetings, project status meetings, jour fixes.	E.g. Sprint plannings, daily standup meetings, retrospectives, review-meetings.



For *triangulation* purposes, we collected data from *three different sources* (Yin, 2018): first, we conducted 29 *structured interviews* (average length: 60 min) and 34 *semi-structured interviews* (average length: 44 min) across all hierarchical levels and across functions. Second, 539 h of *participant observation* (189 h on the premises, 350 h by means of telephone conferences or web-based exchanges, totalling 224 *pages of notes*) were logged. Third, 455 *internal documents with 4711 pages* (see Table 2 for an overview) and 2572 *e-mails* complement our case study database.

*Interview data* were collected during three overlapping waves (cf. Table 3).

Within the first wave, we conducted nine interviews with scrum masters and members of software development teams who were involved in a transformation process themselves, shifting from waterfall methodologies to scrum teams. Those interviews gave us an understanding of the current situation within development teams and raised the first ideas about why teams were struggling with their

transformation and what organisational factors inhibited their intentions to shift. In a second wave, we interviewed 20 different scrum masters using a refined, full-structured questionnaire based on the initial one and elaborated in more detail on their current transformation situation within their teams, recording concrete success factors and inhibiting factors for change. Within the third wave, we immersed ourselves in an in-depth conception of the transformation process throughout the company. Our interview guideline comprised two main topics: first, the perceived sequences of the transformation process on an organisational level and regarding the interviewee's immediate working environment. Second, we focussed on the predominant tensions and the search for their sources. As is common with inductive research approaches (Yin, 2018), an immediate retrospective reflection of each interview led to a continuous improvement of the questionnaire, sharpening its focus regarding our research objective and our respondents, stemming from different hierarchical levels and functions to triangulate perspectives.

TABLE 2 Field documents.

Type of document	Number of documents	Type of focus	Content of documents
Blog entries	271	Retrospective and real-time data	Posted blog entries within the intranet with relation to agile methodologies, transformation ambitions, inhibiting factors as well as internally posted comments by supervisors, colleagues and employees
Company agreement	1	Retrospective data	Company agreement on flexible organisation
Presentation slides	126	Retrospective and real-time data	Presentations regarding the transformation kick-offs as well as more specific target pictures, milestones and 'how-tos' across organisational levels from an individual level to enterprise level
Status reports	2	Real-time data	Status quo of current application environment
Working paper	29	Retrospective and real-time data	Instructions or handouts on agile methodologies and the introduction of agile working on different levels of the organisation
Others	26	Retrospective and real-time data	Newsletters, screenshots of shared graphics, excel files, docx files and questionnaires mediately or immediately related to the transformation process and agile working

TABLE 3 Data collection via formal interviews through three partly overlapping waves.

Wave #	Time frame	Number of interviews	Kind of interviews	Purpose of interviews
Wave 1	24/01/2018–29/01/2018	9	Structured	Gaining a first overall understanding of the past and current situation in the organisation and the broad transformation ambitions.
Wave 2	07/02/2019–19/12/2019	20	Structured	In-depth understanding of progress and maturity of the transformation. Identification of prevalent success factors and inhibiting factors of current transformation situation.
Wave 3	14/06/2019–09/03/2020	34	Semi-structured	In-depth understanding of transformation phases and their development over time. Grasping the prevailing areas of tension and mutual dynamics between the traditional parts of the organisation and the new ones from various perspectives (ranging over different hierarchical levels and functions throughout the organisation).

Furthermore, we took part in meetings as participating observers, starting with occasional kick-off or information events, and beyond that, ranging from participating in daily meetings within the transformation team we accompanied during the whole data collection period to visiting daily meetings of different software development teams, and finally, meetings of the management board.

A group of key interest for participant observation was the *transformation team*, which had an extremely strong focus on the planning and implementation of transformation ambitions throughout the organisation. By accompanying this team during the whole period of data collection, we were able to experience firsthand how the transformation was planned and executed, as well as how the company tried to convince and motivate different parts of the organisation to accept and adopt the transformation, as well as how struggles arising throughout the transformation process were tackled. The *software development teams* were another group. They were already in their transformation phase or about to start their transformation soon, exhibiting an extremely strong operational focus. Those meetings helped us gain insights into the feasibility of the previously planned agile approach.

Finally, attending *management board* meetings served to better comprehend strategic choices within the organisation. Thus, we gained an in-depth understanding of the 'higher level' intentions of the transformation measures.

## Data analysis

In terms of *data analysis*, we present the findings in a coherent manner. However, the data analysis was by nature fuzzy and not linear but rather iterative at times, jumping between theoretical insights gained from the data (Yin, 2018), although we conducted the analysis roughly along three overarching stages: first, we collected all the data in a case study database to heighten reliability. The 'raw data' were based upon the three aforementioned sources (interview transcripts, field notes and archival data). Second, we built separate 'cases' in our case study database (Yin, 2018) for traditional and agile methodologies and teams. Third, we aggregated insights from our empirical data, as is a common practice in longitudinal and in-depth case study research, by constructing different categories to come up with the way paths co-existed and interacted with one another. We employed MAXQDA software, which allows the import of all collected data (interview transcripts, field notes and archival data) and supports the subsequent coding process. We checked the reliability of the constructed category framework by using co-analysts from the ICT company. Our 29 structured interviews from waves one and two were discussed and reflected on with two independent members of the transformation team who participated in the

interviews as 'silent listeners'. Additionally, the coding of our qualitative semi-structured interviews was reflected on, questioned, discussed and finally validated separately by three independent team members of the transformation team, as well as by a scrum master and agile coach. This was deemed to triangulate perspectives and ensure that our implications are also sound for managerial practice and not detached from reality (van de Ven, 2007).

## TENSE INTERPLAY OF CO-EXISTING PATHS IN THE ICT COMPANY

After portraying the traditional and agile approaches as organisational paths, we illustrate how the introduction of the agile approach is promoted and how this is enabling the parallel creation of a new organisational path in line with the agile approach. We base these elaborations on the creation of the new path and distinguish between the evolution of SRM externally and internally with regard to the respective path. Afterwards, we focus on breaking with traditional SRM by creating new ones. Subsequently, we depict the concrete *interplay* between the traditional approach (in operation) and the agile approach (in creation) and elaborate on its development over time. Finally, after highlighting the dynamics between the traditional and the agile approach, we seek to explore why parallelism is still forced and inevitable in an organisational context.

### On the introduction of the agile approach by creating SRM

ICT planned its transformation from an 80% traditional and 20% agile way of working to a 20% traditional and 80% agile approach within 3 years (field notes [FN], 31 January 2018). Hence, it appears obvious that the aim was to reduce the traditional approach while at the same time introducing an agile one. Therefore, in addition to the already-existent SRM regarding the traditional way of working, which we term *traditional SRM*, ICT started to actively introduce *new SRM*, hence supporting the new way of working. We observed that all SRM were, at least at some point in time, present for both the traditional and the new way of working (cf. Table 4).

Furthermore, we were able to allocate them to the three levels—approach, method and practice—relating to Gemino, Reich and Serrador (2021). On the *approach level*, we observed exogenously evolving SRM, namely adaptive expectation effects, complementarity effects and coordination effects. ICT communicated a substantially clear organisation-wide vision, expecting that 80% of the organisation's workforce would work in the form of the agile approach within the next 3 years. To do so, they installed a mechanism that they termed the 'evangelist principle' (I3). It was ICT's goal to find evangelists,

**TABLE 4** SRM for both the traditional approach and the agile approach.

Self-reinforcing mechanisms	Data source	WF-management	Agile management
Coordination effects	Archival data	‘Highly interwoven process landscape’ (archival data, 02 November 2018)	‘The [traditional] budgeting and release processes are a permanent brake in the machinery. If we can manage that, then our transformation will fly on its own.’ (archival data, 03 April 2017)
	Interview data	‘Of course we have complicated software implementation processes here in our company, or change over processes, or or or. And as soon as you leave the edge of your project, you have an enormous need for coordination. When you step over the edge, you need coordination.’ (I2)	‘In the beginning, there were many discussions about the sprint length of different Scrum teams. [The first agile teams] worked in the common 2-week cycle, while others preferred and insisted on a 3-week cycle. [Several teams] working on a related overarching topic, [...] started to synchronise themselves in a fix 2-week cycle. [Further teams] got increasingly pulled along into the same overarching tacting, finally resulting in our so called ‘heartbeat’ of the organisation. [...] The organisation can only work, when we all follow the same heartbeat.’ (I11)
	Field notes	‘The whole organisational complex interplay of today developed over history.’ (FN, 15 January 2018)	‘With such a transformation you tie up extremely many resources, which in the beginning return nothing despite organisation and culture.’ (field notes, 02 June 2020)
Complementary effects	Archival data		‘The interlinking of the development teams of a digital hub with outwards is defined [due to synergy effects].’ (archival data, 12 June 2019)
	Interview data	‘Yes, it’s difficult, because the boundary conditions are still pretty classic, in terms of budget and timeline, reporting and so on. You can still see that the people are quite classical, I’d say.’ (I6)	‘And it also comes along that we do not only try to become agile but with that also try to standardise so that employees can change between teams without having to learn new methodologies or tools of methodologies.’ (I17)
	Field notes	‘Teams would like to work agile, however are not able to work agile, because those methodologies are simply not complementary to their direct working environment, forcing them to stay in the waterfall logic.’ (FN, 08 February 2018)	‘Trying to adapt our processes, to make them complementary to agile working, for example, agile budgeting, free release line. The more compatible those surrounding processes are, the more teams will be able and willing to work agile.’ (FN, 01 March 2019)
Learning effects	Archival data	‘Historically grown organisational structure [...]’ (archival data, 19 December 2017)	‘It is not sufficient, if we all hurry to some [agility] trainings. [...] It is important to develop a feeling for working agile. [...] You learn working agile by doing it, not in calls, WBTs or daily workshops – somehow plausible anyways.’ (archival data, 27 June 2019)
	Interview data	‘I always say that when [...] because of this classical world, I have made my career. And now all of a sudden, as the head of a gang, I have to think agile and evaluate agile. And from what wealth of experience should I do that. And then of course you take the old familiar and tried and tested, because you don’t know how to do it differently.’ (I9)	‘So to speak, almost nobody learns about agile methods and somehow says the more he takes away from them the more he rejects them, but the approval increases.’ (I12)
	Field notes	‘The prevailing highly complex processes (including budgeting, release processes etc.) developed and improved over decades into a highly complex process landscape, perfectly adapted to waterfall methodologies.’ (FN, 23 January 2018)	‘When the first pilot projects were successful and we know how to proceed, more and more agile teams will follow.’ (FN, 23 January 2018)

(Continues)



TABLE 4 (Continued)

Self-reinforcing mechanisms	Data source	WF-management	Agile management
Adaptive expectations effects	Archival data		'We need to move to secure our future and to be a deciding competitive advantage for [our company]. The direction is clear, even if not in detail. The targets are demanding, however reachable, if we move 'how' and 'what' and if we all move within [our company]. Then our work will stay interesting and fun.' (archival data, 24 September 2018)
	Interview data	'In history it always was like that. That a [chosen] circle of executives [and] deciders thought about, how [the company] has to look like tomorrow [and then they follow].' (I18)	'The individual must certainly participate, if let's say the team decides: we're going to be agile. Then the individual cannot say: I do not want to. If the organisation says you are going to make an agile project out of it, then that's the way it is. Then I can't say as an individual: I don't want that.' (I2)
	Field notes		'I feel that here exists kind of a normative pressure. Of course, it is our own choice, if we want to work agile, but if you would have to leave your team, if you do not work agile with them, what kind of choice is that?' (FN, 07 June 2019)

convince them to engage in agile working and distribute their enthusiasm throughout the company. Furthermore, ICT increasingly elaborated and communicated the 'scaled agile framework' (I6) and clearly defined the future approach as working in an agile manner throughout the organisation. In contrast to the previously mentioned tactic of a few agile teams working in parallel, the scaled agile framework included an approach to organise all the organisational processes within ICT across departmental and functional boundaries (e.g. budgeting processes and release processes). In this regard, it could also be observed that after a certain time of exogenously evolving SRM, they started to develop endogenously, which one employee pointed out very poignantly. He mentioned how much energy ICT needed to push the 'flywheel'. However, when the 'flywheel slowly starts turning, then it develops momentum, turns and will always turn further' (FN, 21 February 2018).

On the *method level*, the overall development looked similar. After a certain time of exogenously evolving SRM, the self-reinforcement started to become endogenous, reinforcing itself through the continuous performance of agile methods. On this level, we were able to observe all four kinds of SRM exogenously evolving. In addition to the great engagement in teaching and coaching agile methodologies, such as the practice level, ICT clearly communicated its expectations for certain departments, teams and individuals to engage in certain agile methodologies. Furthermore, ICT actively elaborated concrete first frames regarding how to organise several agile teams working simultaneously on common projects. They called the common tacting of agile working teams

the so-called 'heartbeat' (I11) of the organisation. The purpose of this 'heartbeat' was to facilitate exact coordination and cooperation between the teams to enable smooth workflows. Again, after a certain time, these exogenously evolving and actively set SRM developed into more endogenously evolving SRM.

On the *practice level*, it was observable that right at the beginning of the transformation programme, ICT started to expend many financial and human resources in workshops, trainings and continuous individual coaching on agile practices. It was the aim to continuously repeat and improve the performance of agile practices and increasingly establish them as habits. For instance, even the transformation team itself worked in an agile modus, coordinating different work forces regarding the organisation's 'heartbeat' 'to internalise it' (FN, 3 January 2018). At the same time, ICT has already started to communicate its expectations for several departments, teams and individuals to start engaging in agile practices. However, this was more a by-product of the generally communicated expectation to engage in agile *methodologies*. It was observable that after a certain time of engaging with and learning to use agile practices, they were *internalised and self-perpetuating*. The better and more flawless the performance of agile practices got, the more likely the teams were to engage further in these practices and improve them, leading to a pull effect. Additionally, individuals, teams and departments installed 'communication platforms' to ask questions, talk about best practices and provide the opportunity for exchange regarding those practices. At this point in time, self-reinforcement started to shift from a solely exogenous evolution towards an

endogenous one. The more people engaged in agile practices and talked about them, the more other teams learned from them as well and started to communicate more about their successes. Subsequently, the more agile practices were performed in a similar or even synchronous manner, the better the communication and coordination were between them. Hence, after a certain time and effort in exogenously engaging self-reinforcing learning mechanisms, endogenously evolving learning effects and resultant further complementation and coordination effects developed automatically and SRM were unleashed, turning the vision of transforming the organisation towards working for 80% in line with the agile approach into reality.

### On fading away the traditional approach by creating the agile one

While the creation of all four SRM could be observed regarding the introduction of the agile approach, the breaking of those mechanisms regarding the traditional approach turned out to be more difficult. There were no measures to be observed separately focussing on breaking with the traditional way of working, independent of the introduction of agile working. It appears instead that 'easing SRM' always came along with the creation of new SRM superimposing the traditional ones. For instance, the *expectation* of engaging in the traditional approach was prevalent until the vision of agile working had been distilled. There was nobody communicating 'we expect you to stop the waterfall methods' without alluding to the alternative. Once this vision and the expectations in the direction of agile working had taken shape, the expectation of engaging with the traditional approach decreased simultaneously (FN, 26 April 2019). The expectation effect was *superseded* and lured people subtly in, making it ever more attractive to engage in agile ways of working.

Regarding *learning effects*, we were unable to observe a clear reduction of learning effects. Instead, those effects remained during the whole transformation period, repeatedly 'pulling back' agile teams after experiences of failure, as one interviewee pointed out, 'and what does every human being do under pressure? Fall back into old patterns' (I5). However, this 'pull' in the direction of traditional waterfall methodologies and practices slowly started fading away with the increasing development of learning effects in agile methodologies and practices. The more successful agile teams were in their way of working and the more pilot projects were successful, the more they tended to become more mature in agile working and consequently drifted away from waterfall methodologies (FN, 19 December 2019). However, actively breaking with traditional learning effects could not be observed.

The same holds true in relation to *coordination effects* and *complementarity effects*. There were no measures

actively trying to disturb and hinder the coordination and complementarity effects within waterfall teams and their related operations. Instead, hurdles to the coordination and complementarity of agile working were bypassed, and by doing so, the pull in the direction of agile working increased behind the backs of the actors, resulting in a fading away of the traditional method of working (archival data, 25 June 2018).

### On the interplay between the traditional and the agile approach

The above-named dynamics focus on the influence of the existing traditional approach on the introduction of the agile one. However, as both ways of working are to some extent competing with each other, dynamics in the direction from the agile approach to the traditional one were also observable, although with only negative tendencies.

Exploring the *development of the path dynamics over time*, at the very beginning of the introduction of the agile approach, supported in part by withdrawn 'waterfall resources' and in part by additional resources, positive dynamics were present. In summary, the traditional approach provided the necessary monetary and human resources to enable ICT to gradually approach the first small entities working in an agile manner. In addition to *providing resources*, the traditional environment served as a *stable backbone*, backing up failures in the 'trial and error' phase and grafting 'to earn the company's daily bread' (I21). Closely related, it also served as a stable backbone regarding the *organisational culture*, giving employees a feeling of stability in their working environment, of knowing themselves 'to have a place and a task' within that environment, of belonging and of personal importance (FN, 14 May 2019). However, the historically complex and stable *organisational context* of ICT has been both a blessing and a curse. Its complex and interwoven operational structures come along with strong *dependencies* on various existing long-winded processes (e.g. approvals) and, therefore, lower the autarchy of innovating subunits and thus their scope of innovation. Analogously, the IT-architectural structures are similarly complex, interwoven and interdependent, aggravating any deviations from the existing monolithic structure and hardly allowing people to work in an agile manner (archival data, 01 February 2019). Moreover, the *traditional mindset* and *organisational culture* within the company lead to a negative dynamic, hindering agile working as well. While the organisational culture, on the one hand, provides a feeling of stability, on the other hand, it is perceived as demonstrating the strongest aversion to change and as the most robust hindrance during the whole transitional phase of ICT (I20).

Finally, as one can imagine, the withdrawal of resources and working capacity from traditional teams to

agile teams diminishes the traditional way of working tremendously. In some cases, employees were not fully exempted from their tasks and practices within their traditional teams to be able to focus on agile practices and methodologies, but they were dedicated to working in the waterfall methodology and in the agile methodology at the same time, splitting their working capacity (I4). This approach was criticised considerably often since it distracted employees from both ways of working, confusing them and causing transitional costs, repeatedly shifting from one approach and set of practices to the other (I4). One respondent clearly illustrated her struggle to serve ‘both worlds’, since her first supervisor in her waterfall team did not agree with her attendance at mandatory meetings within her new agile team, which constantly caused her trouble and dissatisfaction since she was not able to fulfil her tasks in either team adequately (FN, 14 November 2019).

However, as soon as the first SRM started to evolve with regard to agile working, SRM in the traditional context automatically started becoming weaker. The increasing *pull in* the direction of agile working came along with an analogous *pull out* of the traditional way of working and an *increasing withdrawal* from the waterfall logic, weakening it significantly further.

As depicted, after adaptive expectation effects and learning effects had come into force slowly, coordination and complementarity effects were also set up to serve agile management. At this point in time, the negative dynamics from the agile approach regarding the traditional approach changed from being indirect in nature (i.e. weakening because of fading away) to being direct (i.e. actively disturbing and unbalancing existing, relevant processes), for example, the budgeting processes (FN,

13 February 2020). Figure 1 shows an overview of the different dynamics within the tense interplay between the traditional and agile approaches over time, suggesting their tendency, realm and direction.

## Paralysing parallelism

As shown, the waterfall approach prevailed—for good reasons, viewed from the perspective of many respondents who opposed vilifying the waterfall approach. However, it was conspicuous that it was often perceived as an ‘inherited burden’ (I1), culminating in remarks such as ‘the [traditional] budgeting and release processes are a permanent brake in the machinery’ (archival data, 3 April 2017). The teams are subject to certain constraints in the traditional organisational structure. ‘I mean, [regarding the processes], our legs and arms are tied, and then [they say] now run 100 m as fast as you can’ (I16). Since the traditional working environment did not support agile working, the company not only established agile methodologies but also tried to set up a whole new organisational structure enabling and supporting agile working (I36). However, this turned out to be extremely complicated because of its development over decades. ‘If we were a young start-up that had been able to start on a green field [...] it would most likely look way different [today]. However, we have inherited burdens’ (I1). As one of the agile coaches, advising teams on their way to agile working, also put it, ‘it is still difficult, due to our dependencies on the waterfall world, especially at the beginning’ (I7). The more points of contact an agile team still has with waterfall teams and processes, the more the structure and flow of agile rituals get disturbed

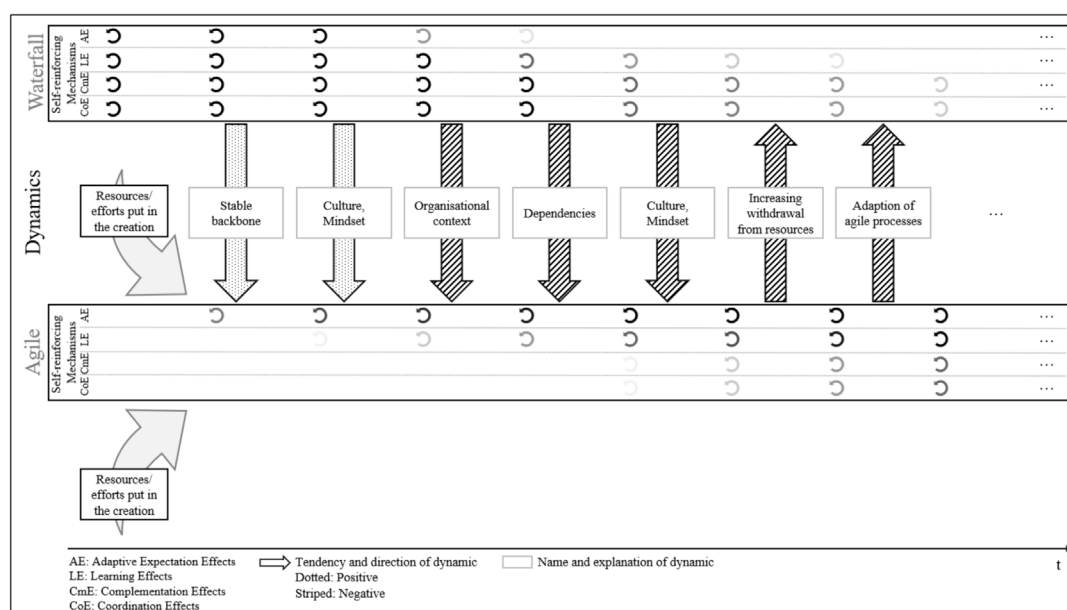


FIGURE 1 Development of inter-path dynamics over time (own representation).

(FN, 15 November 2019). At the latest, when it comes to issues, ‘you have to pull the classical mechanisms out of the hat somehow’ (I6), and the first way to get out of trouble is to rely on classical habits and exit mechanisms stemming from the traditional world. This mechanism appears comprehensible but fatal at the same time, because relying on the organisation’s classical processes hinders the evolution and establishment of new and modern coping mechanisms, supporting agile progress.

As we discovered that parallelism was one of the core sources inhibiting progress, we sought reasons *why this parallelism is forced in the prevailing situation of ICT* and identified three different reasons for the intended and prevailing parallelism. First, the traditional operations and structures within the ICT company still serve as a *stable backbone*, continuing current everyday business and ‘earning the money for the colourful game and fun world, inventing agile working’ (FN, 3 April 2019). While doing so, some interviewees felt that the company was split into a ‘two-class society’ (I1), with one class reinventing the organisational structure and a new way of working, whereas the other one ‘did the rest’ (archival data, 15 February 2019).

Second, various respondents pointed out that agile working might not be the panacea for all parts of the organisation and for all customers. There are still *good reasons for working with the waterfall methodology*, with it still being beneficial for some parts of the organisation (I12). As the CEO of the organisation announced at the beginning of the transformation process, he aspired to develop 80% of the projects in line with the agile approach and stick to 20% with the traditional approach by 2021 (I21). For instance, when one receives an error signal, immediately the relevant people must be informed; the error signal needs to be analysed, fixed and confirmed. ‘What should I do there with post-its?’ (I19). There are still parts of the organisation sticking to their traditional way of working because it is simply not sensible to work in an agile way in those specific areas (I1).

Third, organisational conditions were critical. For instance, the leader of the transformation programme confirmed in our interview that ‘you cannot shift to “agile” overnight’ (I27), and the way of working ‘cannot be switched as such’ (archival data, 25 September 2019). That kind of *sudden switch* might be possible in the technological environment, although still requiring many resources and extremely intensive preparation there, as we spotted in an internal newsletter asking the question, ‘How can we get rid of the system dinosaur?’ (archival data, 12 February 2020), talking about an internal application that was created in 1979—at that time, one of the largest computer systems. The company ‘has been trying to *switch* to more modern systems for 25 years. With the current planning, this will be achieved by mid-2021’ (archival data, 12 February 2020). A software developer confirmed this approach of ‘prepare and switch’ by telling us that his team was working on building up a new

application in a completely modularised way (hence, supporting agile methodologies), duplicating all the relevant functions of a monolithic traditional one ‘until [the new application] is running. Then we will switch [to our new one], and [the old application] will be retired’ (FN, 13 September 2019). In this kind of technological circumstance, it might be possible to intensively prepare something new in parallel until it is ready for usage and then completely switch over.

However, this logic is not adaptable to organisational changes. The more complex an organisational structure is, which holds especially true for large legacy companies such as ICT, where structures and processes have evolved over decades, the more difficult it is to prepare and perform such a switch. ‘Since organisational structures change way slower [than a team suddenly using a new methodology], you still continue to work in the waterfall manner’ (I19). This can be traced back to the complexity of interconnected processes, hierarchies, highly different individuals, an evolved organisational culture and lastly, the dynamics arising between all of those factors. In this context, it is not possible to retire the traditional organisational world by ‘pushing a button’ (FN, 13 September 2019), as might hold true for an old application that can be turned off. This difficulty gets even more complicated when the old system is supposed to keep running in parallel. That repeatedly triggers a pull-back effect towards the traditional world, as one high-level manager mentioned in retrospect: ‘And now there is this impressive new green world, and it is impressive and green and new, but when it circumambulates core processes, then we get down to the nitty-gritty. Nobody has told us how to shift. It all remains traditional. Regarding this, [by now] everything related to responsibility stays exactly where it was before’ (retrospective informal interview after data collection period; FN, 02 June 2020).

## DISCUSSION—PARALLEL PATHS AGAINST ALL ODDS

This explorative study sought to explore the dynamics and tensions between an established and a new organisational path in creation. In doing so, we contribute to the literature in *two ways*: first, our empirical inquiry suggests that an organisation might *intentionally seek the co-existence of two organisational paths*. This contrasts starkly with previous theorising, which assumes that an old path can be replaced by a novel path but that there is no room for the intentional co-existence of parallel paths (Sydow, Schreyögg, & Koch, 2009). Our empirically anchored inquiry nonetheless opens up this possibility, questioning the inevitability of this one-path mantra (Hassink, Isaksen, & Trippel, 2019; MacKinnon et al., 2019). This is substantiated by the SRM at work for both paths and the sheer need to have a stable backbone (justifying the continued existence of the old path)



and enable flexibility and adaptability (justifying the emergence and further continuation of the novel path). Thus, the mutual interdependence of both paths appears more attractive than focussing on one path only, resulting in the intentional co-existence of the organisational path despite the obvious detrimental effects of partially paralysing the parallelism of the two organisational paths.

Early studies on path dependence already highlight the central role of self-reinforcement during the evolution of a path (David, 1985). Later studies also build on that idea and point out the major importance of increasing returns (Arthur, 1994) and ‘increasingly systemic forces beyond the control of the individual actor’ (Sydow, Schreyögg, & Koch, 2009, p. 691). These SRM turn out to be a core element of both creating a new path and fading away from an existing one. This finding does not appear extremely surprising per se, because SRM are the key idea and driving force behind the evolution and strength of an organisational path (Stache & Sydow, 2023; Sydow, Schreyögg, & Koch, 2009). However, it is intriguing to take a look at the particular techniques and their temporal development as employed to deviate from existing structures and operations (Garud & Karnøe, 2001) and to set up a new organisational path from scratch. In the current study, a parallel can be drawn to the deviation-amplifying linkages sketched out by Kremser and Sydow (2022). The authors suggested that a nexus of practices can be a useful unit of analysis to observe how self-reinforcement unfolds, which bears a resemblance to our observations of fading away.

In contrast to previous studies, mainly elaborating on the origin of SRM, their emergence or different types of self-reinforcement effects (e.g. Agogué et al., 2015; Sydow, Schreyögg, & Koch, 2009), our data show the *development of intentionally initiated SRM over time* in light of path creation efforts (Garud & Karnøe, 2001). Towards this end, the introduction of a parallel, competing organisational path within a centralistic organisation comes along with the fading *away* of SRM related to the traditional path. In contrast to the assumptions regarding evolving path dependence (Sydow, Schreyögg, & Koch, 2009), the SRM relating to path creation do develop *under the control* of the individual actors, who thus actively shape the new path intentionally (Fortwengel & Keller, 2020). However, Garud, Kumaraswamy, and Karnøe (2010) already make a call not to underestimate the *unintentional* consequences of *intentional* actions, suggesting ‘the power of hidden self-reinforcing processes’ (Sydow et al., 2012b, p. 910). In line with this assumption, our data also depict how the risk of losing control over the *mindfully initiated* SRM should not be ignored. One employee pointed out how much energy ICT needed to push the ‘flywheel’. However, when the ‘flywheel slowly starts turning, then it develops momentum, turns and will always turn further’ (FN, 21 February 2018). From this tipping point on, the organisation might lose control over the previously

initiated SRM and might subsequently fall into a dependency that may no longer be intended at that point in time (Garud, Kumaraswamy, & Karnøe, 2010; Sydow et al., 2012a).

Moreover, we suggest making a distinction between *exogenous* and *endogenous* SRM. *Exogenous*, as we use it, does not mean ‘external regarding the organisation’, but still ‘external regarding the path’. Instead, these SRM are actively and mindfully set in motion by the organisation or its actors *as a trigger and enabler prior to and purposefully for the creation of a new path*. Analogously, when we speak about *endogenously* evolving SRM, we refer to SRM that are already evolving from the path in creation itself in an emergent fashion. In addition to distinguishing between exogenously and endogenously evolving SRM, we base our observations on the previously explained three levels of analysis: approach, methodology and practice.

In summary, we found the evolution of exogenous as well as endogenous SRM on all three levels of analysis and were able to distinguish their evolution and development over time. Against our expectations, we were not able to detect a certain ‘trend’ regarding the sequence or timing of actively initiating certain exogenously evolving SRM. However, our data show quite obviously, on all three levels of analysis, that the path creation started with exogenously evolving SRM, which does not appear very surprising. Of course, when an organisation aims to *create a new path actively and purposefully*, it needs to actively and purposefully set in motion the according SRM. At the same time, because it is a *new* path in creation, by definition, it is considerably unlikely that endogenously and emergently evolving SRM will be at work already. To some extent, the path needs an ‘initial start-up aid’ to be able to develop endogenous SRM through its own power. Finally, regarding these endogenously evolving SRM, we found that complementarity and coordination effects were downstream to learning effects, which again does not appear extremely surprising because of the nature of coordination and complementarity effects, which ‘require’ a mature handling of certain practices or methods. Therefore, it appears plausible that, to some extent, ‘learning’ is the key and predecessor to later coordination and complementarity benefits.

It is relevant to mention that, first, Figure 2 only considers SRM regarding the agile approach at the expense of older SRM regarding the traditional approach. Second, Figure 2 does not aim to depict the evolution of SRM quantitatively, as we do not refer exactly to a timing sequence along the *x*-axis. Rather, we use the illustration to point out the chronological sequences in a qualitative manner.

Second, we tentatively suggest that there is a phenomenon we term *paralysing parallelism*. This can be observed in our empirical case, as by and large, the two paths did compete with one another and, even more critically, interfered with one another. Previous research has



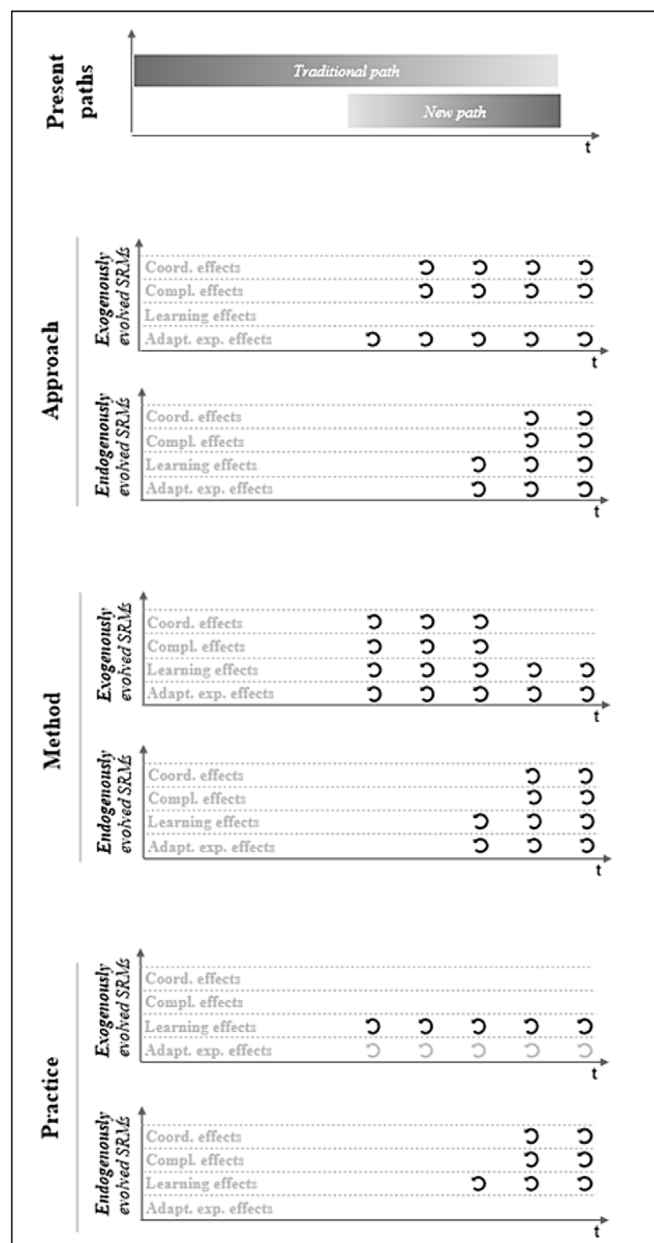


FIGURE 2 Exogenous and endogenous evolution of SRM regarding the introduction of the agile way of working (own representation).

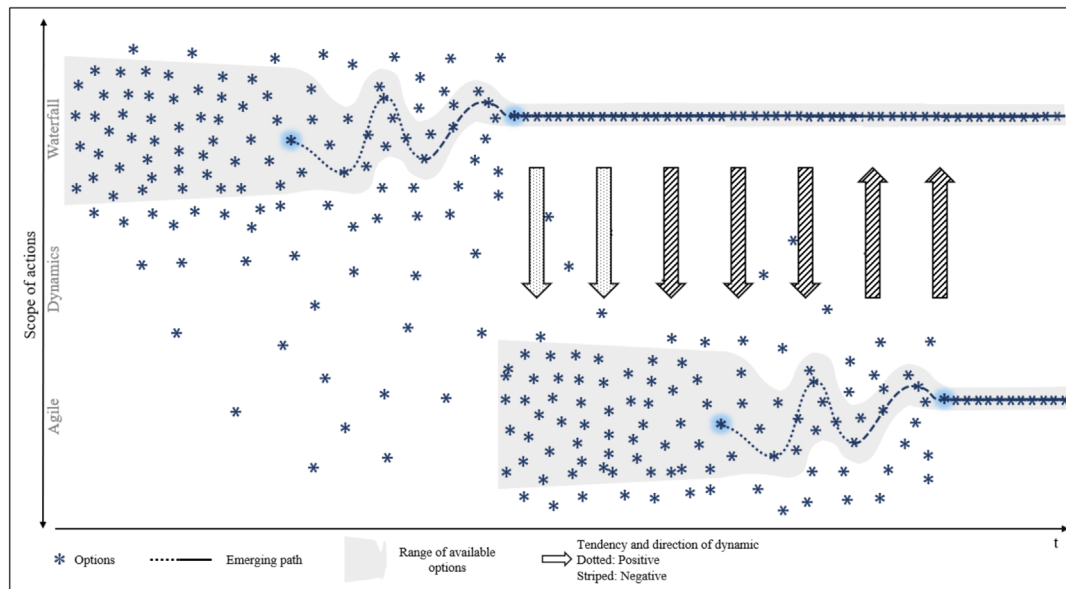
hinted at the possibility of such situations in an organisational context (Bothello & Salles-Djelic, 2018; Singh, Mathiassen, & Mishra, 2015). However, up until now, concrete elaborations on the interplay between different intentionally maintained organisational paths have fallen short. We have discovered how some positive, but mainly negative, dynamics influence how SRM unfold in the respective other (potential) path (cf. Figure 3), creating what we term paralysing parallel paths.

In contrast to previous studies on path creation—where a single novel path replaces an older path (cf. Stache & Sydow, 2023)—in our case, the older

path prevails despite obviously detrimental effects. This contrasts with studies from other disciplines, where it is assumed that ‘co-existing paths can interact in a positive way due to SRM in the form of positive externalities, which can be reproduced not only in their original path but also in co-existing paths’ (Onufrey, 2017, p. 1064). However, Onufrey (2017) is referring to a multi-technology industry and elaborating on new technological paths benefitting from the previous SRM of the already existing, locked-in technologies. Hence, her work pertains to a setting where co-existing paths can benefit from the reproduction of the same SRM. In contrast, we investigated the parallel introduction of a completely opposite way of working (traditional approach vs. agile approach). Thus, the new path in creation is not complementary to the traditional one at all. Rather, it opposes the previous organisational structures and processes and, therefore, increasingly disturbs them as more points of contact between the two paths arise.

The parallel co-existence of two competing organisational paths within one centralistic organisation not only culminated in paralysing parallelism to a certain extent—against all odds. The whole process of introducing a parallel organisational path appears to be extremely wide ranging, lengthy and expensive, and going hand in hand with a considerably fraught transitional phase. Therefore, it is relevant to understand why organisations might initiate parallelism intentionally, despite being fully aware of the challenging situation they are launching themselves into, namely paralysing parallelism, an observation impossible for other constellations, such as the intolerable death rate ensuing from the old centralised operations in the Russian health-care system, as described by Stache and Sydow (2023).

The reasons for this observation are, on the one hand, that the traditional path remains necessary to serve as a *stable backbone*, enabling the development of a new path in parallel. This idea can be traced back to March (1991), who already talks about exploiting old certainties while exploring new potentials for the organisation at the same time, making the organisation ambidextrous (Tushman & O'Reilly, 1996). Although bringing the organisation into a fatal, ‘life-threatening’ situation because of a negative lock-in dominated by inefficiency and inflexibility, ironically, the traditional path is still essential for the survival of the organisation as well. Relatedly, another reason for intended parallelism is that a *sudden switch* from one path to another is *simply not possible*. There appears to be a tipping point that unfolds unintentionally and is better described by the aforementioned fading away. This stems from the observation that there was no active promotion of a decisive switch observed in our case. Hence, it is instead the unfolding of the novel path and the intricate interplay between the old and new paths with regard to the SRM that lead to fading away from the old and being attracted by the new path. On the other hand, the continuation of a traditional



**FIGURE 3** Introducing positive and negative dynamics between an established organisational path and a (potentially) new path in the making (adapted from Sydow, Schreyögg, & Koch, 2009, p. 692).

path cannot only be seen as a stable ‘backup’ for worst-case scenarios or as the inability to switch to a new path. A negative overall lock-in for an organisation need not be true regarding all its operations. While some operations may slide towards disaster on a certain path, other operations may not have passed the rationality shift (Rothmann & Koch, 2014) and may *still be efficient on that specific single parallel path*. Therefore, the parallel availability of two differing paths may open up the chance of ‘strategic choice’ (Child, 1972, p. 1), so that an organisation will have the freedom to select between two paths and so select the preferred benefits of both alternative options.

In summary, except for the very beginning of the introduction of agile working, the co-existence of the traditional approach and the agile approach within one centralistic organisation was extremely tense and, to a large degree—but not entirely—paralysing. However, there was a ‘critical’ point in time, which cannot be explicitly determined per se, when the dominant direction of dynamics started to change and led to a fading away of the old path. While the traditional environment hindered the introduction of agile management in the early stages (except for a few exceptions), in the end it turned out the opposite way after this tipping point, where the changing organisational environment in the direction of the agile approach got so much momentum that it started hindering the retention of the traditional approach. It is remarkable that the negative dynamics did not vanish over time but changed their direction. Hence, the interplay between the two parallel paths remained tense, even after, or possibly, because the new path had become mature.

## CONCLUDING REMARKS

Our study elucidated the possibility for two competing organisational paths to co-exist within an organisation and the ensuing idea of paralysing the parallelism of organisational paths. Despite these advancements, limitations remain, as with any study. First, although we have conducted a qualitative, longitudinal case analysis with an observation period of more than 2 years, we lack data suggesting whether the agile approach will finally develop into a locked-in path beyond the control of the individual actors and, if so, how the dynamics between the two paths will unfold in later stages of their co-existence. Therefore, future research might explore the forms of inter-path dynamics between *long-term co-existing organisational paths*. Second, we have focussed on two organisational paths in the transitional phase of creating and strengthening a new path while at the same time easing back on the old one. This leaves room for future research to elaborate on cases of *multiple organisational paths* in parallel (as research on multiple technological paths; e.g. Singh, Mathiassen, & Mishra, 2015). Finally, we have drawn on the *specific case of competing organisational paths* within a substantially *centralistic, hierarchically driven* organisation. It might be of interest to see how our results would vary if the two organisational paths were not competing or if they co-existed in a rather decentralised organisational structure, enabling them to co-exist in a more autarkic manner rather than having various points of contact with each other. Nonetheless, we submit that in the future, it is worth engaging further with in-depth explorations of the parallelism of organisational paths and their dynamic interplay.

## CONFLICT OF INTEREST STATEMENT

There are no conflicts of interest.

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## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available because of privacy or ethical restrictions.

## ETHICS STATEMENT

The manuscript is not under review or published elsewhere.

## REFERENCES

- Agogué, M., Lundqvist, M. & Middleton, K.W. (2015) Mindful deviation through combining causation and effectuation: a design theory-based study of technology entrepreneurship. *Creativity and Innovation Management*, 24(4), 629–644. Available from: <https://doi.org/10.1111/caim.12134>
- Araujo, L. & Harrison, D. (2002) Path dependence, agency and technological evolution. *Technology Analysis & Strategic Management*, 14(1), 5–19. Available from: <https://doi.org/10.1080/09537320220125856>
- Arthur, W. B., 1994, "Increasing returns and path dependence in the economy (economics, cognition, and society)". Ann Arbor: University of Michigan Press. Available from: <https://doi.org/10.3998/mpub.10029>
- Arthur, W.B. (2008) Self-reinforcing mechanisms in economics. In: Anderson, P.W. (Ed.) *The economy as an evolving complex system*. Boca Raton, Florida: CRC Press, pp. 9–31. Available from: <https://doi.org/10.1201/9780429492846-2>
- Bergek, A. & Onufrey, K. (2013) Is one path enough? Multiple paths and path interaction as an extension of path dependency theory. *Industrial and Corporate Change*, 23(5), 1261–1297. Available from: <https://doi.org/10.1093/icc/dtt040>
- Bothello, J. & Salles-Djelic, M.-L. (2018) Evolving conceptualizations of organizational environmentalism: a path generation account. *Organization Studies*, 39(1), 93–119. Available from: <https://doi.org/10.1177/0170840617693272>
- Castaldi, C. & Dosi, G. (2006) The grip of history and the scope for novelty: some results and open questions on path dependence in economic processes. In: Wimmer, A. & Kössler, R. (Eds.) *Understanding change: models, methodologies, and metaphors*, pp. 99–128. Basingstoke, UK: Palgrave Macmillan, London. [https://doi.org/10.1057/9780230524644\\_8](https://doi.org/10.1057/9780230524644_8)
- Child, J. (1972) Organizational structure, environment and performance: the role of strategic choice. *Sociology*, 6(1), 1–22. Available from: <https://doi.org/10.1177/003803857200600101>
- David, P.A. (1985) Clio and the economics of QWERTY. *The American Economic Review*, 75, 332–337.
- Fortwengel, J. & Keller, A. (2020) Agency in the face of path dependence: how organizations can regain scope for maneuver. *Business Research*, 13(3), 1169–1201. Available from: <https://doi.org/10.1007/s40685-020-00118-w>
- Garud, R. & Karnøe, P. (2001) Path creation as a process of mindful deviation. In: Garud, R. & Karnøe, P. (Eds.) *Path dependence and creation*. Mahwah, NJ and London, UK: Taylor and Francis.
- Garud, R., Kumaraswamy, A. & Karnøe, P. (2010) Path dependence or path creation? *Journal of Management Studies*, 47(4), 760–774. Available from: <https://doi.org/10.1111/j.1467-6486.2009.00914.x>
- Gemino, A., Reich, B.H. & Serrador, P.M. (2021) Agile, traditional, and hybrid approaches to project success: is hybrid a poor second choice? *Project Management Journal*, 52(2), 161–175. Available from: <https://doi.org/10.1177/8756972820973082>
- Hassink, R., Isaksen, A. & Trippel, M. (2019) Towards a comprehensive understanding of new regional industrial path development. *Regional Studies*, 53(11), 1636–1645. Available from: <https://doi.org/10.1080/00343404.2019.1566704>
- Kremser, W. & Sydow, J. (2022) When practices control practitioners: Integrating self-reinforcing dynamics into practice-based accounts of managing and organizing. *Organization Theory*, 3(3), 1–23. Available from: <https://doi.org/10.1177/26317877221109275>
- MacKinnon, D., Dawley, S., Pike, A. & Cumbers, A. (2019) Rethinking path creation: a geographical political economy approach. *Economic Geography*, 95(2), 113–135. Available from: <https://doi.org/10.1080/00130095.2018.1498294>
- Maielli, G. (2017) Path-dependent product development and Fiat's takeover of Lancia in 1969: meta-routines for design selection between synergies and brand autonomy. *Business History*, 59(1), 101–120. Available from: <https://doi.org/10.1080/00076791.2015.1038520>
- March, J.G. (1991) Exploration and exploitation in organizational learning. *Organization Science*, 2(1), 71–87. Available from: <https://doi.org/10.1287/orsc.2.1.71>
- Meyer, U. & Schubert, C. (2007) Integrating path dependency and path creation in a general understanding of path constitution. The role of agency and institutions in the stabilisation of technological innovations. *Technology & Innovation Studies*, 3, 23–44.
- Onufrey, K. (2017) Endogenous sources of path generation in a path dependent industry. *Technology Analysis & Strategic Management*, 29(9), 1062–1075. Available from: <https://doi.org/10.1080/09537325.2016.1268683>
- Patton, M.Q. (2014) *Qualitative Research & Evaluation methods*, 4th ed. Thousand Oaks, CA: SAGE Publications.
- Pentland, B.T. & Hørem, T. (2015) Organizational routines as patterns of action: implications for organizational behavior. *Annual Review of Organizational Psychology and Organizational Behavior*, 2(1), 465–487. Available from: <https://doi.org/10.1146/annurev-orgpsych-032414-111412>
- Rothmann, W. & Koch, J. (2014) Creativity in strategic lock-ins: the newspaper industry and the digital revolution. *Technological Forecasting and Social Change*, 83, 66–83. Available from: <https://doi.org/10.1016/j.techfore.2013.03.005>
- Singh, R., Mathiassen, L. & Mishra, A. (2015) Organizational path constitution in technological innovation: evidence from rural telehealth. *MIS Quarterly*, 39(3), 643–666. Available from: <https://doi.org/10.25300/MISQ/2015/39.3.06>
- Stache, F. & Sydow, J. (2023) Breaking a path by creating a new one: how organizational change boosts children's cancer care. *Organization Studies*, 44(3), 351–376. Available from: <https://doi.org/10.1177/01708406221103965>
- Sydow, J., Schreyögg, G. & Koch, J. (2009) Organizational path dependence: opening the black box. *Academy of Management Review*, 34(4), 689–709. Available from: <https://doi.org/10.5465/AMR.2009.44885978>
- Sydow, J., Schreyögg, G. & Koch, J. (2020) On the theory of organizational path dependence: clarifications, replies to objections, and extensions. *Academy of Management Review*, 45(4), 717–734. Available from: <https://doi.org/10.5465/amr.2020.0163>
- Sydow, J., Windeler, A., Müller-Seitz, G. & Lange, K. (2012a) Path constitution analysis: a methodology for understanding path dependence and path creation. *Business Research*, 5(2), 155–176. Available from: <https://doi.org/10.1007/BF03342736>
- Sydow, J., Windeler, A., Schubert, C. & Möllering, G. (2012b) Organizing R&D consortia for path creation and extension: the case of semiconductor manufacturing technologies. *Organization Studies*, 33(7), 907–936. Available from: <https://doi.org/10.1177/0170840612448029>

- Tonnquist, B. (2008) *Project management: a guide to the theory and practice of project, program and portfolio management and business change*. Stockholm: Bonnier Utbildning.
- Tushman, M.L. & O'Reilly, C.A. (1996) Ambidextrous organizations: managing evolutionary and revolutionary change. *California Management Review*, 38(4), 8–29. Available from: <https://doi.org/10.2307/41165852>
- van de Ven, A.H. (2007) *Engaged scholarship: a guide for organizational and social research*. New York: Oxford University Press.
- Vergne, J.-P. & Durand, R. (2011) The path of most persistence: an evolutionary perspective on path dependence and dynamic capabilities. *Organization Studies*, 32(3), 365–382. Available from: <https://doi.org/10.1177/0170840610397485>
- Yin, R.K. (2018) *Case study research and applications: design and methods*. Los Angeles, London, New Delhi, Singapore, Washington DC, Melbourne: SAGE.

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