

## 2. Theoretical Foundation – Path Dependence, Consumer Behavior, and Service Relationship Research

Not every decision made in consumers' daily lives is alike and the phenomenon described in the introduction may only apply to certain situations. The first research question of this work breaks this phenomenon down to its constituting features.

RQ 1: Why do individuals stick to a consumption process in a manner that can be described as locked-in?

Elaboration of the central theoretical terms is necessary to answer this question. This includes path dependence on the individual level, sticky or persistent consumer behavior, and lock-in to a consumption process that follows the decision in service relationships. To reach this goal, this theoretical section transcends three fields of research. Each part provides an outline of relevant aspects mentioned in research in the fields of path dependence, consumer behavior and relationship marketing, aimed at answering this question. Figure 2 provides an overview of the fields covered in the following sections and the main aspects they focus on in explaining consumer lock-in and answering the first research question.

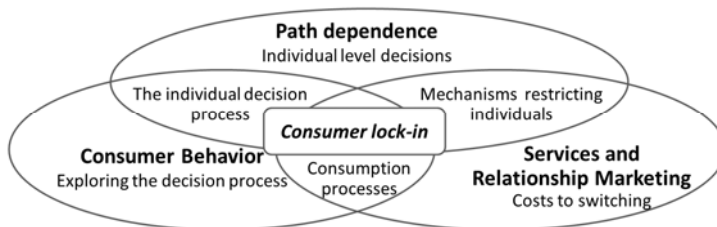


Figure 2: Intersection of Main Theoretical Fields Transcended in this Work.

Section 2.1 starts with an outline of *path dependence research* and then discusses the applicability of the organizational and individual path dependence concepts to individual persistence in a process. The focus is on the individual cognition within a course of action, so this is where the elaborations continue. The discussion ends with the proposition that the theoretical framework presented is applicable to individual consumption as an economic layer, making evident that the mechanisms at work here need to be reconsidered.

The next section focuses on *consumer behavior research*, centered on the decision making process on this economic layer: individual behavior. Four relevant aspects and concepts are differentiated in such a process: The pre- and post-decision phases, individual differences and environmental influences. After identifying service relationships as relevant, the focus moves to the consumer side as an *individual* and his perception and behavior within such a relationship process.

This leads over to Section 2.3, where the individual behavioral process is embedded in a particular consumption context: the *service relationship*. The section discusses relationship research focusing on service properties as a prerequisite for a lock-in process, the relational focus of some services and the particular mechanisms that may come to carry here. Relationship marketing is discussed, particularly with regards to the strategic dimension of marketing activity in such services. The relational aspect is identified as the relevant mechanism for lock-in in service relationships. In certain service contexts, the two parties interact with each other and also third parties are involved on a social level, particularly in the kinds of services relevant for this work.

At the end of each part describing a research field, the connection and contribution to the goal of this work are summarized with regards to the creation of a theoretical model of consumer lock-in in a service relationship. Research propositions are derived and a definition of consumer lock-in for this work is developed. These are relevant for the model as the findings of this section form the foundation of the theoretical model development.

## **2.1 Path Dependence and Individual Lock-in**

To understand the phenomenon of lock-in, Section 2.1.1 introduces to the origins of the path dependence concept in research and the initially outlined mechanisms leading up to lock-in. The process character of lock-in was more clearly outlined in a body of organizational research that contributed a clear model and further developed the character of the involved lock-in mechanisms, which is outlined in Section 2.1.2.

The process and its mechanisms are described as inherently *social*. Focusing on the social science approach, the concept of increasing returns mechanisms that can amount to lock-in is further elaborated (Pierson 2000) and categorized in Section 2.1.3. Next, in Section 2.1.4, research on individual path dependence is dissected to find the constituting features of lock-in on this level, focusing on mechanisms relevant here.

Section 2.1.5 provides a summary where the phase-based elaboration from organizational research is combined with social and individual aspects. The individual

process of becoming path dependent is differentiated into three phases and propositions are derived.

### 2.1.1 The Origins of Path Dependence in Technology

When trying to understand how the lock-in phenomenon differentiates from other types of persistence and incorporate the process character of lock-in, there is no way around path dependence research. The character of dynamic lock-in processes is reflected in a growing body of research that started with the works of David (1985) and Arthur (1989) on path dependence in technology decisions.

Path dependent processes are governed by an actor's past decisions – while an actor may feel free and rational in a decision at any given time, he is actually constrained to a *path* due to his choice history and influenced by that of others. The common examples refer to technological path dependence: The dominance of QWERTY keyboard layouts (David 1985) and the prevailing of the VHS format compared to alternatives (Arthur 1988). These technologies are assumed to have had a head start and subsequently turned out as suboptimal choices. Nonetheless there was lock-in on the market level to these technologies – alternative technologies did not have a chance of adoption. In this conception of path dependence, lock-in applies to new actors entering the market. Their *rational* choice is influenced by the choice history of others, up to the point where the decision is deterministic – a market lock-in to one technology.

This classic path dependence concept points to the relevance of *self-reinforcing mechanisms* or *increasing returns mechanisms* as a cause of developing persistence over the course of the process due to a *selection advantage* that results in lock-in. The scope of this concept also includes *social dynamics* involving social interactions among economic agents (David 2007). In his work on *Self-Reinforcing Mechanisms in Economics*, Arthur (1988, 2004) describes his idea of dynamic systems in economics that work similar to those observed in physical and biological systems. Local positive feedback mechanisms are introduced as a situation where an initially arbitrary advantage is positively reinforced and magnified. He describes four mechanisms reinforcing such initial advantages as relevant for the development of technological path dependence: *Large set-up or fixed costs*, *learning effects*, *coordination effects* and *adaptive (self-reinforcing) expectations*. These mechanisms raise barriers – costs that have to be overcome to exit the path.

The centrality of the mechanisms is a shared feature of all notions of path dependence found in research, while they differ depending on the context. The following points illustrate Arthur's understanding of these mechanisms in technologies:

- The *initial* and/or *sunk investment costs* incurred due to a technology choice reinforce a choice, because they are difficult to transfer or reverse.
- *Learning* occurs due to idiosyncratic experience in a given technology, which similar to sunk costs is hard to transfer and increases the value of the technology (Arrow 1962).
- *Coordination* with other agents on a choice benefits the technology down the road, analogous to the concept of network externalities (Katz and Shapiro 1985, 1986).
- Similarly, dynamic *expectations* due to experience and belief of agents reinforce the selected technology.

The consideration of these mechanisms however goes further than technologies (Arthur 1989; David 1985); similar effects have been identified for path dependence in institutions (North 1990), in political processes (Pierson 2000) and organizations (Schreyögg and Sydow 2011; Sydow, Schreyögg, and Koch 2005, 2009). The organizational path dependence concept presented in the next section left out *large set-up or fixed costs (economies of scale and scope)* and *network externalities* but added the aspect of *complementary effects*, further adding to a mix of mechanisms that appear to depend on the context of lock-in.

Mechanisms in this context are described as sequential along the process, reinforcing the choice and thus leading to persistence in that choice – an equilibrium due to positive feedback that would have similarly lead to reinforcement of another choice (Arthur 1990). New entrants are faced with this situation and base their choice on a critical mass of previous adopters. Technologies available earlier have an advantage in this system, even if they are not superior.

Main features of the process in a mathematical sense are *unpredictability*, *inflexibility*, *non-ergodicity* and *potential path inefficiency* (Arthur 1994a). Random early events make the process unpredictable in the beginning. It is inflexible in that the further down one path an actor has progressed, the less flexible he becomes. Non-ergodicity refers to the chance of multiple outcomes or equilibria, with small and early events determining the outcomes. Lastly, the potential path inefficiency is defined as that a locked in choice may generate lower pay-offs than a forgone alternative. This inefficiency can take different forms and is difficult

*Individual persistence* is assumed to be rational in the moment it occurs. In an illustrative example, Arthur (1988) refers to an important choice phenomenon like the ones this work is focused on (pp. 13–14):

*Notice that at each stage, an optimal choice is made under conditions of certainty; and so there can be no conventional economic inefficiency here. But there may exist regret. Consider the case of a person who has the choice of practising medicine or law each year. Each activity pays more, the more previous experience has been accumulated. Suppose the rewards to practising law rise rapidly with experience but then flatten out; and those to practising medicine are small initially but eventually surpass those of law. According to the theorem, whichever activity the person chooses, he will continue to choose thereafter. If he has a high discount rate, he will choose law. And this choice will at all stages continue to be rational and superior to the alternative of first-year payoff as a doctor. Yet there may exist regret, in the sense that after  $N$  years in the law, an equivalent time served in medicine would have paid more at each time into the future. Self-reinforcement can lock a single rational economic agent in to one activity, but not necessarily the one with the best long-run potential.*

The important individual choice phenomenon of an education and profession for future income is inherently individual and does not necessarily have direct aggregate level path dependence implications. If there is potential for *regret* regarding the decision that signifies lock-in, there must be some conscience on the individual level regarding the mechanisms at work and their effect on the individual, rather than on new market entrants. Section 2.1.4 focuses on the individual in this context and identifies levels on which path dependence mechanisms work regarding individual lock-in.

Pierson (2000) adds the relevance of *sequencing* to the features of a path dependent process, where early events are much more relevant for the outcome than later ones. In an effort of structuring this general idea of path dependence, a conceptualization from organizational research orders its constituting features in a process, offering a more rigorous approach to understanding the phases and the social nature of the process.

### 2.1.2 Conceptualizing the Process of Path Dependence in Organizations

Organizational path dependence research provides a conceptual framework, further unfolding the process of becoming locked-in and unfolding the operation of the lock-in mechanisms (Sydow, Schreyögg, and Koch 2005, 2009). According to this research,

lock-in is caused by a *predominant social influence* (Sydow, Schreyögg, and Koch 2009).

While the original path dependence concept looks at technological adoption processes, this research considers the individual and organizational commitment to an activity, a process, a *course of action*. Schreyögg and Sydow (2011) develop a process view of path dependence for organizations, which captures this *action sequence* aspect; prerequisite for this organizational process theory is a *sequence of events, decisions and/or actions, which is imprinted by the foregoing course of actions and its characteristics*. Sydow et al. (2005) also state: “*The assumption of rational choice on the individual level as a starting point is problematic*” (p. 10), affirming that *bounded individual rationality* (March 1978) is an important predecessor of lock-in on the individual- and higher levels. Economics has long employed this view of actors: Arthur (1994b) refers to *complex decision situations* and inductive reasoning potentially leading to a temporary lock-in of psychological patterns and path dependence (p. 410).

A central contribution to the original path dependence conception is pointing out that Arthur’s proposed properties of path dependence come to carry at different points in the process. Describing the social process of organizational decision-making and subsequent mechanisms, the process framework differentiates three consecutive and sequential phases with distinct regimes in a lock-in process of organizational systems. This means that there is technically only the initial decision situation; nevertheless subsequent behavior in the process is contingent on this decision for a course of action. This conception is also applicable to levels other than organizational decision-making. The distinction between the three phases is shown in Figure 3 and detailed in the following.

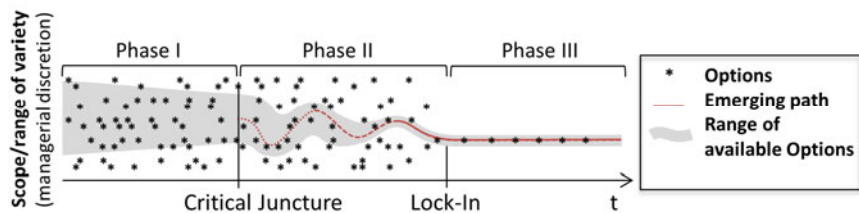


Figure 3: Phase Based Constitution of an Organizational Path according to Sydow et al. (2009), p. 692.

**Phase I**, the *preformation phase*, entails a broad scope of potential action where options are open. Here the features of *non-predictability* and *non-ergodicity* come into play, which are of less importance in later phases. The shadow indicates the narrowing of choices. Here, a decision, event, or action taken can mean a critical juncture – the entry of phase II.

In **phase II** – referred to as the *formation phase* – the mechanisms make the critical decision or action gradually less reversible. These dynamics can be assumed to differ by context, while following an increasing logic over the course of the process. While decisions outside of the path are still attainable, they are less and less probable – a path is evolving. In this phase the *inflexibility* and *potential inefficiency* start evolving. For organizational path dependence, a *dominant action pattern* is said to emerge, indicating an exploration and elaboration of the choice made. This behavioral argument is reinforced by examples from the organizational realm, namely uncertainty avoidance, cognitive biases and power processes. Sydow et al. (2009) identify *coordination*, *complementary*, *learning* and *adaptive expectation effects* working in this phase as mechanisms towards a lock-in (p. 698).

**Phase III** is entered when the mechanisms reinforcing the path have increased to a point of *lock-in*, where the outcome is deterministically reproduced and flexibility is lost. This lock-in is described as any combination of *cognitive*, *normative* and *resource-based* persistence leading to replication of an action pattern (Sydow, Schreyögg, and Koch 2009). The lock-in mechanisms do no longer seem to play a role. Individual and organizational decision processes reproduce the locked-in outcome, although the lock-in phase in the organizational context is described as less deterministic than technological lock-in. This is because it is notably more social and leaves room for variation, while reproduction is deeply embedded in practice. It is similarly signified by a loss of adaptability to new circumstances or better alternatives.

This phase-based differentiation makes clear that sequencing is a constituting feature in organizational path dependence – the sequence leading into lock-in is decisive. Mechanisms, like the ones described by Arthur, only become relevant after a decision is made and – under certain conditions – can lead into lock-in. The adapted conception of lock-in mechanisms in organizational path dependence describes them as follows:

- *Coordination Effects* refer to the diffusion of institutions or rules in organizations that facilitate efficient action and make future coordination more attractive (North 1990).

- *Complementary Effects* refer to a synergy of interrelated resources that reinforce a process (Pierson 2000).
- *Adaptive Expectation Effects* refer to an interactive formation and development of preferences based on social influence, increasing the attractiveness of a popular choice (Leibenstein 1950).
- *Learning Effects* refer to increasing efficiency due to process specific experience and skill accumulation (Argote 2012).

The mechanisms identified for this context imply a move of attention closer to the individual as a decision-maker and the individual cognition and motivation, making this research particularly interesting for the focus of this work. Learning effects for instance were adopted from research focused on the individual. The other mechanisms as well are effects found in individual behavior as much as they are in organizational behavior. They are explained in terms of a *social* dimension, with regards to reproduction. This is a viable route for consideration in the individual because it becomes clear that they are *individual* and *context specific*. That is why the social dimension of the mechanisms is an important basis of the phase-based model developed for the individual level process for this work.

Focus	Source of path dependencies	Approach for path-breaking concepts
<b>Cognitive</b>	Self-reinforcing blind spots („we don't see that we don't see"); reflection trap	Organizational discourse, supplemented by information from external consultants etc., new knowledge/ perspectives
<b>Emotional</b>	Self-reinforcing or escalating commitment ("this commitment is our identity and the more we are committed the stronger is our identity..."); commitment (or identity) trap	Behavioral interventions, mainly on the group level
<b>Social</b>	Self-reinforcing norms, standards and basic assumptions ("what we are doing is right because we are doing it..."); normative (or cultural) trap	Systematic interventions by irritating the social system in order to break systematic routines and patterns
<b>Resource</b>	Self-reinforcing resource allocation ("if we gave up this investment it would be wasted..."); sunk costs trap	Reallocation of resources, taking into account prevailing cognitive and normative rules

**Table 1: Anchors for applying Path-breaking Concepts by Sydow et al. (2005), p. 25.**

The individual awareness of a lock-in situation is questionable however. This becomes particularly apparent when considering ways of path-breaking, as described by Sydow et al. (2005). They define the sources of path dependence and the foci of path breaking concepts as shown in Table 1.



The way the authors describe them, the sources of path dependence mechanisms can work on the cognitive, emotional, social, and resource level and lead to individual *unawareness* of lock-in. If the actor or organization becomes aware of the lock-in, there is potential to unlock or break a path, which is described in the approaches column. While path breaking or unlocking is not in the focus of this work, considering the unconsciousness of the lock-in is important when examining it in the individual. In the next section the mechanism levels are elaborated for the individual in a social context, outlining the distinctions between the levels of the mechanisms used in organizational research and examining their applicability in social processes.

### 2.1.3 The Social Side of Lock-in Mechanisms

The premise of the previous section was that social processes are susceptible to path dependence. The researchers also quoted the work of Pierson (2000), who explains that, for political processes, the temporality of events matters as much as the *increasing return effects* in rendering path dependent outcomes. His analysis stresses the increasing returns understanding of the mechanisms and they are applied to political processes, identifying causes and consequences in this context.

Mechanisms that lead to restriction can ultimately result in lock-in sharing the feature that they entail continuous feedback over the course of the path. This feedback *reinforces* the initially perceived good and rational choice. Technology adoption and distribution are governed by this mechanism on an aggregate level, but have an organizational and social network dimension as well. Carruthers (1997) points this out for electrical technology, citing “*social lock-in*” (p. 6). As this work focuses on the individual process of becoming path dependent under *interdependence*, the kind of intra- and inter-individual mechanisms described in this stream of research are relevant. Pierson (2000) also employs the path dependence conception as “*social processes that exhibit increasing returns*”, where the *increasing returns* are caused by an increase of the benefits a current *activity* renders relative to other possible options. He describes the political process as a development of social understanding. Next to *high startup costs* and *learning effects*, this understanding creates *network effects* and *adaptive expectations* in that it is socially shared.

The work of Dobusch and Schüssler (2012) provides a useful categorization of lock-in mechanisms on different levels. The researchers also argue that there is an interaction of the different mechanisms. They analyzed different prominent path dependence cases and come to the conclusion that there are different mechanisms at work

depending on the lock-in situation and context. They also differentiated the mechanisms in terms of their operational levels – the *local level* and the *population level*. One relevant case they examine is the dominance of Microsoft Windows and Office in the PC software market, where they categorize the lock-in mechanisms as shown in Table 2. Dobusch and Schüssler (2012) also assume that there is interaction between the levels and that “*path dependence is rarely driven by just a single mechanism*” (p. 638).

<b>Associated self-reinforcing mechanism</b>	<b>Level</b>	<b>Mechanism description</b>
<b>Investment (Large set-up or fixed costs)</b>	Local	Idiosyncratic initial and ongoing investment in process
<b>Learning effects</b>	Local	Idiosyncratic learning regarding process
<b>Complementarity effects</b>	Population	Reciprocal social learning over course of the process
<b>Coordination effects</b>	Population	Social coordination with actors
<b>Expectation effects</b>	Population	Interactive development of preferences

**Table 2: Categorization of Mechanisms regarding respective Level of Application and Description of Effect in the Individual Process, based on Dobusch and Schüssler (2012).**

The process Pierson (2000) describes is close to the type of social process involved in a consumption decision and the following consumption processes. This process has to be understood in terms of the path it took to get there. While Pierson claims that consumption processes entail short causal chains and require little coordination, this is not true for all kinds of decisions in the economic realm. In cases of extended and continuous commitment to a consumption decision with a social dimension, such processes are bound to occur as well. In Section 2.2 features of consumption decisions relevant in this realm are identified, such as individual importance, necessary investment, and exclusivity. In fact some researchers have already analyzed path dependence affecting the individual and identified different relevant levels influencing individual path dependence.

#### 2.1.4 Individual Path Dependence and Mechanisms – The Research Gap

As introduced, the concept of path dependence at its core has the notion that dynamic processes in the economic realm can lead to the selection of an inferior outcome over time. This occurs due to historical events and contrary to popular economic theory. According to the concept, a path persists and is not – or cannot – be corrected, even if the rationale would suggest a correction.

Arthur (1988, 1989) observed an aggregate level of adoption, but referred to individual choices that were influenced by adoption levels and resulting in increasing returns.

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