Chapter 6
Degrees of Change in Enterprises

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Abstract Enterprise change can be seen to have different degrees, each of which is progressively wider in scope and different in nature, varies in type of intervention, and absorbs an increasing amount of environmental complexity. In this chapter, three degrees of enterprise change are identified. The first degree of change is about restructuring in an operational scope with focus on reliability, cost containment, and efficiency. The second degree is broader in scope, more dynamic in nature, and focused on value creation through reengineering. The third degree of change is complex, strategic, and aimed at fundamental rethinking and value innovation. It is argued that each successive degree of change addresses a progressively more complex environmental context and calls for increasingly developed information technology capability.

6.1 Introduction

In the increasingly interconnected, complex, and dynamic environment, the unprecedented frequency and magnitude of exogenous shocks forces organisations not only to change continually, but also to reinvent their very essence. At the same time, the role of IT as the enabler and driver of enterprise change has increased in importance.

Enterprise change is not uniform in its type, scope, or environmental contingencies, but differs in its *degree* in distinct orders of magnitude. In this chapter, a typology of three degrees of enterprise change is put forward. It is suggested that each

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successive degree is progressively wider in scope, more sophisticated in type, and absorbs an increasing amount of environmental complexity. Moreover, the nature and role of IT in these different degrees of enterprise change is discussed.

In the following, Sects. 6.2 through 6.5 provide a theoretical background for the proposed typology. In Sect. 6.2, we will review three qualitatively different yet interdependent "domains of work" as identified in the classical sociological literature (Parsons 1960; Thompson 1967) and elaborated by Hoebeke (1994) from the work levels perspective (also: Jaques 1998; Rowbottom and Billis 1987). In Sect. 6.3, we summon four "causal textures" (Emery and Trist 1965) of the environment that denote increasingly complex types of environment. And in Sect. 6.4, we review three types of enterprise change as frequently distinguished in literature (Hamel and Prahalad 1994; Keidel 1994). In Sect. 6.5, we summarise and extend our earlier work on the typology of IT Realms (Korhonen and Poutanen 2013; Korhonen and Hiekkanen 2013). Finally, in Sect. 6.6, we put forward the typology of three degrees of enterprise change, integrating the concepts introduced in the earlier sections.

6.2 Domains of Work

In the classical sociological literature (Parsons 1960; Thompson 1967), three levels of social organising are commonly identified. Parsons (1960) identifies three distinct levels of responsibility and control—technical, managerial, and institutional. The functions at these levels are interdependent and qualitatively different.

Relatedly, Hoebeke (1994) identifies recursively linked *domains of work*, each with its own language, interests, and other emergent characteristics. Each domain comprises three vertical levels, or strata (Jaques 1998), with the top and bottom level overlapping with another domain (see Table 6.1). The first three domains in Hoebeke's scheme—the added-value domain, innovation domain, and value systems domain—appear to be in line with Parson's three levels, respectively. These domains are described in more detail below.

6.2.1 Added-Value Domain

The *added-value domain* (Hoebeke 1994) spans requisite strata I–III (Jaques 1998). The focus is on efficiency of operations, operational quality and reliability, not on

Table 6.1 Levers of change at strata I–III

Stratum	Work output	Lever of change
III	Systematic provision	Linear extrapolation from current trends
II	Situational response	Continuous improvement of work
I	Prescribed output	Streamlining work; eliminating waste

the conception of new products and services. It addresses the question of "how" and is concerned with *doing*: producing, selling, or providing services (Olivier 2013). The "*requirements of a group of clients are transformed into those requirements being met*" (Hoebeke 1994). Decision-making involves accountability for existing resources. According to Olivier (2013), this is where most companies operate and where 95% of adult human work takes place.

At Stratum I, work has a *prescribed output* (Rowbottom and Billis 1987), confined by specifications, requirements, quality standards or acceptance criteria. To materialise this specified output in the most efficient way, the prescribed means are employed with a minimum of waste (Hoebeke 1994). Change at this level is therefore directed at streamlining the existing processes.

At Stratum II, *situational response* (Rowbottom and Billis 1987) to each case of work requires judgement, interpretation, and reflection of each specific situation and adjustment to the varying customer needs. The specific client requirements are moulded into minimal critical specifications on the input, output, procedures and tools for the people working at Stratum I (Hoebeke 1994). As work is continually redefined, improved and automated to increase efficiency and reliability of operations, change at this level is about continuous improvement.

The output of Stratum III work is *systematic provision* (Rowbottom and Billis 1987) that accommodates to the varying needs of today as well as those of the future. This requires developing alternative products and services, as well as alternative ways of meeting the requirements and needs of known clients (Hoebeke 1994). The kind of product or service to be provided is given, as are the people, buildings, and equipment, yet there is much room for technical improvement and innovation (Macdonald et al. 2006). At this level, the changing requirements of the as-yet-unknown but probable future are predicted by extrapolating from current trends.

Table 6.1 summarises the three strata in the added-value domain.

6.2.2 Innovation Domain

Strata III–V comprise the *innovation domain* (Hoebeke 1994). This domain shifts away from operational business-as-usual and is concerned with added value for the future: managing continuity and change, devising new means to achieve new ends, and letting go of obsolete means and ends (McMorland 2005). The domain is about asking "why" or "so what" and it entails more complex and often abstract activities that maintain the continuity of operations, while following the organisation's strategic intent (Olivier 2013).

Stratum III forms a hinge between the added-value domain and the innovation domain, as the relations between the two domains need an overlapping set of common activities (Hoebeke 1994). Work at Stratum IV entails *comprehensive provision* (Rowbottom and Billis 1987), where the means and ends of underlying added-value work systems are adjusted to reshape profitability within the overall business

Table 6.2 Levers of change at strata IV–V

Stratum	Work output	Lever of change
V	Field coverage	Whole system transformation
IV	Comprehensive provision	Pairwise comparison of known systems

purpose. The signals of change in the value systems of the major stakeholders are transformed into "*new generic products and services, which, at the same time, make this change perceptible to them*" (Hoebeke 1994). Resources need to be negotiated and reallocated between the Stratum III work systems. Change is discontinuous, but predictable, and sought through pairwise comparison of existing systems.

Field coverage (Rowbottom and Billis 1987) at Stratum V expands the scope from a range of products or services to a framework that specifies a general field of need. Changes in the value systems are sensed and reflected in the creation of whole new product/service/market/technology combinations (Hoebeke 1994). The whole system addressing a field of need is transformed, which creates a point of no return (ibid.).

A summary of the two additional strata provided by the *innovation domain* is provided in Table 6.2.

6.2.3 Value Systems Domain

Hoebeke (1994) refers to Strata V–VII as the value systems domain. This is the domain of multinational corporations and international institutions and about creating "*new languages and new descriptions and prescriptions about the world*" (Hoebeke 1994). Decisions pertain to often-global issues of resource allocation and where and in what to invest or disinvest, when and why, which requires integrated thinking across diverse fields (Olivier 2013).

Again, Stratum V forms a hinge between the innovation domain and the value systems domain. Stratum VI represents *multi-field coverage* (Rowbottom and Billis 1987), where the task is to ensure that the output covers the whole complex of fields of need in a coordinated way. Complexity is not so readily contained, but the "great organisational divide" is crossed to a "whole world" view (Jaques 1998). Stratum VI widens the perspective from an individual system, such as organisation, to the larger ecosystem. Stratum V systems are shaped from the outside. This involves articulating the relationships between the strategic business units (Cashman and Stroll 1987) and direct interaction with the external social, political, and economic environment (Macdonald et al. 2006). Development becomes non-teleological (Hoebeke 1994) and change is about creating the future rather than predicting it.

Meta-field coverage (Rowbottom and Billis 1987) at Stratum VII is concerned with managing the development, formation, and construction of various complexes or conglomerates of Stratum V organisations in order to produce an output that covers the whole model-field. Rather than responding to the needs of specific markets

Table 6.3 Levers of change at strata VI–VII

Stratum	Work output	Lever of change
VII	Meta-field coverage	Shaping conglomerates of stratum V systems
VI	Multi-field coverage	Shaping stratum V whole systems

or sections of the population, Stratum VII work is concerned with judging the needs of society, nationally and internationally, and deciding what types of business units to provide to satisfy them. Change at this level pertains to the development of language, values, and culture (Hoebeke 1994).

The summary of the two additional strata provided by the *value systems domain* is provided in Table 6.3.

6.3 Causal Texture of the Environment

Just as the complexity of biological organisms cannot be isolated from the complexity of their environment (Lineweaver et al. 2013), the complexity of the organisation is contingent on the complexity of its environment. While the organisation cannot be characterised without characterising its environment, the environment cannot be characterised without characterising the kinds of organisations for which it is an environment (cf. Emery and Trist 1973).

To analyse the exchange processes between the organisation and elements in its environment, Emery and Trist (1965) reintroduce the concept of the causal texture of the environment (Tolman and Brunswik 1935) at a social level of analysis. The causal texture refers to the processes through which interdependencies in the environment come about.

Emery and Trist (1965) identify four "ideal types" of causal texture:

1. Placid, randomised environment
2. Placid, clustered environment
3. Disturbed-reactive environment
4. Turbulent field

Emery and Trist (1973) have hinted at a possible fifth type of environmental texture, while McCann and Selsky (1984) and Babüroğlu (1988) have indeed elaborated on such a fifth type. However, this hyperturbulent (McCann and Selsky 1984), or vortical (Babüroğlu 1988), environment is a theoretically limiting case in the same vein as Type 1 environment. Thereby, it is excluded from this discussion.

The four environment types identified by Emery and Trist (1965) are discussed in more depth below.

6.3.1 Placid, Randomised Environment

The simplest type of environmental texture is the *placid, randomised environment* (Emery and Trist 1965), in which goals and noxiants ("goods" and "bads") are independent, relatively unchanging, and randomly distributed. Organisations can exist adaptively as single and small units with no need to differentiate between tactics and strategy (ibid.): "*the optimal strategy is just the simple tactic of attempting to do one's best on a purely local basis*" (Schützenberger 1954, p. 101). The survival of an organisation in this type of environment is a simple function of the availability of environmental relevancies and the response capabilities of the organisation—no complex organisational capacity needs to be postulated (Emery and Trist 1973).

Emery and Trist (1973) go as far as to say that system behaviour in the placid, randomised environment does not involve choice. Hence, such environment would necessitate a *state-maintaining system* (Ackoff 1971). However, even a modest planning horizon and storage capacity is adaptive to the system in such environment (Emery and Trist 1973). Appropriate learning behaviour in the placid, randomised environment is conditioning rather than trial-and-error. Consequently, to survive in these environments, higher-order systems must degrade their learning accordingly, yet they will also strive to create more order in the randomness (ibid.).

Emery and Trist (1973) consider this type of environment as an extreme theoretical limit. They recognise it as relevant for "some secondary aspect" of an organisation and as likely to occur in environments designed to maximise prediction and control of human behaviour, for example, the blank, unvarying environments of psychological conditioning experiments.

6.3.2 Placid, Clustered Environment

In the *placid, clustered environments* (Emery and Trist 1965), goals and noxiants are not randomly distributed, but occur together in certain ways. The probability of an organisation's survival is thus critically dependent on its position in the environment (Emery and Trist 1973). To reach these "optimal locations", clustering of resources and development of competences, subordinate to the strategic objective, are required. Organisations tend to grow in size and become hierarchical, with a tendency towards centralised control and coordination (Emery and Trist 1965).

The need arises to distinguish strategy from tactics. Survival in the placid, clustered environment requires a threshold mechanism to evoke reaction only to the more general aspects of the environment rather than dealing tactically with each environmental variance as it occurs (Emery and Trist 1973).

An organisation must be at least goal-directed to adapt this type of environment (Emery and Trist 1973): the course of action is determined more by the goal of the system than by the immediately present goals and noxiants. A *goal-seeking system*, according to Ackoff (1971), has a choice of behaviour: it does not react deterministically but can respond differently to particular events in an unchanging

environment until a particular outcome is attained (Emery and Trist 1973). Survival of the system is contingent on its knowledge of its environment.

6.3.3 Disturbed-Reactive Environment

The *disturbed-reactive environment* (Emery and Trist 1965) is like a placid, clustered environment in which more than one organisation of the same kind is postulated. This co-presence has fundamental implications on the environmental field: what each organisation knows about the environment can also be known by another, which is also known by this other (Emery and Trist 1973).

This type of environment gives rise to actions aimed at invoking tactics of other organisations so that one may further its goals. The organisation must therefore be able to choose between a number of possible tactical options (Emery and Trist 1973). Such a *purposeful system* (Ackoff 1971) exhibits will: it can change its goals as well as select ends and means. The capacity or power to move at this will in the face of competitive challenge becomes a more defining objective than that of finding the optimal location (Emery and Trist 1973).

The disturbed-reactive environment is still a relatively stable ground. The competing organisations can be considered as an ultrastable unit (cf. Ashby 1960).

6.3.4 Turbulent Field

In the *turbulent field* (Emery and Trist 1965), the dynamic properties arise not only from the interactions of the organisations but also from the field itself—the "ground" is in motion. The complexity exceeds individual organisations' capacities for prediction and control; they cannot adapt to the turbulent environment through their direct interactions but must rely on commonly held values as the control mechanism in the field (ibid.).

Emery and Trist (1973) identify four trends that together contribute to the emergence of dynamic field forces:

- Organisations becoming so large that their actions induce autochthonous processes in the environment
- The emergence of active field forces due to the increasing interdependence between the economic and the other facets of the society
- The increasing rate of change and deepening interdependence between organisations and their environment due to the increasing reliance upon scientific research and development
- The radical increase in the speed and ease of communication and travel

6.4 Types of Change Interventions

Three types of enterprise change interventions are frequently distinguished in literature. These types go with different names, but labels such as restructuring, reengineering, and rethinking (Keidel 1994) capture the essence and are commonly used.

6.4.1 Restructuring

In *restructuring* (Hamel and Prahalad 1994; Keidel 1994) type of interventions, strategic design actions are mostly focused on the number of nodes (size) and links (density), for example, downsizing or expansion in the resource base (Dijksterhuis et al. 1999), number of organisational units, and number of organisational levels (Keidel 1994).

Hamel and Prahalad (1994) point out that change interventions of this type is often "denominator management", aimed at reducing the denominator component of return on investment: investment, net assets, capital employed, or headcount. Whereas growing the net income would require insight into new growth opportunities, changing customer needs, required new competencies, and so on, cutting the denominator "*doesn't need much more than a red pencil*" (Hamel and Prahalad 1994, p. 9). They liken downsizing to "corporate anorexia" that can make an organisation thinner, but not necessarily healthier.

6.4.2 Reengineering

Reengineering (Hammer and Champy 1993; Hamel and Prahalad 1994; Keidel 1994) the organisation pertains to changing the position of nodes or links within the organisation (Dijksterhuis et al. 1999), for example, through process innovation, redesign of business processes, or redeployment of resources.

Reengineering is about *radical redesign of business processes* to achieve dramatic performance improvements (Hammer and Champy 1993). It tends to be tactical, rather than strategic, focusing on operational processes with a relatively near-term improvement time frame (Keidel 1994). According to Hamel and Prahalad (1994), it offers at least the hope of getting better, not just smaller. However, the real goal of reengineering is often reduced costs rather than higher customer satisfaction. Also, reengineering measures tend to be about catching up with competition rather than "competing for the future".

6.4.3 Rethinking

Rethinking (Keidel 1994), as well as *reinventing* industries and regenerating strategies (Hamel and Prahalad 1994), addresses organisational identity, purpose, and capabilities (Keidel 1994). Strategic design actions are about changing the content of nodes and links (Dijksterhuis et al. 1999). Such changes pertain to properties such as individual and collective mindsets, norms and beliefs, and organisational culture.

According to Keidel (1994), organisational design mirrors the mental models of people, that is, the organisational cognition. The leverage of rethinking lies in cognitive change, not behavioural; and in distinctive organisational capabilities, not in resources or processes. While "thinking about thinking" is difficult, the potential of rethinking is significant. It is rarely pursued for immediate or even mid-term ends (ibid.).

6.5 Three Information Technology Realms

In earlier work, we have postulated a tri-partite approach to enterprise architecture (Korhonen and Poutanen 2013) or, more broadly, three "IT Realms" (Korhonen and Hiekkanen 2013).

Technical realm has an operational focus and is geared to present-day value realisation. IT can be said to follow business; it is used to create resources, such as information assets or application and technology infrastructure. IT planning is a rational, deterministic, and economic process that aims at business–IT alignment, operational efficiency, and IT cost reduction. The focus of IT is on operational quality and reliability—producing predictable outcomes on a consistent basis. Variance is eliminated through cascaded goals, metrics, and internal controls. Human error is removed from the production process through established work practices, quality standards, and policies that regulate discretion.

This is the realm of technically oriented IT work: information systems design and development, enterprise integration, solution architecture work, and IT operations. It also addresses architectural work practices and quality standards, for example, architectural support of implementation projects, development guidelines, and change management practices.

Socio-technical realm plays an important role as the link between strategy and execution: the business strategy is translated to the design of the organisation so that the strategy may be executed utilising all the facets of the organisation, including IT. Knowledge about the internal operation and construction of the organisation is of essence in enabling organisational change (Hoogervorst 2009). IT has an enabling role of enhancing organisational competencies (cf. Peppard and Ward 2004), that is, abilities to utilise and mobilise organisation-specific resources to strategic ends.

This is the realm of business domains and their assigned business activities; business functions and business concepts that these business domains need to perform their assigned business activity; and high-level business processes that show how the business domains collaborate to achieve the organisational goals and strategies (Versteeg and Bouwman 2006).

In the *ecosystemic realm*, the organisation relates to its business ecosystem, industry, markets, and the larger society, co-evolving vis-à-vis its environment: its business ecosystem and the society at large. The perspective shifts from the relatively stable, closed, and controllable system of a self-sufficient enterprise to the relatively fluid, open, and transformational system-of-systems of networked, co-evolving, and co-specialised entities. The focal organisation is objectified from the outside, as a co-evolutionary constituent within the broader business ecosystem.

In the *ecosystemic realm*, IT enables strategic capability (cf. Peppard and Ward 2004); in other words, business follows IT.

6.6 Three Degrees of Enterprise Change

In the following, we operationalise the three degrees of enterprise change in terms of their scope, environmental complexity, type of intervention, nature of change, and the role of IT in change, as summarised in Table 6.4 and illustrated in Fig. 6.1. The three degrees of change are elaborated below.

Table 6.4 The three degrees of enterprise change

|	First degree	Second degree	Third degree
Scope	Operational	Tactical	Strategic
Environmental texture	Static Clustered	Disturbed-reactive	Turbulent field
Type of intervention	Restructuring	Reengineering	Rethinking
Conceptualisation of change	Static	Dynamic	Complex
IT realms involved	Technical	Technical Socio-technical	Technical Socio-technical Ecosystemic
Focus of IT	Reliability Cost containment Efficiency	Validity Value creation Effectiveness	Resilience Value innovation Efficacy
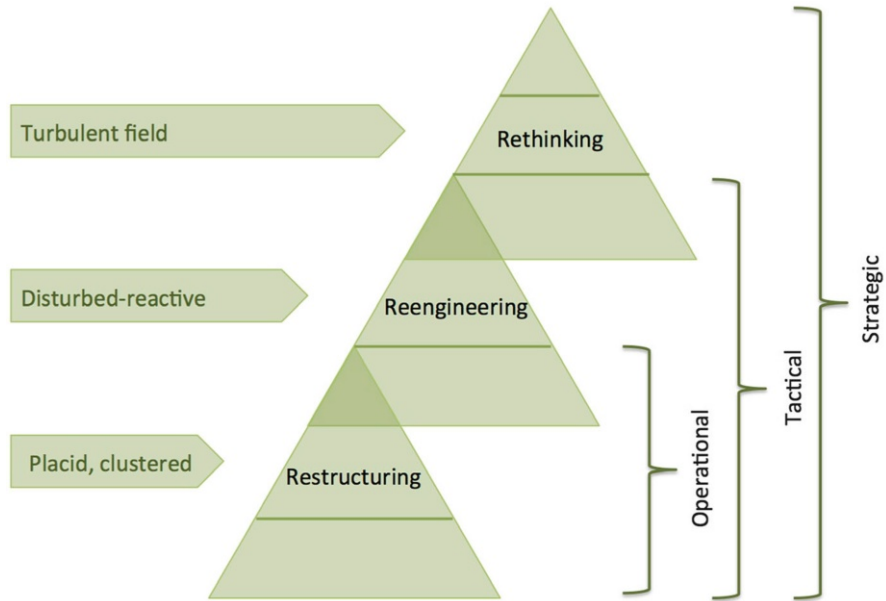
Fig. 6.1 The environmental complexity determines the type and scope of enterprise change

6.6.1 Scope of Change

Enterprise changes of the first degree take place within the operational scope of the added-value domain (Hoebeke 1994). In this scope, the actual day-to-day work of the change initiative takes place in change projects (Greefhorst and Proper 2011).

Enterprise changes of the second degree are of tactical scope. As any level of change requires consideration of all subordinate levels (Rouse 2005), this scope would embrace both the added-value domain and innovation domain (Hoebeke 1994). The overall enterprise change is executed through a portfolio of change programmes. The definition, overall planning and mutual synchronisation of these programmes are additional concerns within this scope (Greefhorst and Proper 2011).

Enterprise changes of the third degree are strategic in scope and span all three work system domains: added-value, innovation, and value systems (Hoebeke 1994). They embrace the tactical scope of change but further encompass the overall enterprise transformation at the strategic level: strategic direction, strategy formulation, and execution (Greefhorst and Proper 2011).

6.6.2 Environmental Contingency

Enterprise changes of the first degree appear to be requisite in environments, whose environmental texture (Emery and Trist 1965) is placid and clustered. Historically, this environment has been "man's accustomed social habitat" (Trist 1977). It represents the first departure from the theoretical limit for the organisation: placid, randomised environment, where the planning horizon is zero and the organisation's behaviour fully predictable. The organisation clusters resources to competences that allow systematic provision (Rowbottom and Billis 1987) to cater for the general need in the environment (cf. Emery and Trist 1973). Enterprise changes of the first degree pertain to resizing these resource clusters.

Enterprise changes of the second degree would address the disturbed-reactive environment (Emery and Trist 1965). The organisation must be able to choose between tactical options and to set and change its goal, that is, its strategic intent (cf. McMorland 2005). Changes of the second degree are about changing the way in which resources are used vis-à-vis these changing goals.

Enterprise changes of the third degree would be needed in the face of the turbulent field (Emery and Trist 1965). The organisation is subject to increasing entanglement with its environment at the institutional level (Parsons 1960) and must increasingly rely on value-based controls to maintain cohesion (Emery and Trist 1965). Accordingly, changes of the third degree go deep into shared values, norms, and beliefs that need to be changed to enable full-system transformation.

6.6.3 Type of Change Interventions

Removing the waste (Stratum I), improving the work processes (Stratum II), and changing the ways of producing and providing products and services (Stratum III) exemplify change interventions of the restructuring type (cf. Hamel and Prahalad 1994; Keidel 1994). They take place within a certain resource base that can be scaled up (e.g. increasing production capacity) or down (e.g. reducing headcount).

Restructuring is typically conceptualised as *static change* (Eoyang and Holladay 2013): the situation before is compared to that of after, but there is no consideration of movement between the two. This simplified view is applicable to changes that are short-term or limited in scope, when there are few complicating factors and control of the environment can be assumed. Same change can successfully be made in similar circumstances.

Change interventions of the second degree would be about reengineering (cf. Hamel and Prahalad 1994; Keidel 1994): reassembling resources to altogether new Stratum III work systems of production or service delivery in order to ensure comprehensive output that caters for a given territorial or organisational society (cf. Rowbottom and Billis 1987).

Reengineering could be characterised as *dynamic change* (Eoyang and Holladay 2013) that assumes a predictable, yet moving, endpoint, towards which multiple

forces cause movement. The endpoint can be changed by manipulating those forces. This view of change is applicable to progressions or state-based changes with one-way causality, few influences, and clear boundaries.

Enterprise changes of the third degree would focus on whole-system enterprise transformation that calls for rethinking (cf. Hamel and Prahalad 1994; Keidel 1994) type of change interventions.

The respective view of change would be *dynamical change* (Eoyang and Holla-day 2013) that results from unknown forces acting unpredictably and whose path or outcomes cannot be predicted or controlled. Patterns emerge, but can only be dis-cerned in retrospect. An example of this variety would be a cascading change, when the accumulated tensions and pressures are released in an unpredictable and un-controlled way. This view of change is applicable when boundaries are open, many factors influence events, and root causes are elusive.

6.6.4 The Role of Information Technology

The role of IT in enterprise change varies by the degree, ranging from operational support to a strategic driver. With each additional degree of enterprise change, a new IT realm would be activated and the emphasis in the previous realms shifted, accordingly. This proposition is illustrated in Table 6.5.

In enterprise changes of the first degree, IT investments usually pertain to one-off application or solution development and are based on expected IT cost reduc-tions (cf. Ross 2003; Ross et al. 2006). With the focus on efficiency, cost contain-ment, and reliability, they are typically geared to restructuring type of changes: automating operational work and business processes in Technical Realm. The de-livered systems may fully fulfil the specified business needs, but with the lack of technology standards and enterprise-wide IT architecture, the proliferation of legacy systems and idiosyncratic point-to-point integrations renders the application land-scape inert, expensive, and risky in the face of change.

In enterprise changes of the second degree, IT plays a dual role of supply and de-mand. On the one hand, enterprise-wide IT architecture in Technical Realm provides efficiencies through technology standardisation and centralised shared infrastructure

Table 6.5 Focus of IT in different degrees of enterprise change

	First degree	Second degree	Third degree
Ecosystemic			Strategic IT capability and digital business models
Socio-technical		Enterprise architecture	Modular architecture
Technical	Development to require-ments	Technology standardisa-tion, shared infrastructure	Optimised core of digi-tised data and processes

(cf. Ross 2003; Ross et al. 2006). On the other hand, resources and IT investments are shifted from application and solution development to enterprise (business) architecture (cf. Korhonen and Molnar 2014), business process management, portfolio management, and the development of IT-enabled competences. With the focus on effectiveness, value creation, and validity, IT enables reengineering type of changes: IT is increasingly leveraged to *informate* (Zuboff 1985) knowledge work and appropriate business processes.

Enterprise changes of the third degree are driven by IT. The business model is digital and enabled by IT-enabled strategic capability. With the focus on efficacy, value innovation, and resilience, IT enables continuous reconfiguration of *unbundled* and *liquefied* (Normann 2001) resources, through which the organisation can shift its value proposition vis-à-vis its ecosystem (Vargo and Akaka 2009) in alignment with semi-coherent strategies. The core of data and processes is optimised and digitised in Technical Realm. It is difficult to make changes to that core, but building new products and services onto the core becomes easier and faster. Modular architecture (cf. Ross 2003; Ross et al. 2006) in Socio-Technical Realm enables strategic agility through reusable modules built upon the optimised core or by allowing locally customised modules to connect to core data and core processes. While not reducing the need for standardisation, the modular architecture allows for local customisation and provides a platform for innovation.

6.7 Conclusion

In this chapter, we proposed a typology of three degrees of enterprise change, while also discussing the nature and potential role of IT in these different degrees of enterprise change. Each successive degree of change is progressively wider in scope, more sophisticated in type, and absorbs an increasing amount of environmental complexity.