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THEORY DEVELOPMENT

From sovereign IT governance to liberal IT governmentality? A Foucauldian analogy

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ABSTRACT

Changes in the technological and societal environments that surround organisations have disrupted the classic governance frameworks that corporate and information technology (IT) managers have designed to align IT uses with organisational missions, strategy, and values. The formerly "sovereign territory" of IT departments has been invaded, jeopardised by the autonomy of individual users and the changing nature of IT. Thus questions of IT governance in the age of IT consumerisation are highly critical. In response, this theoretical article introduces an alternative approach, relying on the philosophy of Michel Foucault and his concept of governmentality. The proposed liberal model of IT governance provides a sound foundation to address the challenges associated with modern technological and societal environments in which today's organisations must evolve. The inferences and analytic implications related to this new liberal model of IT governance lead to the development of a set of governance principles and propositions to guide practice and further research.

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Michel Foucault; governmentality; reversed adoption logics; analogical reasoning; liberal model of IT governance

> When I got to work as Secretary of State, I opted for convenience to use my personal email account…, because I thought it would be easier to carry just one device for my work and for my personal emails instead of two.
>
> – Hillary Clinton (news conference, addressing her use of a private email server, 10 March 2015)

In these terms, former Senator and candidate for the US presidency Hillary Clinton justified her use of private information technologies (IT) for government business, in contradiction with existing policies. In March 2015, it became public knowledge that Clinton, during her tenure as Secretary of State, preferred to use her personal smartphone and family's private email server for professional communications, rather than official State Department email accounts maintained on federal servers. "I think the most important of the mistakes I made was using personal email", Clinton said (CBS, 2017). The controversial issue was not solely her use of a private server as Secretary of State but rather the ability that this choice provided her – namely, to be able to delete official emails containing classified information, which would have been impossible on federal servers. The email controversy played a prominent role in the 2016 US Presidential campaign, yet today, President Donald Trump persists in his own existing tech habits, despite having been handed a secure device by officials (Kang, 2017).

These infamous cases provide typical examples of how and why IT governance policies often get circumvented in organisations. In his seminal definition, Weill (2004, p. 1) defines *IT governance* as a means for "specifying the framework for decision rights and accountabilities to encourage desirable behaviour in the use of IT", where desirable behaviour is "consistent with the organisation's mission, strategy, values, norms and culture". The email controversies highlight that desirable behaviour for the organisation (eg, protecting, classifying, archiving, tracing) might conflict with desirable behaviour for users (convenience); they also reveal how easily people can choose to privilege their desires over the organisation's, because they do not know or choose to ignore corporate IT policies.

Clinton's email problem reveals a complex challenge that organisations increasingly face in some form. Historically, enterprise IT has been pushed by firms. Organisations have selected, deployed, and promoted IT that fulfils their business goals and supports their business processes (Markus & Keil, 1994). Employees thus regarded enterprise IT as part of their professional lives, governed by corporate policies. But in both research and practice, evidence of a shift has emerged, as employees increasingly bring [their] own devices (BYOD) or software (BYOS) into their organisations (Harris, Ives, & Junglas, 2012; Köffer, Anlauf, Ortbach, & Niehaves, 2015a, 2015b). Whereas IT departments were once the sole dispensers and managers of IT at work, they now confront *reversed adoption logics* (Leclercq-Vandelannoitte, 2015a, 2015b), in which employees take the initiative

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to enhance their own business processes by promoting consumer IT. This trend coincides with greater blurring of private and professional lives (Köffer et al., 2015a, 2015b; Ortbach, Bode, & Niehaves, 2013) and increased demands for tools at work that are publicly available online (eg, Github for code repository, Yammer for social networking) (Alimam et al., 2017) and lack sufficient internal equivalents (GARTNER, 2012). Thus, phenomena such as IT consumerisation (Ortbach et al., 2013), individualisation (Baskerville, 2011a, 2011b; Köffer et al., 2015a, 2015b), and malleability (Schmitz, Teng, & Webb, 2016), coupled with so-called shadow IT (ie, choices and investments by organisational units other than corporate IT; Behrens, 2009; Rentrop & Zimmermann, 2012), are disrupting classic IT governance policies.

In such a context, how can IT governance still be exercised? The aforementioned trends raise IT governance issues (Besson & Rowe, 2012; Weill, 2004; Weill & Ross, 2005) that have not been fully addressed by information systems (IS) research or tackled by companies. To gather relevant insights, we turn to the concept of "governmentality", as introduced by the French philosopher Michel Foucault (Foucault, 2007, 2008) in a series of lectures at the College de France from 1977 to 1979. The term of governmentality is a neologism coined by Foucault, combining the terms government and rationality. Governmentality refers to an underlying rational frame grounding a set of given government practices, which are performed to shape, guide, and direct individual and group behaviours and actions in specific directions. Foucault's governmentality approach bears similarities with various aspects of organisation theory, including the notion of governance, but this analogy is rare in academic research (Clegg, Tyrone, Rura-Polley, & Marosszeky, 2002), especially IS literature. Yet political perspectives, highlighting information politics and analogies to the state and government (Davenport & Prusak, 1997), have proven valuable for investigating IT governance (Weill, 2004; Weill & Ross, 2004).

This article therefore responds to calls for greater theory development and research that enable IS scholars to develop innovative ways of thinking (Markus, 2014; Markus & Saunders, 2006; Mingers & Willcocks, 2004; Rowe, 2012). To produce original, socially relevant knowledge, researchers must explore alternative approaches, and philosophy offers some valuable insights towards that end (Hassan, Mingers, & Stahl, 2016). We adopt analogical reasoning (Hesse, 1966) to link IT governance with Foucauldian governmentality, because analogies are not only central to creative thought (Boden, 2004) but also enable us to revisit classic theories (Bartha, 2013) and develop novel concepts (Gentner, Holyoak, & Kokinov, 2001) pertaining to insufficiently researched, complex topics (Hassan, 2014). Foucault's theory of governmentality has a strong heuristic slant for organisational topics and IS research (Willcocks, 2004), in particular for IT governance. Although Foucault did not elaborate a comprehensive methodology for studying ways to govern people and things, he developed several concrete examples to track the historical transformations of governmentality (Foucault, 2007, 2008), and he specified a set of archetypes that detail ways to exercise power. Our aim is not merely to borrow Foucauldian concepts (Hassan, 2011) but rather to build on them to develop a new framework for governing IT in the forthcoming technological era, marked by an employee-driven revolution in which consumer IT increasingly transforms into enterprise IT (Harris et al., 2012). On the basis of a Foucauldian approach to liberal governmentality, we propose a *liberal model of IT governance* – a new concept that we apply in an effort to grasp the challenges associated with the modern technological and societal environments in which organisations currently evolve.

We present our motivational background next, detailing the new challenges associated with IT governance. After describing the analogical reasoning process, we outline the source domain (ie, Foucauldian framework of governmentality), with an in-depth analysis of Foucault's lectures at College de France. We then describe IT governance, as the target domain. Combining these efforts, we abstract and transfer a Foucauldian governmentality approach to IT governance, through an analogical model of their similarities and differences, with which we infer a renewed concept of *liberal IT governance*. Finally, we discuss some implications of this model and provide propositions and a set of principles to inform both further research and practices involving IT governance.

1. Motivational background: new challenges for classic IT governance

1.1. *Changes to the technological context*

Historically, corporate executives and IT managers chose which IT systems workers would use, as well as why, how, and when (Markus & Keil, 1994). Users had no choice other than to accept such organisational choices; organisations in turn used IT governance mechanisms to rationalise, direct, and coordinate IT-related decisions (Huang, Zmud, & Price, 2010). These mechanisms are still valuable for most enterprise IT investments related to an organisation's core business processes (eg, enterprise resource planning), yet they seem less appropriate for consumer IT that get introduced directly by

groups or individuals. The arrival of consumer IT at work is not new; end-user computing initiated an employee IT-driven revolution in the 1980s (Harris et al., 2012). But the technological and societal environments surrounding organisations have evolved rapidly, leading to a deeper and far more invasive user-driven revolution. In particular, three underlying changes in the nature and modes of consumption for IT extend the scope of IT beyond the organisation (Crowston, Fitzgerald, Gloor, Schultze, & Yoo, 2010).

First, IT is more pervasive and closely integrated into people's daily lives (Camacho, Foth, & Rakotonirainy, 2013; Ebling, 2016; Favela, Kaye, Skubic, Rantz, & Tentori, 2015), as a result of changes to its inherent characteristics (eg, greater computing power, programming languages, frameworks, algorithms, connectivity, miniaturisation, wearability) that have radically altered people's interactions with IT. The pervasiveness and availability of mobile devices and telecommunication networks also enable people to use their personal mobile IT in private and professional contexts (Cummings, Massey, & Ramesh, 2009; Gens, Levitas, & Segal, 2011; Niehaves, Köffer, & Ortbach, 2012; Ortbach et al., 2013). This trend continues to expand, such as through the deployment of IT-enabled objects in living and working environments, along with the emergence of the Internet of Things (Boos, Guenter, Grote, & Kinder, 2013).

Second, the use of IT in organisations requires less mediation by dedicated experts (eg, IT engineers) (Koch et al., 2014), as exemplified by the rise of the "Software as a Service" (SaaS) model (Bhattacherjee & Park, 2014) – usually depicted as a growing but unavoidable evil (Fürstenau & Rothe, 2014). With the rise of SaaS, the specialised knowledge of IT departments seems progressively devalued, and their derived power (Knights & Murray, 1994; Silva & Backhouse, 2003) has shifted somewhat, to users and business units with direct knowledge about their own business needs, but also to SaaS providers that have greater expertise in technical matters (Tran & Bertin, 2015). In some cases (eg, in large companies), IT departments can leverage these cloud technologies to strengthen their own offerings, such as by promoting the use of selected SaaS services or relying on "Platform as a Service" (PaaS) or "Infrastructure as a Service" (IaaS) models to deploy their own code and servers (Tran & Bertin, 2015). However the rise of the SaaS model implies that users, with increased autonomy, can increasingly subscribe directly to online IT services, often without any mediation by IT employees, such that IT has become not just pervasive but also disintermediated IT departments.

Third, the efficient use of IT no longer requires intensive employee training. Consumer IT and software tools are largely intuitive (Zachary, 2016). As the complexity of use has decreased, knowledge workers require less specific training on the technologies they need to perform their job (Laga, Bertin, Glitho, & Crespi, 2012; Paiva, Morais, Costa, & Pinheiro, 2016). Because employees have grown more familiar with consumer IT, their device competence has increased, enabling them to use their personal IT in an efficient manner to complete their work tasks (Giddens & Tripp, 2014). In this sense, IT has become more invisible to users too.

1.2. *Reversed adoption logics and the potential rise of anarchic situations*

As a result of the changing nature of IT properties and the rapid democratisation of IT, networks, and applications, *reversed adoption logics* (Leclercq-Vandelannoitte, 2015a, 2015b) have developed in organisations, revealing a shift in the classic organisational IT adoption process. Alongside traditional top-down decisions to deploy standardised organisational-owned IT, IT adoption increasingly consists of bottom-up choices by employees to use their personal IT inside and outside their companies. Such evolutions contribute to an individualisation of IT (Baskerville, 2011b); unique setups feature different combinations of privately owned and company-provided IT devices (Ortbach et al., 2013). Examples come from diverse sectors and organisations, beyond the well-known Clinton case. Harris, Ives, and Junglas (2011) report on a US Army captain who developed his own smartphone application to help soldiers on the battlefields of Iraq and Afghanistan, as well as a nurse who used the camera on her personal mobile phone to improve patient care. Behrens (2009) describes a shadow system in a higher education institution that, though initially developed by a single academic, spread to almost 100 staff within 3 years, because it offered a more efficient and responsive working tool for employees than the formal system provided by their organisation.

Beyond their benefits (Köffer et al., 2015a, 2015b), such logics raise concerns about data security, reliability, performance, and accuracy. According to Harris et al. (2011, p. 2), "The formerly sovereign territory of enterprise IT is being invaded by consumer electronic technologies", provoking fear, resistance, and hostility from managers, due to the potential threat to their own power and control over users and IT uses (Niehaves et al., 2012; Yan et al., 2016). Such developments clearly could lead to "anarchic" situations (Harris et al., 2011), characterised by the multiplication of IT within the company without managers' approval. In its etymology, "anarchy" designates a situation without government, principles, rules, or a leader (ONLINE ETYMOLOGY DICTIONARY, n.d.). In mainstream IS literature,

anarchic models of IT governance are either absent (Brown & Grant, 2005) or defined as the "bane of many IT organisations" (Weill, 2004, p. 7). Anarchic situations usually represent a failure to address new IT challenges and an intolerable governance archetype, in that they imply a multiplication of isolated actions that may be at odds (Weill & Ross, 2005).

These changes are recent and complex, so the ensuing shifts in IT governance have not been fully theorised. In line with the demand for more theoretical development in the IS discipline (Mueller & Urbach, 2017), we propose a new conceptualisation of IT governance that takes these developments into consideration and which thus might help IS scholars and practitioners grasp anarchic situations – not as undesired, intolerable situations featuring uncoordinated, disordered usages but rather as increasingly common governance archetypes that organisations must address (Harris et al., 2011). To that end, we rely on a process of analogical reasoning.

2. Method: analogical reasoning

2.1. *Analogy as a central process for theorising a new approach to IT governance*

In the interest of moving the discussion on IT governance forward, we apply analogical reasoning (Hesse, 1966; Holland, Holyoak, Nisbett, & Thagard, 1986; Schön, 1979) to propose how IT governance can be improved within organisations. Analogies are powerful cognitive mechanisms (Gentner & Holyoak, 1997) that support comparisons among systems of objects and encourage inferences to make sense of complex or poorly theorised situations (Barnes, 1984; Mueller & Urbach, 2017). Despite their abstractness, analogies offer critical "pre-theoretical structures" that are essential to theory building (Hassan, 2014, p. 5), as well as heuristic functions (Bartha, 2013). Because it involves abstracting and transferring knowledge from one domain to another, analogical reasoning is central to creative thought (Boden, 2004; Gentner et al., 2001). Analogies also have underpinned the development of Western knowledge (Foucault, 1970) and have constructive, essential roles in scientific modelling and theory construction processes (Hassan, 2014).

Analogical reasoning is applicable not only to empirical observations but also to reconsiderations of traditional concepts, theoretical frames of reference (as studied herein) (Morgan, 1986), historical studies, and past experiences (eg, between the Persian Gulf War and World War II; Holyoak & Thagard, 1997). Analogies help reveal similarities between past and present situations (eg, the Clinton case), because they enable people to grasp new experiences (target domain) in the terms of experiences that are already familiar (source domain) (Gentner & Holyoak, 1997, p. 32). Furthermore, they can be applied to a variety of contexts, from laboratory experiments to naturalistic settings, spanning political debate, psychology, and scientific research (Holyoak & Thagard, 1997).

In this regard, analogical reasoning may be especially effective in organisation studies (Morgan, 1986) and management research, as a means to advance theoretical development by adopting diverse perspectives (Cornelissen, Holt, & Zundel, 2011; Tsoukas, 1993). Organisations can be understood in terms of various images or metaphors, built through analogies with classic managerial concepts (Morgan, 1986). Analogies can help make sense of complex organisational phenomena (Schön, 1979; Weick, 2001), by liberating researchers' imaginations, invoking alternative conceptions of a phenomenon, and thereby guiding action (Tsoukas, 1993). For practitioners and managers, analogies similarly can prompt alternative views and novel frameworks for action (Bingham & Kahl, 2013; Morgan, 1986; Schön, 1979). However, their application in the IS field remains rare (Hassan, 2014). Yet analogical reasoning seems particularly fruitful for addressing our objective. With our goal of thinking outside the box to uncover hidden assumptions and develop a new IT governance approach for consumer IT, analogical reasoning offers a powerful heuristic device, because its ability to transfer meaning means that it can clarify, enrich, and enlighten.

2.2. *Transferring knowledge from a source to a target domain*

Analogical reasoning involves the transfer of meaning from a "source domain" to a "target domain" (Hesse, 1966), or a mapping between a base and target domains (Gentner, 1983, 1989), where each domain is defined by set of objects, properties, relations, and/or functions, together with a set of accepted statements about them (Bartha, 2013). Analogical mapping implies that a relational system that exists among the base objects also exists among the target objects (Gentner, 1989, p. 3). To build an alternative conceptual framework of IT governance, we apply analogical reasoning to transfer the Foucauldian framework of governmentality (source domain or base) to an IT governance framework (target domain), which may help us understand IT governance in modern, radically changed technological environments.

To determine the properties of IT governance as the target domain, we review literature pertaining to IT governance. On the basis of this review, we apply Hesse's (1966) tabular model to conduct our analogical reasoning process (see Table 3, Section 5.2). This model reveals both horizontal relations (ie,

similarities and differences in the mapping between the source domain and the target domain) and vertical relations (ie, causal links between the objects and properties within each domain) (see also Bartha, 2013). In Hesse's terminology, the model draws positive analogies (ie, common properties and similarities between objects in the source and target domains) and negative analogies (ie, different properties) (see Table 2, Section 5.1).

Hesse (1966) also enumerates three criteria to evaluate analogical arguments: (1) a requirement of material analogy, such that the horizontal relations must include similarities between observable properties; (2) a causal condition that requires the vertical relations to be causal relations in some acceptable scientific sense; and (3) a no essential difference condition, which means that the essential properties and causal relations of the source domain must not be part of the negative analogy. We infer some results (ie, emergence of a *liberal model of IT governance*) from our analogical model, reflecting on the similarities and soundness of the match (Gentner, 1983, 1989) between Foucault's governmentality approach and the classic IT governance framework.

3. Source domain: Foucault's governmentality frame

By reflecting on the evolving modes of governmentality, Foucault provides insights for grasping a renewed vision of the exercise of power.

3.1. *Three archetypes of government*

The Foucauldian concept of governmentality (Foucault, 2007) designates the study of government and ways to govern. This neologism was forged in reference to rationality; it seeks to unveil the rationalities that underlie various ways to govern people and thereby produce behaviours that are best suited to achieving the government's policies. It also refers to organised practices to produce these behaviours (eg, mentalities, rationalities, techniques). Foucault describes the emergence, over the course of Western history, of three archetypes of governments that rely on different forms of the exercise of power: sovereignty, *raison d'Etat*, and liberalism. Governmentality originally was developed to analyse a transition to liberal forms of government. We present the three archetypes through a systematic analysis of their main dimensions (function, power structures, and techniques) (Table 1).

3.1.1. Sovereignty and *raison d'Etat*

Sovereignty was based on a feudal type of territoriality, and a society of customary and written law, with embedded commitments and litigations (Foucault, 2007). In the Middle Ages and Renaissance, power was exerted by princes who reigned over goods and properties (ie, land with people); they sustained their possessions through laws decreed and enacted by those princes (sovereignty). Machiavelli offers the archetype of this system, in which the fate of the land is inextricable from the fate of the prince (eg, *The Prince*, 1532).

Using in-depth analyses of philosophy (eg, the seventeenth-century thinkers Palazzo [1604], Bacon [1625], and Chemnitz [1647]) and the evolution of models of thought and the political order (eg, treaty of Westphalia, 1648), Foucault (2007) describes a new model that emerged in the late sixteenth and early seventeenth centuries, shifting away from sovereignty. This *raison d'Etat* (translated literally, "reason of the state") model seeks to reinforce the state, especially as it relates to the European balance of powers. It relies on a society of regulations and discipline (Foucault, 2007). From an external perspective (eg, towards other countries, at the European level), it implies a better balance of power among states by limiting state powers, though it also can lead to the achievement of unlimited power within the focal territory and its population (eg, police state). This outcome relies on the disciplinary mechanisms that Foucault (1977) studied extensively.

Discipline gets exercised on a clearly circumscribed territory, marked by quartering, hierarchical, and functional distributions, as well as specific allocations of people to spaces, such that "The first action of discipline is in fact to circumscribe a space in which its power and the mechanisms of its power will function fully and without limit" (Foucault, 2007, p. 45). Discipline favours extensive, detailed control, exerted on ramifications of social institutions and a multiplicity of organisms and bodies, including the smallest details of human life. It implies close scrutiny and surveillance of every aspect of individual activity, controlled through the construction of a micro-power.

Compared with the sovereignty model, which sought to produce strict domination, the main function of *raison d'Etat* is to produce obedience. It relies on specific techniques, such as "normalisation" (Foucault, 2007, p. 57). Norms established by the state can condition behaviours (eg, prescriptive norms derived from analyses of the best ways to link and connect sub-elements to achieve predefined goals); in turn, "normalising judgments" and "dressage" (Foucault, 2007, p. 57) govern people, by disciplining their behaviours, classifying them, and identifying abnormal behaviours, which together lead to obedience to predefined rules (Jackson & Carter, 1998) and the eradication of abnormal behaviours.

Table 1. Synthesis of the main dimensions of the three archetypes of government inspired by Foucault.

		Sovereignty	*Raison d'Etat*	Liberalism
Function (objective)	*Ultimate objective*	To ensure the prosperity of the sovereign	To eradicate abnormal behaviours	To find the optimal illegality rate depending on the costs of enforcement and of noncanonical practices (nonconformity)
	Educational stake	To produce domination	To produce obedience (normalise, discipline, classify, and correct abnormal behaviours)	To produce freedom
Power structures	*Nature of power*	Sovereign (oppressive and localised in the sovereign ruler)	State (transcendent and unlimited)	Immanent to society (dynamic, permeating, limited by utility)
	Target of power	Ensemble of subjects of law	Multiplicity of organisms and bodies, on which extensive, detailed control is exerted	Populations of individuals and groups with varied interests who produce and react to events
	Space for the exercise of power	Territory (potentially without limitation) dominated by prince (from the capital)	Circumscribed territory, ramified and characterised by quartering, hierarchical, and functional distributions; specific allocations of people to spaces	Favourable milieu, an area of free movements, arranged according to possible events, to enable *laissez-faire, passer et aller*
	Underlying principle	Legality	Discipline	Security apparatuses ("dispositifs") or regulatory controls
	Role of population	Passive object of government to be acted on	Passive object of government to be acted on	Both an object and a subject of government (individual actors are responsible and held accountable for their own behaviour, which also should be measured)
	Regime of truth and instances de véridiction (examples)	Wisdom (eg, clergy)	Reason, calculation by the ruler (eg, State)	Reason, calculation of the governed (eg, Market)
Techniques (apparatus, dispositif)	*Main mechanism of government*	Law (to authorise or ban)	Rules and prescriptions (to get obedience)	Regulation (to influence the milieu in which population moves freely)
	Meaning of governing	Reigning	Ruling or commanding	Regulating people's conducts and making them responsible and accountable
	Interface of the targeted individual's conduct	Will (allegiance, adhesion, coercion)	Obedience (duty)	Freedom (desire)
	Use of norms	Distinction between legality and illegality (definition of what is and is not forbidden)	Prescriptive norms established by the state to distinguish the normal from the abnormal	Norms emerge from a statistical analysis and measurement of the types of conducts and their effects, so actions can be taken to correct deviations and induce best behaviours

3.1.2. From *raison d'Etat* to liberalism

A third model emerged in the eighteenth century, characterised by distinctive functions and techniques for exercising power (Foucault, 2007), including security apparatuses (*dispositif*) and regulatory controls. These new mechanisms are separate from notions of discipline; they no longer seek total control over people or things. Security apparatuses attempt to stick to and observe reality, deduce some realistic goals, and then leverage the reality to reach those goals. The first step entails studying sub-elements (ie, individual, place, time, movement, action, operation), not to breakdown and reassemble them but rather to understand their natural rules, motivations, necessities, and reasons. Security apparatuses aim to establish, fabricate, and organise favourable milieu in which individuals and groups with varied interests can produce and react to events. In such milieu, sub-elements move freely, according to their own motives. In this new type of governmentality, the norm is no longer prescriptive, as it would be with discipline, and neither does government define norms. Rather, its role is to study the conditions in which particular behaviours occur, then promote such conditions to harness the favourable milieu that induces the most desirable behaviour.

In contrast with the discipline that characterises *raison d'Etat*, the source of action by the population under liberalism is the desire for and pursuit of individual interests. The milieu the government creates should enable the interaction of individual interests, through various relationships and connections, to produce what is in the general interest. The interface of rulers and the populace thus no longer involves obedience but rather is marked by freedom. This new art of government, based on the free movement and play of interests within a milieu structured by clear, well-known, long-lasting rules of the game, constitutes the essence of liberalism. Liberalism introduces a new governmental rationality that governs people's conduct through their interests and calculations, rather than directly enforcing it. The main question for the state is not how to govern more (ie, regulate all conducts through disciplinary procedures) but rather how to govern less (ie, account for the costs of regulation relative to its gains for society). The ultimate goal is to find an optimal illegality rate and reach goals while balancing the costs of enforcement with the costs of nonconformity. Differences in conduct and unplanned behaviours are not issues to be corrected by appropriate training or dressage. Compared with sovereignty and *raison d'Etat*, which

rely, respectively, on laws and rules as central techniques to achieve domination and obedience, liberalism uses regulation to act indirectly on the population by favouring a milieu that is prone to free movement.

3.2. *Renewed concept of power at the heart of governmentality*

Archetypes of government primarily correspond to different means to exercise power. Foucault defines power as a dense net of immanent relations, coming from below, that spreads everywhere, contrary to the classic definition of power as hierarchical, top-down, oppressive, and possessed by a sovereign ruler (Hobbes, 1651; Law, 1991). Thus, governmentality pertains not to theorising about conceptual entities (eg, the State) but rather to studying the immanent rationality of micro-powers. Rather than asking "who governs?" Foucault raises the question of "how power is exercised" (see Hekkala and Urquardt, 2013).

Foucault (1977) establishes that power exists only in action and relationships and predicts a circular relationship of power and knowledge: Power produces knowledge, and knowledge produces power (Foucault, 1977). Since his early writings, Foucault rejected pseudo-evidence from established knowledge, in an attempt to question regimes of truth. He explained how the production of official discourses could be controlled, selected, classified, and distributed by various actors and social institutions, which he labelled *instances de véridiction* (veridiction authorities). By analysing relationships among truth, knowledge, and the social institutions and practices in which they emerge (Willcocks, 2004), Foucault highlighted the power effect of the discourses that were diffused by social institutions and presented as truths. For example, madness, prisons, the body, life, death, and human beings progressively became objects of observation. As scientifically presented discourses were developed by social institutions, they produced insidious forms of social control.

The evolution of government archetypes thus can be grasped as an evolution of power relations (*power–knowledge relations*), implying a shift in the *instances de véridiction*. Each government archetype is associated with the emergence of new *instances de véridiction* (Foucault, 1977), as conditions and effects simultaneously. For example, the shift from *raison d'Etat* to a liberal mode of government was driven by the emergence of economics as a specific field of knowledge that, despite its importance for the state's power, could not be governed by the state. Economic processes could not be regulated or disciplined efficiently by an almighty State. As a separate field, outside the state government, economics thus developed its own regime of truth (eg, the market) that revealed a truth about prices and value. In *raison d'Etat*, the market was an object of jurisdiction (governed and constrained by disciplinary rules, such as minimal or maximal prices); for the liberal archetype, it evolved from an object of jurisdiction to an *instance de véridiction*. Truth could no longer be established solely by the state according to its own interests. Instead, the market as an *instance de véridiction* reflects expressions of the interests of various individual actors involved in economic processes (eg, people, corporations), who engage in active self-government, rather than simply being objects of disciplinary practices by the state, and seek to maximise profits while minimising losses.

This new governmentality model was inextricably linked to a renewed conception of the population. A liberal mode implies that governing is different from reigning, ruling, or commanding (Nohr, 2012) and necessarily implies freedom (Foucault, 2007, 2008). That is, the sovereignty and *raison d'état* models considered the population a passive object to be acted on; the liberal model started recognising people as actors responsible for their own behaviour, for which they should be held accountable, and which thus should be measured. In this model, the state aims to determine and encourage local conducts that benefit the whole. Liberalism is not a transfer of power from the state to non-state actors but rather an expression of a changing logic of the rationality of government (defined as a type of power), in which civil society is redefined from a passive object that government acts upon to an entity that is both an object and the subject of government. Table 1 synthetises and compares the main dimensions of the sovereignty, *raison d'Etat*, and liberal government archetypes.

4. Target domain: IT governance

In this section, we provide an overview of the target domain, IT governance, based on Weill and Ross's (2005) theoretical frame of reference. Governance involves systematically determining, within a given scope, who makes each type of decision (decision rights), who provides input (input rights), and how people (or groups) will be held accountable for their role (accountability) (Clegg et al., 2002). Applied to the IT field, governance can specify "the framework for decision rights and accountabilities to encourage desirable behaviour in the use of IT" (Weill, 2004, p. 3), thereby enabling organisations to support their strategies and institutionalise good practices. The specific term "IT governance" did not appear before the late 1990s, when Brown (1997) and Sambamurthy and Zmud (1999) started referring to an IT governance framework. Integral to corporate governance, IT governance reflects broader governance principles, such that it is possible to coordinate decision-making processes across the enterprise (Weill & Ross, 2005).

Substantial research deals with IT governance forms, distinguishing centralised and decentralised models (Sambamurthy & Zmud, 1999) or predicting a continuum and scalar classification (Olson & Chervany, 1980) that allows for multiple degrees of centralisation in structures (Brown & Grant, 2005). Studying the IT governance of more than 250 companies in 23 countries, Weill and Ross (2004) identify an array of IT governance arrangements along the continuum and propose that companies allocate decision rights related to five main IT topics (IT investment, architecture, principles, application needs, and infrastructure) to six main archetypes (Weill, 2004; Weill & Ross, 2005): Business or IT Monarchy, Federal, Duopoly, Feudal, or Anarchy. Each archetype is characterised by specific decision-making structures, as well as allocations of decision or input rights to corporate, Business Unit, or functional managers (or some combination). These allocations might involve corporate-level executives (C-level executives), corporate or Business Unit IT managers, and Business Unit leaders or process owners (Weill & Ross, 2005). For example, Monarchy (both Business and IT), Federal, and Duopoly archetypes feature decision-making structures that grant representation and authority to produce enterprise-wide synergies (Weill, 2004; Weill & Ross, 2005), but the Feudal archetype relies on local decision-making structures, and Anarchies require no decision-making structures. These archetypes are classified, according to their degree of centralisation versus decentralisation, into three primary modes of IT governance (Sambamurthy & Zmud, 1999) (see Table 4, Section 6.1): centralised archetypes (Business Monarchy and IT Monarchy), hybrid archetypes (Federal and IT duopoly), and decentralised archetypes (Feudal and Anarchy).

5. Analogical reasoning process

Hesse (1966) identifies two sorts of dyadic relations: horizontal (ie, relations of identity or difference between the properties of the two domains) and vertical (ie, causal relations between the properties of the same domain). We analyse the horizontal relations of both source and target domains first, to develop positive analogies on the basis of their common properties and negative analogies that reflect their differences (Table 2). We then analyse the vertical relations within the source model to elaborate our analogy based on similarities, despite the differences between domains (Table 2) (Hesse, 1966).

5.1. *Analysis of horizontal relations: similar properties and differences*

5.1.1. *Positive analogies*

Both government of the people (in Foucault's governmentality) and IT governance can be defined as practices. Foucault (2007, 2008) does not consider government a transcendental power, or even as the concrete expression of a conceptual entity like "the State", but rather describes it as an immanent practice. Government is included in and part of society, acting on and emanating from that society. In a similar manner, IT governance is not a theory but rather a practice (Huang et al., 2010) that gets put into action daily, through official rules, best practices, decision-making, and implementation (Weill & Ross, 2004). Both IT governance and people governance

Table 2. Positive and negative analogies between source and target domains.

		Source domain: Foucault's governmentality	Target domain: IT governance
Positive analogies	*Nature*	A practice to conduct human conducts through a ruling framework relayed by a nest of micro-powers	A practice to encourage desirable human behaviour through a ruling framework relayed by a nest of micro-powers
	Objective	To produce a given behaviour by conducting the conducts, so that behaviours are best suited to fulfil the government's policies	To produce desirable behaviour in the use of IT by employees and address desired outcomes
	Means as a set of organised practices	Laws, rules, techniques, prescriptions, procedures, security apparatuses, and regulations	Rules, decision rights and accountability, ruling instances, decision-making structures, and governance techniques and mechanisms (alignment processes and formal communications)
	Method of investigation	Empirical observations and exploration of the exercise of power in concrete cases and institutions	In-depth case studies and empirical observations of real practices in existing organisations
	Outcome	Produced archetypes, which usually coexist in reality and emerge according to environmental changes	Produced archetypes, which usually coexist in reality and emerge according to environmental changes
Negative analogies	*Application field*	Governance of people and places, exercised in a given milieu of life	IT-related decisions in organisations with circumscribed goals, exercised in a given milieu of IT environment
	Time scale	Centuries	Years or decades
	Spatial frame	Country	Organisation
	Object of power relations	Power exercised with a potentially unlimited (but practically limited) power	Power exercised with limited power (only the work part of an employee's life)
	Subject of power	Political rulers	Company executives

thus can be defined similarly, as the concrete way a ruling power gets exercised.

The function of these practices, in both cases, is to produce a given behaviour. The objective of people governance is to shape, guide, and direct individual and group behaviours and actions in specific directions; the aim of IT governance is to encourage desirable behaviours in employees' IT use. The production of these behaviours is ensured by organised practices, including a specific framework that defines techniques to condition and model appropriate comportment. Thus laws, procedures, security apparatuses, and regulations – which constitute explicit or implicit rules for authorising, banning, or promoting conducts – define and assign well-defined roles to each party and governing agency, through ruling instances (eg, government, administration, justice, regulatory bodies; Foucault, 1977, 2007, 2008). In IT governance, rules, decision rights, and accountabilities also specify the rights and roles of each party and governing agency, as well as ruling instances and decision-making structures (eg, IT strategy committee, IT steering committee, IT investment committee) and governance techniques (alignment processes, formal communications) (Weill & Ross, 2004).

Both domains have been investigated with the underlying objective of deriving archetypes, through empirical observations and real case investigations. Foucault (2007, 2008) explored how power has been exercised concretely over the course of (mainly Western) history, then grouped multiple historical situations into three main archetypes. Similarly, IT governance arrangements have been specified around six main archetypes through an in-depth analysis of the governance practices of real companies (Weill & Ross, 2004). The resulting archetypes also depict an evolving reality. They can coexist and emerge in response to broader environmental changes; for example, Foucault states clearly that his three main government archetypes are never pure and holistic but always mixed, so that disciplinary mechanisms might be found in liberal regimes for example. Despite the chronological presentation of the three archetypes (Foucault, 2007, 2008), this historical order is not necessary. Similarly, in the IT governance setting, Weill (2004) anticipates that different archetypes coexist in a firm and thus lists IT decisions for which different archetypes might be used in the same organisation. In both domains, the archetypes are not intended to embrace the entire social reality in a fixed manner.

5.1.2. *Negative analogies*

Along with these similarities, some differences separate the application fields of the domains. First, the modes of European government studied by Foucault (2007, 2008) involve governance over people and places, whereas IT governance involves IT-related decisions within organisations, which have far more circumscribed goals. As Foucault recognised, his governmentality framework is generalisable though; it has been adapted to various organisations and symbolises power relationships as they appear in people's everyday lives (Willcocks, 2006). Second, the space and time frames in the two domains differ – one spanning centuries at a country scale, and the other spanning decades at a corporate scale. Yet governmentality is an interpretative framework and "point of view", such that this means to make sense of micro-powers is not confined to any domain but remains valid at various scales and for various sectors, including organisations (Foucault, 2008).

Third, other differences pertain to the object on which power gets exercised. In the source domain, it is the bodies themselves (Foucault, 1977) that become the object of power, placed under the control of the ruler, in their relationship with a broad milieu (ie, territory, culture, or economic process). In the target domain, the object of power turns to the individual relationships with IT Moreover, the power of corporate IT rulers can be exercised only within well-defined limits, as established by a working contract. But the shift in IT towards greater pervasiveness, disintermediation, and invisibility implies that its role is more cardinal in various milieu and in human agency (Crowston et al., 2010), far beyond the organisational realm. It affects the way people work, collaborate, communicate, and live (Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013).

Fourth, the subject of power differs across domains. In the Foucauldian framework, the subject of power is a political ruler, whether in the form of a prince (sovereignty), the state (*raison d'Etat*, liberalism), or regulatory bodies (liberalism). In the IT governance framework, the ruler ultimately is the board, which usually delegates ruling power to the CEO, who may delegate it further, such as to a CIO (IT Monarchy) or business executives (Business Monarchy). However, in both domains, the ruler exercises power to maximise and sustain interests that extend beyond its own person or interests. Furthermore, rulers are consistently embedded in a nest of micro-powers, such that many entities (eg, regulatory bodies vs. committees, IT departments, experts) rely on but also feed the power of the ruler. Table 2 synthetises these positive and negative analogies between the source and target domains.

Despite the known and accepted differences between the source and target domains (negative analogies), the horizontal relations show that both domains embrace relevant similarities in their observable properties (positive analogies) that enable us to elaborate an analogical argument.

5.2. *Analysis of vertical relations: causal relations and the induced analogical argument*

The analogical argument presupposes both causal relations among the properties of a single domain (vertical relations) and similarities across domains (horizontal relations) (Gentner, 1983; Hesse, 1966). Following Hesse's (1966) analogical reasoning method, we identify vertical relations in the source domain as well as similarities across domains (Table 3), where the causal relations among the properties of the source domain relate to the transition from one mode of government to another.

In particular, causal relations explain the roots of the transition towards a new, liberal mode of government, as a result of progressive, external changes at the societal level (eg, economic, political, legal, penal). The changes cause existing power–knowledge structures and *instances de véridiction* to become outdated, thereby leading to a renewed nest of power–knowledge relationships. Notably, the liberal archetype arose in response to the emergence of the market as a domain that the state could not manage and control (Foucault, 2007, 2008) and on which the *raison d'Etat* could not act. Individual initiatives increasingly drove the economy, so that the tight rules and control over the market imposed by the state produced undesirable side effects that got circumvented. This process led to the emergence of a new *instance de véridiction* (ie, the market), engaged in new power–knowledge relations (eg, measurable prices, value as truth). Those new relations prompted various categories of people to seek actively to pursue their self-interests, through their own self-government (ie, freedom), in ways that would maximise their profits, rather than remaining solely objects of disciplinary practices by the state. Using the example of food scarcity in the seventeenth and eighteenth centuries, Foucault (2007) explained how tight rules on the market imposed by the state (eg, price controls, interdiction to store seeds) produced negative consequences (eg, discouraging farmers from producing, shadow economies, and parallel markets in which farmers sold some grain at fixed prices and the rest on the black market at higher prices) and ultimately increased food scarcity and famine. In response, a new set of edicts established freedom in the circulation and trade of wheat. Rulers let the market evolve freely, through the expressions of each individual actor's interests, which then became conceived of as a motor of economic life and national wealth. (Individual actors behaved in the market according to calculations of their own interests, by considering costs versus benefits.) This example shows how this new governmentality model was inextricably linked to a renewed conception of the population, in which they were responsible for their own behaviour, which in turn needed to be measured. In this model, the state seeks to determine and encourage local conduct to benefit the whole.

Similarly, the trigger for an evolution towards a liberal model of IT governance, analogous to that in the governmentality archetypes, is the evolution of power relations in IT governance. The target model

Table 3. Presentation of our analogical argument.

< Causal relations >	***Trigger***: External changes (economic, political, legal) expressed in new conduct	***Trigger***: External changes (social, organisational, technological landscape) expressed in new behaviours and usages
	Principle: Individual initiative drives the economy	***Principle***: Individual initiative in the organisation drives IT-related choices
	Overriding existing power–knowledge structure and instances de véridiction: Tight rules on the market, imposed by the state produce, undesirable side effects (eg, food scarcity) that get circumvented (eg, shadow economy), making existing power–knowledge structures and *instances de véridiction* outdated	***Overriding existing power–knowledge structure and instances de véridiction***: Tight rules on IT usage, imposed by the company, produce undesirable side effects (eg, productivity losses) that get circumvented (eg, shadow IT), making existing power–knowledge structures and *instances de véridiction* outdated
	Emergence of a new nest of power–knowledge relations, immanent to society: Power–knowledge relations translate the interests of various categories of people, who, through in their own self-government (ie, freedom), actively seek to maximise profits (driven by their own interest); they behave in the market according to calculations of their own interest, by considering costs versus benefits	***Emergence of a new nest of power–knowledge relations, immanent to the organisation***: New power–knowledge relations reflect the individual interests of each user (ie, perceived convenience), expressed in their free choice and use of IT; employees behave, choose, and use IT according to perceived convenience, such that they balance their costs (eg, learning time, complexity of use) versus benefits (eg, utility).
	Recognition of a new instance de véridiction: The market emerges as an *instance de veridiction*, which offers a measureable truth about prices when it runs freely	***Recognition of a new instance de véridiction***: IT usage in the company emerges as an *instance de veridiction* in the sense that the sum of all individual uses of an IT tool establishes the value of that tool
	Corollary: People are accountable for their actions on the market, which should be measurable	***Corollary***: People are accountable for their use of IT tools, which should be measurable
	Transition to a new mode of government: Emergence of a liberal mode of government	***Transition to a new mode of IT governance***: Emergence of a liberal mode of IT governance whose characteristics remain to be theorised and specified
	< Similarity relations >	

(IT governance) is characterised by progressive external changes in the social, organisational, and technological landscape, expressed in new IT usages. IT are embedded in wider, constantly evolving ecosystems, rendering their use increasingly open, pliable, transfigurable, and interactive (Kallinikos, Aaltonen, & Marton, 2013; Schmitz et al., 2016), which makes their management and control more complex. As conceptualised by IS research, more flexible (Leonardi, 2011) and malleable IT uses (Schmitz et al., 2016), driven by the individual interests of each user (eg, perceived convenience, as exemplified by the Clinton case), emerge and develop rapidly in organisations. These new practices not only foreground the role of humans in shaping their own uses of IT and expected outcomes (Leonardi, 2011) but also challenge existing IT governance models, because they leave current power–knowledge structures and *instances de véridiction* outdated. Existing IT governance models are not totally appropriate for framing and ruling on employee-driven, unexpected, flexible, and malleable IT uses, nor can they effectively control them. Impositions of specific IT to govern work, tighten rules, and ensure control mechanisms can generate negative consequences. In particular, they may create discrepancies between formal procedures and situational actions (Suchman, 1987), such as misfits between implemented IT and real needs (Lairet, Rowe, & Geffroy, 2016; Strong & Volkoff, 2010). In contexts characterised by a confluence of widely available IT and BYOD trends (Schmitz et al., 2016), strictly framing IT usage by rules and control mechanisms (eg, preventing access to non-in-house tools or networks, imposing specific work methods with prescribed IT and rules) increasingly appears counterproductive and results in undesirable side effects, including potential productivity losses and poor organisational performance (Strong & Volkoff, 2010). Tight rules and controls also evoke practical deviations and improvisations (Suchman, 1987), circumventions of prescribed IT, deviant uses through the development of shadow IT (Behrens, 2009; Rentrop & Zimmermann, 2012), and unauthorised uses of personal resources. Such challenges then lead to the emergence of new power–knowledge relations, in which individual interest, expressed in individual perceptions of convenience rather than compliance, functions as the main driver of IT use. These power–knowledge relations take into account the individual interest of each user, expressed through free choices and uses of IT, which reflects the way each person balances costs (eg, learning time, usage complexity) against benefits (eg, utility) (Davis, 1989). Thus, IT usage emerges as an *instance de véridiction*, and this shift suggests that organisations, rather than constraining IT users, should encourage them to be responsible of their choices and room to manoeuvre and harness bottom-up technological changes manifested in new IT uses. The users should be held accountable for these uses, and those should be measurable. Such changes would herald the emergence of a *liberal model of IT governance* (Table 3).

In proposing this model, we seek to make sense of evolution in both source and target domains (Hesse, 1966), where archetypes usually emerge in response to broader environmental changes. Transition processes take place across archetypes, resulting from progressive, external changes (eg, economic, political, social, technological evolutions), which ultimately override the existing power–knowledge structure, causing it to become outdated (especially existing *instances de véridiction*), and leading to renewed power–knowledge relationships. Leveraging the similarities in the properties of both domains (Hesse, 1966) and relational commonalties between them (Gentner, 1983, 1989), we inductively postulate the emergence of a liberal model of IT governance. In accordance with Hesse's (1966) evaluation criteria, these acknowledged similarities between domains, despite their differences, make it plausible that the emergence of a liberal model of government (in the source domain) holds in the target domain (IT governance), in the form of an emerging *liberal model of IT governance* (Table 3).

The analogy with Foucault's governmentality framework thus provides a way to rethink IT governance and suggests the emergence of a *liberal model of IT governance* that remains to be specified. A *liberal model of IT governance* cannot simply consist of letting anyone act on one's own, without any frame or monitoring (which would imply anarchy). Some key characteristics must be fulfilled to implement a truly *liberal* model (Section 6.2).

6. Rethinking IT governance: towards a liberal model of IT governance

We extrapolate our analogical reasoning to identify the characteristics of a liberal model of IT governance.

6.1. *IT governance models interpreted through Foucauldian governmentality*

We first suggest that IT strategies, implementations, and uses in organisations are situated in a given mode of governmentality, characterised by specific dimensions and premised in specific regimes of truth, though we also acknowledge, as Foucault did, that there is no pure mode of government – only prevailing modes that combine several specific dimensions (Table 4). We consider *stylised IT governance models* along specific dimensions and specify their functions (objectives), power structures, and

Table 4. Governmentality analysis of current IT governance archetypes.

		Centralised		Hybrid		Decentralised		
		Business monarchy	IT monarchy	Federal	IT duopoly	Feudal	Anarchy	Liberal mode of IT governance
Function (objective)	*Ultimate objective*	To optimise the global IT value (for the whole firm); to fulfil top-down IT strategy and enterprise-wide perspectives through the constitution of a dominant position		To optimise both global and local IT value		To optimise IT value for a local unit	No defined objective	To regulate behaviours and IT uses
	Educational stake	To produce domination or obedience		To produce obedience		To produce empowerment (so local people make appropriate decisions)	No defined educational stake	To act on organisational actors, as subjects of responsibility, autonomy, and choice, by shaping and using their freedom
Power structures	*Nature of power*	Classic vision of power, possessed by corporate executives, vested with power and authority for key IT decisions and activities		Classic vision of power, possessed by corporate or divisional IT		Classic vision of power, possessed by line managers, BU or PO, though more decentralised and shared	Renewed vision of power as immanent and present at any organisational level, but unregulated	Renewed vision of power as immanent and present at any organisational level
	Target of power	Ensemble of employees seen as members of the whole firm		Multiplicity of employees representing diverse entities		Ensemble of employees as members of a local unit	Employee or groups of employees (shadow IT)	One (or some) employee(s)
	Space of the exercise of power	Enterprise IT as a whole territory managed from the top		Enterprise IT as a ramified territory divided into several functional units		Local IT, as a whole territory managed by a local head	Initially local space of action but with potentially wider consequences	Initially local space of action but with potentially wider consequences
	Underlying principle	Unicity of decision, plurality of execution		Plurality of decision, plurality of execution		Unicity of decision, unicity of execution (ruler is also the executor)	Individual IT choices motivated by individual interests	Enmeshment of personal projects, ambitions, and free IT choices of individual actors with those of organisation authorities
	Role of population	Passive users (objects of IT governance practices)		Alternatively passive and active users (both objects and subjects of IT governance practices)		Alternatively passive and active users (both objects and subjects of IT governance practices)	Unrestrained active users (IT users are not just recipients of and indirect participants in organisational, IT-driven change)	Active users (IT users are not just recipients of and indirect participants in organisational, IT-driven change), motivated by their interest (perceived convenience)
	Regime of truth and instances de véridiction (examples)	CEO and CIO as *instances de véridiction* whose power stems from dominant positions or specialised IT knowledge		CIOs as *instances de véridiction* whose power stems from dominant position or specialised IT knowledge		Local unit heads as *instances de véridiction* whose power stems from positions and mastery of specific knowledge	Void – Chaos?	IT usages (of individuals)
Techniques	*Main mechanism of government*	Rules and prescriptions are decided centrally (IT or business executives), then enforced locally. Institutionalisation of IT policies and procedures in a coercive manner		Rules and prescriptions are negotiated and compromised between IT and business executives, then enforced locally. Normalisation of processes that can standardise behaviours and IT uses		The local head is the sole master	No mechanisms of government	Empowerment and development of individual/local accountabilities
	Meaning of governing	Establish authority and commanding		Shared ruling and commanding		Ruling at the local level	Void	Regulating practices and conducts, making people accountable for their IT uses and measuring them
	Interface of the targeted individual's conduct	Domination and obedience		Obedience and coordination		Delegation ("conferral": granting local power)	Freedom? Individual interest? Individualism?	Regulated freedom
	Use of norms	Disciplinary normalisation: A norm is the result of a standardisation process driven and imposed by executives		A norm is the result of a trade-off (eg, shared service) between parties		A norm emerges at the local level with potential norm conflicts at the enterprise-wide level	Void – no norms	Norms emerge as a result of shared behavioural regularities as similar choices are made and regulated over time
Prevailing governmentality mode		↓ **Prevailing Sovereignty Mindset** with some characteristics of the *raison d'Etat* mindset		↓ **Prevailing *Raison d'Etat* Mindset** with some remaining characteristics of the sovereignty mindset		↓ **Prevailing Sovereignty Mindset** with emerging characteristics of the liberal mindset	↓ **Premises of Liberal Mindset** Shift to a renewed model of IT governance.	↓ **Liberal Mindset**

techniques, according to a Foucauldian view of governmentality.

All the stylised IT governance models mix various characteristics from governmentality archetypes (Table 4). However, sovereignty and *raison d'Etat* seem mainly represented in existing governance archetypes; the few liberal characteristics appear mainly as aspects of a decentralised mode, such as in anarchic situations, announcing the emergence of a liberal model of IT governance.

With a sovereignty mindset, IT is the sovereign territory of a centralised authority and decision-making structure, generally represented by corporate executives or CIOs (eg, Business Monarchy, IT Monarchy). The main goal, achieved through a dominant corporate position, is to fulfil top-down IT strategy and enterprise-wide goals, using techniques and laws that institutionalise IT policies and procedures, generally through coercive mechanisms.

With a *raison d'Etat* mindset, IT instead is a circumscribed territory, governed by the ramifications for organisational representatives (eg, corporate, Business Unit, functional, or IT managers) that are organised hierarchically and functionally. This mode relies on a more or less centralised or hybrid decision-making structure and normalising processes that work to standardise behaviours and IT uses through diverse disciplining techniques (eg, rules, urbanisation of IS, enterprise architecture, IT architecture, organisational committees, alignment processes, formal communications).

The liberal mindset instead extends autonomy and the associated logics of empowerment, while announcing the emergence of a renewed model of IT governance. Just as Foucault perceived shifts in the modes of government, by observing behaviours and analysing the philosophy produced during particular periods, we may trace the emergence of a renewed model of IT governance in recent decades by considering both observed practices and IS theories. For example, the resurgence of autonomy and power that can be exerted by each organisational actor in IT-related decisions has been conceptualised according to various perspectives (eg, bricolage, Ciborra, 1994; adaptive structuration theory, Desanctis & Poole, 1994; Schmitz et al., 2016; emergent and opportunity-based changes, Orlikowski & Hofman, 1997; creative autonomy and appropriation tactics, de Certeau, 1980).

Such uses can be grasped through a Foucauldian conception of power, as immanent and exercised throughout the social body, operating at micro-levels through power–knowledge relations (Foucault, 1977). For example, IT departments have long exerted expertise power (Hekkala and Urquardt, 2013), based on their mastery of specific knowledge (Silva & Backhouse, 2003), but *reversed adoption logics* (Leclercq-Vandelannoitte, 2015a, 2015b) also are changing the game. A new dynamic for IT-based innovation is emerging in the workplace, as non-technical users gain power to adopt and adapt IT to their needs, through the confluence of widely available, malleable IT and BYOD (Schmitz et al., 2016). Employees are not just recipients of and indirect participants in organisational, IT-driven change; they can initiate such change, through their choice to use their own technology for professional purposes (Harris et al., 2011, 2012, 2015b; Leclercq-Vandelannoitte, 2015a) or to develop deviant, unprescribed (Cunha, 2013), noncanonical practices, and nonconformities.

This vision of power further implies that people are active in their own self-government. The recognition of this active role implies the need for internal regulation of conducts (rather than ruling through top-down laws or decrees), such that people must be willingly complicit in their own governance and become governable from a distance (Clegg et al., 2002). Liberal governmentality offers indirect techniques for leading and controlling individuals without being responsible for them, such as through technologies of responsibilisation. Individuals are responsible and accountable for their own behaviours, which also need to be carefully evaluated and measured; they are encouraged to perceive social risks as outside the state's responsibility but within their own individual responsibility domain, such that the risk becomes a problem of self-care (Foucault, 2007, 2008).

In turn, the mechanisms of a *liberal model of IT governance* stem from the combination of strategies involving organisational and IT governance (in a broad sense) and self-governance by those who become subjects of the organisational governance (Clegg et al., 2002). The goal of *liberal model of IT governance* is to act upon actors, considered as subjects of responsibility, autonomy, and choice, by shaping and using their freedom (Gay, 2000).

6.2. *Characteristics of a liberal model of IT governance*

6.2.1. *IT usage as a new instance de véridiction*

A liberal model of IT governance moves past the question of the best suited IT procedures or arrangements; it seeks to identify new *instances de véridiction* and regimes of truth that sustain the IT governance edifice and enable the organisation to benefit from the best local, desirable behaviours (Weill & Ross, 2004). Each mode of government possesses specific *instances de véridiction*, and the shift from one model to another necessarily implies the emergence of new *instances de véridiction* that progressively delegitimise the previous ones.

The use of IT in modern organisations should not only – and perhaps not even mainly – be enforced by rules, procedures, or discipline resulting from the decisions of CEOs and CIOs, as in classic models of IT governance inscribed in sovereignty or *raison d'Etat* models that would consider IT usage as an object of jurisdiction, to be disciplined, framed, normalised, controlled, and constrained through governance mechanisms, rules, and processes (Table 4). In IS settings, scholars have long considered IT usage as a behaviour that may escape such discipline, through resistance (Markus, 1983), various levels of acceptance (Davis, 1989), or users' autonomy (Orlikowski, 1992, 2000), as reflected in counterpractices (Ciborra, 1994), appropriation moves (Desanctis & Poole, 1994), and unprescribed, noncanonical IT practices at work (Cunha, 2013). Extending theses logics, as IT has become more pervasive, disintermediated, and invisible (Bharadwaj et al., 2013), individual initiatives and spontaneous uses of consumer IT have developed rapidly in organisations. Ultimately, IT usage paradoxically has become both increasingly essential for work and more difficult to control.

Thus, the observation of IT uses in organisations, coupled with an analysis of emerging trends in IS research, leads us to consider a shift in IT usage, from an object of jurisdiction to a new *instance de véridiction* that provides the main source and potential driver of enterprise IT. In turn, we identify some requirements for an IT governance model grounded in IT usage as an *instance de veridiction*.

6.2.2. *Principles*

In the liberal governmentality model, the market is framed and promoted by procedures that enable it to serve its role as an *instance de véridiction*. Similarly, IT usage must be asserted in a certain manner, through public, well-defined principles, analogously derived from liberal governmentality: convenience, free choice, individual accountability, and measurability.

- ***Convenience***. In line with liberal governmentality's principle of individual interest, the use of IT should enable organisational actors to complete their business tasks, according to their interests, in a convenient way. Such uses create the opportunity for IT functions to improve users' efficiency, productivity, and agility through a better fulfilment of their needs. Convenience and the resulting efficiency stem from the added value of using specific IT applications and from users' ability to produce such added value; the organisation as a whole benefits from that value. Prior IS research on bricolage affirms that users assemble various tools to reach their own business goals, and their attitude towards technology often implies the choice of a tool to get the job done (Harris et al., 2012).
- ***Freely chosen usage***. According to liberal governmentality's principle of freedom, IT usage must be freely chosen, not constrained by specific rules or policies. From a Foucauldian perspective, freedom is not a natural state. It is constructed and produced by liberal governmentality. A liberal IT governance model constructs this freedom of use, so it trains actors not to make use of specific IT applications or devices but rather to exercise their own freedom of choice to select applications (internal or SaaS) and devices (enterprise-owned or their own) that are suitable, convenient, and efficient for fulfilling their business tasks.
- ***Individually accountable usage.*** Analogous to liberal governmentality's principle of responsibility, organisational actors must be held accountable for their IT use, assume consequences, and pay the potential costs. In a liberal governmentality perspective, the counterpart of freedom is accountability. Freedom of use leads to optimal choices at the employee or organisational unit level only if employees are held responsible for negative outcomes such as security threats, data losses, or service failures and if such responsibility is measured.
- ***Measured usage.*** Similar to market transactions, to support the achievement of accountability, IT usage must be objectively monitored and measured. The IT department can monitor the use of IT (both applications, to determine uses of internal applications, and networks, to trace domain names and visited websites to detect interactions with SaaS providers or new types of devices connecting to the enterprise network). The finance department can monitor deals performed by employees or Business Units to buy SaaS or devices or trace payments to external IT providers. Combining these data would enable the organisation to gain a true view of IT usage, both internally and through external SaaS sources (Harris et al., 2012). Technical solutions like CASB (Cloud Access Security Broker, Fernandez, Yoshioka, & Washizaki, 2015) already offer the capacity to track such IT uses (including shadow IT) by monitoring network flows.

6.2.3. *Space for the exercise of power*

Previously, IT governance functioned to address IT decision-making rights, input rights, and accountability, but a Foucauldian governmentality approach suggests that a liberal model of IT governance has a wider scope, focused on establishing a *favourable milieu* that can enable a loop of causes and effects (Foucault, 2007, 2008). Therefore, IT

governance should expand to the usage of IT and the value generated, as well as to the people and material artefacts (eg, applications, devices) involved in these processes, to take every IT use into consideration, including those that are part of the so-called shadow IT (Behrens, 2009; Rentrop & Zimmermann, 2012). Scholars recently have called for considerations of strategic IT alignment as a result of choices by individuals, rather than organisation-wide decisions (Coltman, Tallon, Sharma, & Queiroz, 2015). To that end, a liberal model of IT governance can build a framework to influence conduct within this milieu, driven by ***convenience*** and the search for ***efficiency***, which in turn represent shifts in mindset compared with a classic, disciplinary IT governance framework.

6.2.4. *Role of government*

By addressing these principles, a liberal IT governance model aims at governing less, such that interactive IT uses at the individual level may increase the efficiency of the whole company (similar to how an interaction of individual interests leads to the common good in liberal governance). A liberal model of IT governance suggests that each user or organisational entity is free to choose the most suitable tool(s) to accomplish its business goals, by balancing the *intrinsic performance* (or

Vignette 1: Liberal governance principles as illustrated by the Clinton case

Convenience principle. Hillary Clinton used her personal smartphone and server because it was the most convenient and efficient solution for her: "I used one email for convenience" (Jaffe & Merica, 2015). In a liberal model, the White House IT department should have acknowledged this convenience need, due to the highly demanding tasks that the Secretary of State performs. Clinton preferred using one device instead of many, which made it easier for her to manage various missions.

Freely chosen usage principle. As reported, Secretary Clinton "publicly shared the challenge she faced with her personal device and email. She addressed the question of whether her use of BYOD was outside the guidelines of department policy. She feels it wasn't. She then explored an alternative, proposing that she could carry a second device, perhaps one issued by a government IT department" (Mirza, 2015). In a liberal model, the IT department would allow all users to choose their own tools and IT uses. Clear policies can help prevent misinterpretations and conflicts. In this case, the White House IT department should have clearly indicated to Clinton that she could use her personal phones and email, while also detailing the clearly associated duties that she took on through this usage.

Individually accountable usage principle. After the classified information was discovered on her private email account, Secretary Clinton explained: "We are all accountable to the American people to get the facts right, and I will do my part" (Delreal, 2015). In a liberal model, as revealed by the Clinton email imbroglio and its impact on her campaign, users need to be held accountable for their IT usages. In such a liberal model, the White House IT department might have developed a list of every IT tool used by each US government employee. This list could have included the security or trust level associated with each tool; those with poor security may have been banned from use, unless the user commits to enhancing the security level (eg, by storing only encrypted information), at the cost of an obvious trade-off with reduced convenience.

Measured usage principle. Clinton's email usage initially was not appreciated, measured, or monitored; rather, it was discovered by accident, during investigations into the 2012 terrorist attack in Benghazi, Libya. Controversy emerged not because Clinton used her private server but because those uses gave her the option to delete work-related emails, which would not have been possible with federal servers. The investigation revealed that "More than 30,000 emails were deleted 'because they were personal and private about matters that I believed were within the scope of my personal privacy', Clinton told reporters in March of 2015, as the controversy around her private emails was growing. … However, after a year-long investigation, the FBI recovered more than 17,000 emails that had been deleted, and many of them were work-related", which raised questions about "the sequence of events leading up to the destruction of Secretary Clinton's emails" (Levine, 2016). In a liberal model, because the freely chosen usage principle inherently involves accountability, monitoring and measurability are central. In the Clinton case, the White House IT department should have asked Clinton to allow monitoring of her usage of non-official IT resources, such as by requesting that she systematically transfer all work-related emails to federal servers (eg, by cc-ing her official address in all emails).

Space for the exercise of power. Secretary Clinton considered her personal devices and email outside of the jurisdiction of the White House IT department. However, in a liberal model, the space for the exercise of IT governance exceeds the physical frontiers of the organisation; all work-related habits and tools are involved. The White House IT department should have considered all professional uses exhibited by Secretary Clinton as under its responsibility and sought to establish the best *milieu* to help Clinton recognise the effects of her choices and act accordingly (eg, by disclosing the IT usages of everyone within the organisation and highlighting untrustworthy uses).

Role of government. The White House IT department did not take a very active role in the Clinton email affair. Its main function seemed limited to providing IT tools to users and responding to questions about their usage. But in a liberal model, the IT department not only provides tools but also educates users about their freedom to choose. For example, it could provide comparisons of various consumer IT, according to different criteria (eg, cost, security level, features, level of support). It also needs to explain to users all the duties be associated with their free choices.

Some similar principles have been promoted by the US government following the Clinton email affair. Late in 2014, the Federal Records Act was amended to require emails issued by US government officials from personal accounts to be transferred to government servers within 20 days. This requirement applies the principle of ***freely chosen usage*** to US officials, who might use an unofficial email account (assuming it is secure), but also the ***accountability*** principle, because the responsibility of archiving emails gets transferred to them. Secretary Clinton's successor, John Kerry, chose to rely primarily on his official state.gov email account, perhaps reflecting his ultimate assessment that it would be more *convenient* for him to rely on an official account rather than have to transfer his unofficial emails every 20 days.

Table 5. Synthesis of the defining characteristics of the liberal model of IT governance.

	Liberal model of governmentality	Application to IT governance
Instance de véridiction	Market	IT usage
Principles	Individual interest	Convenience
	Free trade	Free choice
	Responsibility	Individual accountability
	Measurement and analysis	Measurability
Space of the exercise of power	A favourable milieu, taking into account various stakeholders and dimensions (eg, economic and physical flows), to enable *laissez-faire, passer et aller*	A favourable milieu encompassing the relationships among applications, people and decision processes
Role of government	Structure the freedom, organise fair competition	Educate about free usage (integrate hidden or long-term costs)
	Educate and foster individual trade-offs between market value (financial value) and cost (price)	Educate and foster individual trade-offs in IT usage, involving related value (intrinsic value of IT, utility) versus cost (difficulties using IT, price, learning time, ease of use)

efficiency) of the tool versus the *costs* of using it (financial, usage, and complexity costs). Each decision is an individual, situated trade-off (rather than a general directive); to that end, the role of IT departments is no longer to constrain and discipline but instead to help users make the most efficient choice, by training them to manage their freedom and educating them about the stakes and consequences for themselves and the organisation. The defining characteristics of this liberal model are summarised in Table 5.

Vignette 1 illustrates these characteristics, using the well-known Clinton case.

7. Limitations and avenues for research

This study includes some limitations. Specifying these limits enables us to define the validity of our conceptualisation of a *liberal model of IT governance*, as well as identify potential avenues for research.

First, we present a theoretical analogical reasoning process, so the findings still need to be operationalised and validated empirically through concrete case studies. Our propositions provide several potential bases for research along these lines.

Second, our study could benefit from additional research into the liberal governmentality archetype as it has developed more recently, such as in the form of decentring regulations or self-regulation trends (Black, 2001), that appear to stem largely from the influences of technical committees, epistemic communities, and webs of influence that have produced regulations beyond government auspices.

Third, the validity domain of the liberal model of IT governance needs be more specifically assessed. This model should in no way be taking to imply that "everything goes". We do not aim to advocate a free-for-all, totally open, permissible, or without-rules policy for IT governance, which would be terribly naïve and unrealistic. As we have noted, the freedom of use principle produces optimal choices at the employee or organisational unit level only when employees are held responsible for measured outcomes, such as security threats, data losses, or failures. Rather than an irresponsible leap into the unknown, a liberal model of IT governance demands the implementation of a system of accountability. In evolving technological contexts, such an accountability frame seems more appropriate and consistent than do interdictions, tight rules, or strict controls that can be easily circumvented (as in the Clinton case). However, the accountability frame also requires general training on cybersecurity for all employees, coupled with new tracking or control mechanisms, which is no easy social, managerial, or technical undertaking. As a first step forward, researchers might experiment with this model, using specific cases to limit the potential risks. A liberal model of IT governance is obviously not generalisable or universal but instead applies to specific types of IT that need to be specified according to relevance criteria, such as:

- The depth of their impacts on business processes. The considered IT should not have any immediate enterprise-wide impact on business processes but rather should start with local or individual impacts, on which the organisation might decide to capitalise (eg, choice of a file-sharing tool like Dropbox or task management software like Trello).
- The nature of possible impacts on information security. Employees should not be allowed to make choices about vital IT security elements (eg, whether to install antivirus software on their laptops).
- The depth of connections with the organisation's critical data. Implemented IT should not include critical data subject to legal regulations (eg, customer data, regulated in the EU by the General Data Protection Regulation; financial data, regulated in the United States by the Sarbanes – Oxley Act).

A good experimentation field for such criteria could be collaboration tools. Real-world organisations are investigating new tools to facilitate collaboration among

employees (eg, enterprise social networks, file repository, collaborative editing, task management), such that it could be an ideal field to experiment with individually or locally perceived convenience outcomes.

Fourth, and perhaps more fundamentally, we acknowledge the deep need for a critical perspective on the source domain to which we refer (Foucauldian framework) and the model we develop through analogical reasoning (Hassan, 2014). This article is strongly anchored in work by Foucault, which tends to be complex and difficult to grasp, notably because of his eclecticism and the multiple issues he raises (Leclercq-Vandelannoitte, 2011). The liberal model of IT governance that we derive from his thought raises several ethical issues as well. A renewed model, driven by convenience and the search for efficiency, which holds individual users responsible for their failures, creates an invisible but weighty burden on employees. Users may prefer more protected, official solutions, rather than exercise their freedom of choice. This possibility is in line with the Foucauldian idea that liberalism leaves a space for counter-conduct, at the moment individuals take responsibility for and pay the associated price for the outcomes, reflecting the cost of using less convenient tools. The role of the IT department then is to produce a framework that helps people reach their own choices.

8. Discussion: theoretical and practical contributions

We now discuss the theoretical and practical contributions of this conceptualisation of a *liberal model of IT governance*.

From a theoretical perspective, this article applies analogical reasoning to revisit the question of IT governance – long a crucial topic for IS researchers (Brown & Grant, 2005). In line with Hassan (2014), this article illustrates the importance and value of analogical reasoning in building theories, and it addresses increasing demands for theoretical contributions in IS research (Mueller & Urbach, 2017), which appears valuable for practitioners too. By exploring an alternative to current ways of thinking about IT governance, the proposed approach reveals deep connections across fields that are too often separated, despite their potential benefits for the effort to grasp organisational and IT-based phenomena, such as links across philosophy, political science, IS, and society as a whole (Hassan et al., 2016; Mingers & Willcocks, 2004).

This analogical process also suggests an alternative route for the IS discipline to advance understanding of IT governance. Using Foucault's governmentality, we conceptualise a *liberal model of IT governance*, driven by convenience and the search for efficiency, as expressed in the possibility for individual users to express a free choice. As mentioned, this model is inseparable from the development of an accountability frame; individual users must be held accountable for their own behaviours and usages, which also ultimately must be measurable.

This new model should not be understood as a new paradigm that would deprecate previous governance models. Our research should rather be conceived of as a call for experimentation with a renewed, liberal IT governance model, to complement existing theories and archetypes of IT governance and to account for recent evolutions in the societal and technological landscapes of organisations, marked by an employee-driven IT revolution. This model seems particularly well suited to cases in which IT departments can no longer impose disciplinary-based governance principles on employees. This model has implications at several levels.

First, this study offers practical implications for IT managers and executives. Our findings highlight the need to develop a renewed IT governance framework, relying on choice and incentives rather than on coercion. Defining and enacting this renewed framework should involve all the organisation's stakeholders (from IT departments to managers and corporate-level executives), and IT usage should play a key role in such a framework. The associated regulations and training should favour **convenient, freely chosen, accountable, measured uses of IT**, while promoting appropriate trade-offs between company-owned and personally owned IT. In this regard, IT departments could position themselves as service providers, offering IT services at a better "cost" than external SaaS (eg, better security, backup management, interaction with other enterprise services). They even could evolve to provide a marketplace of reliable external services (Tran & Bertin, 2015). The very notion of shadow IT would be largely weakened, because any IT use would be considered legitimate, as long as it meets the established requirements. Our findings also indicate that practitioners need to be cautious about implementing strict IT usage policies that prompt circumventing behaviours. Important discrepancies can arise between plans and formal procedures aimed at governing work and situated actions, as they get translated into practical deviations and improvisations (Suchman, 1987). For example, French law recognises employees' right to disconnect from corporate IT tools outside of official working hours, preventing employees from sending emails at night or on weekends, as enforced by the corporate email server. Such constraining mechanisms, though offered as a way to protect employees (including from themselves), are likely to lead to circumventing conducts, such as uses of personal emails to avoid the restrictions.

Second, the implications of a liberal model of IT governance take place at a broad societal level. As recognised by Foucault, a given mode of government is not a narrow phenomenon but instead occurs and has impacts on a broader societal level. The emergence of this *liberal model of IT governance* must be understood in broader contexts, including the evolution of Western societies and economies; impacts on workplaces; the decline of hierarchical organisations; the development of humanistic and agile management (Abrahamsson, Conboy, & Wang, 2009); organisational democracies (ie, holacracy, Bernstein, Bunch, Canner, & Lee, 2016; Robertson, 2015) and self-managing organisations (Lee and Edmonson, 2017); the empowerment of individual initiatives and autonomy (Hamel, 2011; Martin, Liao, & Campbell, 2013) and altered employee–employer links; and the promotion of efficiency, rightly or wrongly, as a prevailing virtue in the post-modern "episteme" (Foucault, 1966). *Reversed adoption logics* and the associated liberal model of IT governance thus echo larger trends that call for an extension of employees' room to manoeuvre, latitude, and agency in organisations (especially for IT-related decisions). However, this model also comes with new constraints, by imposing new burdens of responsibility and accountability. Calls for responsibility and freedom remain a way to govern people (Foucault, 2007, 2008), such that they raise new, ethically meaningful questions about employees' roles and identities at work.

New insights into this role might stem from recent evolutions in human resource management, as illustrated by the successful example of Netflix (Mccord, 2014). Emphasising freedom and responsibility, Netflix does not impose any formal policies for time off; employees may take whatever time they consider appropriate and must consult with human resources only if they want more than 30 days off in a row. Employees are asked to "act in Netflix's best interests" (Mccord, 2014). Such evolutions reveal that *a liberal model of government* seems to be emerging concomitantly in various organisational fields, such as IT and management, as a mirror of broader societal changes (Foucault, 1966), which eventually may challenge the very nature and meaning of "being an employee". Is each employee an executor of company policies, with less responsibility but also less autonomy, or should he or she be granted greater autonomy of choice, which comes with increased expectations and duties?

9. Conclusion: beyond "head in the hand" and "watchdog" syndromes

Two syndromes characterise many IT departments when it came to dealing with BYOD and reversed adoption logics: "head in the hand" or "watchdog". Neither attitude seems satisfactory or appropriate in the constantly shifting ecosystems in which IT are embedded (Kallinikos et al., 2013). The Foucauldian analogy developed in this article offers renewed conceptualisations and alternative perspectives on IT governance; above all, as advocated by Foucault, it represents a powerful call to action and to arms, to open new spaces and times for experimentation and solutions. We call on IS practitioners to come down from their ivory tower and take the chance and associated risks of anticipating, accepting, and provoking, rather than just enduring, the emergence of this *liberal model of IT governance* as it emerges in increasing numbers of organisations. Only if IT departments proactively pursue it, rather than turning a blind eye, can organisations and employees benefit from such a model, as it is embedded in broader organisational and societal changes. Concretely, IS practitioners must give IT users free rein, by legitimising informal behaviours while establishing a new frame of accountability. It also implies a new role for IT departments, which should become regulatory instances rather than controlling and ruling agencies. Finally, it implies a new ethics of responsibility for organisational actors, who must become aware of the apparent ineluctability of the development of such a liberal model, at several levels, including its promises and its constraints, for both the individual and the organisation.

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