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Serendipity and management accounting change

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Abstract

Purpose – This study aims to explore the serendipitous discovery of integrated reporting (IR) by Alpha, an Italian small and medium-sized enterprise (SME). Alpha piqued the curiosity when the authors discovered that it experimented with IR alongside other management accounting practices, such as the Balanced Scorecard. As the authors reflected on Alpha's experiences, the authors had to opportunistically develop a new framework to understand the change that was taking place at Alpha fully. Thus, the authors developed the serendipitous drift framework. This study contributes to addressing the gap between management accounting research that sees change as a planned, ordered process versus research that sees it as an unmanageable drift.

Design/methodology/approach – The authors ground the research on a qualitative methodology based on a single case study. This methodology allows us to focus on understanding what has happened at Alpha to discover new themes and provide theoretical generalisations. The authors developed the framework using middle-range thinking and fleshed it out using empirical findings from the case study. Middle-range thinking implies going back and forth between the theory and the empirical material. Therefore, the authors develop the serendipitous drift framework from prior theories and use it to inform the empirical study. In turn, the empirical material collected in Alpha helps refine and flesh out the serendipitous drift framework. The framework explains how Alpha leveraged serendipity to steer change towards favourable outcomes for them.

Findings – The authors find that the search for change undertaken by Alpha's managers was non-specific but purposeful. Their dispositions were sagacious enough to recognise the potential value found in management accounting practices, such as IR and the Balanced Scorecard. They chanced upon new and unforeseen practices through trial and error, iteration, internal engagement and networking.

Research limitations/implications – Overall, the results indicate that Alpha's managers shaped the disorder of management accounting changes, even though it followed unexpected, uncertain and messy paths. Indeed, appropriate informal controls can act as a frame of reference for choosing, adapting and implementing new management accounting practices to shape the disorder. Informal controls can both guide and bound the experimentation process towards desirable outcomes.

Originality/value – The authors contribute to management accounting change theory by developing a framework rooted in serendipity and drifting theories. The framework identifies how searching, sagacity and chance are essential for making positive, unexpected discoveries. Therefore, the authors provide novel insights on how and why IR and other management accounting practices are eventually translated and adopted in the case company. Moreover, the serendipitous drift framework has the potential to help managers

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frame cultural controls to actively seek opportunities for valuable serendipitous eureka moments through networking and experimentation.

Keywords Serendipity, Drift, Management accounting change, Informal controls, Integrated reporting, Balanced Scorecard, Network

Paper type Research paper

1. Introduction

> Many a scientific adventurer sails the uncharted seas and sets his course for a certain objective, only to find unknown land and unsuspected ports in strange parts. To reach such harbors, he must ship and sail, do and dare; he must quest and question. These chance discoveries are called "accidental," but there is nothing fortuitous about them, for laggards drift by a haven that may be a heaven. They pass by ports of opportunity. Only the determined searcher, who is not afraid to seek, to work, to try, who is inquisitive and alert to find, will come back to his home port with discovery in his cargo (Rosenau, 1935, p. 92).

The above passage is from Rosenau's (1935) presidential address to the Society of American Bacteriologists at its 36th Annual Meeting. It perfectly summarises serendipity, the process of change at Alpha, a pseudonymised Italian SME and the type of change this paper describes. In late 2018, we started researching Alpha while they were implementing integrated reporting (IR). However, the more we talked with the Alpha team, the more we reflected that their change process for implementing IR was not the real deal. Instead, we were witnessing a quest by Alpha's management to change its organisational culture. Alpha's management had not started this project by adopting IR – nor would that be the end of the process. Rather, the initial idea was to find anything to help the company break out of survival mode and become a thriving enterprise. IR was a serendipitous discovery along the way, as was the Balanced Scorecard and several other practices they had experimented with.

While reflecting on Alpha's experiences, we became uneasy with theories that see management accounting (MA) change as an engineered, planned and progressive exercise. Instead, we explored serendipity and drifting theories. With drifting, change is unexpected and messy but not unwelcome (Quattrone and Hopper, 2001; Andon *et al.*, 2007). However, drifting leaves the question of how organisational actors might leverage serendipity to shape change's messy, unexpected nature. When answering this question, we contribute to MA change theory by introducing serendipity as a bridge between orderly MA change and unmanageable drift (Hopper and Bui, 2016). By providing a nuanced, localised account of Alpha's search for and implementation of MA practices, we develop theoretical generalisation about forms and meanings of MA change (Parker and Northcott, 2016). Like drifting, serendipity draws on the unexpectedness and messiness of change. Beyond drifting, serendipity maintains that managers can steer change and harness the power of chance.

We draw on serendipity as theorised in scientific discovery, social dynamics, management and entrepreneurship research and information science (Merton and Barber, 2004; Yaqub, 2018). Yaqub (2018, p. 169) describes serendipity as "making unexpected and beneficial discoveries". And serendipity implies a *purposeful* search for solutions (Dew, 2009). Serendipity fits naturally with drifting because scientific discovery is no stranger to chance. Indeed, searching, sagacity and chance have long been a winning recipe for unintended positive discoveries (Dew, 2009). Sagacity is also essential because it is not just "prior knowledge". Sagacity entails an "acute mental discernment and a keen practical sense" to profit from chance events (Dew, 2009, p. 736). Thus, we combine drift and serendipity to develop a framework that parallels the need to act purposefully with the unexpectedness of chance impacting change. The framework also outlines how serendipitous MA change originates and unfolds and how managers can foster and shape it.

Even though MA change in Alpha was messy, we found that managers could steer change towards favourable outcomes. They could and did set informal controls to frame the search. Networking and experimentation were the first steps to achieving flexibility to harness chance and shape change. The managerial tone at the top helped shape the search. This tone espoused networking, experimentation, flexibility and embracing the messiness of change. Eventually, while searching for practices to help them better manage Alpha, the managers unexpectedly discovered the Balanced Scorecard and IR. According to serendipity theory, such unexpected discoveries could not have happened without the managers' sagacity and willingness to search (Dew, 2009), for there can be no serendipity without these elements.

The remainder of this article is structured as follows. Section 2 critiques the literature on MA change and builds the case for broadening theory through the serendipitous framework developed in Section 3. Section 4 explains the research methodology and introduces the case company, Alpha. In Section 5, we flesh out the serendipitous drift framework with the findings from the case study. Section 6 discusses the interplays among Alpha's informal controls, MA change and serendipity. Finally, Section 7 concludes the article by highlighting our contributions, limitations and avenues for further research.

2. The management accounting literature on change: a case for broadening theory

Who enacts a change may be as important as the nature of the change itself. Yet, surprisingly, the literature on MA change and drifting does not explain how people might intentionally shape the unexpectedness of change or whether the change in mind is possible. However, just because something is unexpected or unplanned does not mean it is random. Therefore, this literature review shows how the theoretical underpinnings of MA change need broadening to make room for chance, search and sagacity. In reviewing MA change, we found a gap relating to managers and how (if at all) they can shape the messiness and unexpectedness of change.

2.1 Management accounting change as a manageable process

MA is a subdiscipline in management control that concerns using information and practices to support or influence decision-making (Chenhall, 2003). Malmi and Brown (2008) provide a conceptual typology of management control that involves five broad categories: administration, planning, cybernetics, rewards and compensation and cultural controls. Although some researchers use the terms MA and management control systems synonymously (Chenhall, 2003), separating them helps to illustrate the interplay between formal MA practices and other forms of control.

More than 30 years have passed since Hopwood (1990, p. 16) claimed that accounting scholars were ready to "come to a more adequate understanding of the ways in which accounting is embedded in processes of organisational change". From an analysis of the *Management Accounting Research* journal between 1990 and 2014, Hopper and Bui (2016) note that MA change studies mainly follow one of two branches: *new institutional sociology* or *old institutional economics*. New institutional sociology focuses on the competitive and institutional context of accounting systems and the pressures that shape institutionalised behaviours. Old institutional economics focuses on how new accounting systems can struggle to gain traction if they do not integrate with existing rules and routines (Ashraf and Uddin, 2011; Hopper and Bui, 2016). These institutional approaches focus on change as a process rather than an outcome by examining how rules and routines become institutionalised (Burns and Scapens, 2000).

The accounting literature often refers to change as a planned process of moving from Point A to Point B – as an engineered, progressive exercise from a state without a certain practice to a state with it (Briers and Chua, 2001; Busco *et al.*, 2007). Vaivio (1999, p. 429) refers to his case study on MA change as a "disciplined and intended effort" at systematising non-financial measurements through the "identification, analysis and articulation of strategically critical activities". Further, Johansson and Siverbo (2009, p. 159) contend, "The selection and replication of existing routines lead to continuity or stability, whereas the successful selection and replication of variation lead to what is commonly referred to as change". Ter Bogt and Scapens (2019, p. 1804) also argue that people are subject to situated rationality, "taken-for-granted ways of thinking which actors adopt when taking actions in a specific situation" when deciding on the appropriate routines to follow. Their actions are entirely understandable and procedural. Selecting and replicating routines generates an ongoing process of encoding, enacting, reproducing and institutionalising (Burns and Scapens, 2000). Overall, managers and researchers view change as a clear and rational sequence of steps.

Another processual way to conceive change, especially in sustainability accounting and reporting research, is through the journey metaphor (Milne *et al.*, 2006; Higgins *et al.*, 2019). For example, Bernardi (2020) describes the emergence of IR as a journey that moved from sustainability to intellectual capital reporting and landed on IR. The journey was abruptly interrupted as the case company merged with four other companies and lost the Chief Executive Officer (CEO) sponsoring the transition towards IR. However, a journey towards something still implies instigating deliberate and systematic progress towards new practices (Higgins *et al.*, 2019).

However, the institutional and process approaches to change described by Hopper and Bui (2016) are not exhaustive. Critics of the institutional paradigm argue that it excludes individuals from the equation and thus does not embed agency – and agents – in the institution (Barnes, 2002; Stergiou *et al.*, 2013). For example, several researchers have found that how agents behave, especially top managers, is crucial to fostering MA change (Adams and McNicholas, 2007; Dumay and Dai, 2017). Moreover, Battilana *et al.* (2009) maintain that powerful actors who realise their interests by leveraging various resources to create or transform institutions are highly influential in fostering and shaping change. Therefore, we argue that it is too narrow to reduce MA change to a change in rules and routines. We must also consider *who* initiates, sustains and directs MA change.

Individuals may resort to cultural controls to shape others' behaviour (Merchant and Van der Stede, 2017; Akroyd and Kober, 2020). Sandelin (2008), for example, clarifies that culture is the broader force that affects organisational behaviour, while cultural controls help shape the values, beliefs and norms within that culture. Thus, it is possible to conceive corporate culture as an informal form of control created and sustained by social processes, shared symbols and rituals (Morgan, 2006). Notably, organisational cultures remain relatively fixed over time because they build upon shared outlooks that become embedded into a company. Sometimes these are written as rules; at other times, they are unwritten (Alvesson and Sveningsson, 2016). Although we acknowledge the ethical implications of using organisational culture to establish control and power (Dent, 1991; Harris and Ogbonna, 2011), for this paper, we define organisational culture as a shared system of meaning where norms influence behaviour (Morgan, 2006; Merchant and Van der Stede, 2017).

When shaped by top management, an organisation's culture can be a source of MA change, even if only lower-level workers are indoctrinated (Alvesson and Sveningsson, 2016). For example, in a case study of an innovative early-stage firm by Akroyd and Kober (2020), the founder's personality and background imprinted on the various management control practices implemented, such as training programmes, meetings and operations manuals – even who was hired. As such, these values become imbued into the organisation's very fabric. Merchant and Van der Stede (2017, p. 222) argue that cultural controls are particularly relevant for SMEs because they "have relatively few harmful side effects and relatively low out-of-pocket costs [and] may provide effective management control by themselves even though they are unlikely to be sufficient". It follows that managers strategically use informal cultural controls, such as tone at the top and shared norms and beliefs, alongside other controls to influence employee behaviour (Merchant and Van der Stede, 2017).

2.2 Management accounting as drifting

In the past two decades, some researchers have challenged the concept of MA change as something ordered, planned and procedural – offering the concept of drifting instead (Quattrone and Hopper, 2001). The concept has its roots in actor-network theory. It questions the idea that MA practice change involves a shift from one unique and identifiable status to another (Quattrone and Hopper, 2001; Garengo and Bernardi, 2007; Justesen and Mouritsen, 2011). Quattrone and Hopper (2001, p. 407) state that accounting change is "not created according to a central predetermined plan but rather by the interplay between calculations and discretion within accounting practices" (p. 407). Also, Briers and Chua (2001, p. 263) maintain that MA change is "the outcome of many, varied and fluid interconnections between local and cosmopolitan networks of actors and actants". Thus, change is not just the outcome of managers' actions – it is influenced by factors beyond their control (Barnes, 2002).

Similarly, Andon *et al.* (2007) claim that change results from iteration, trials, improvisation and making do. It is bounded by ties to people, technologies, inscriptions and interpretations. MA change does not occur linearly but results from a messy semantic network of relationships (Andon *et al.*, 2007; Busco *et al.*, 2007).

Drifting implies that change is haphazard and impossible to control entirely. As Andon *et al.* (2007, p. 300) outline, this messiness means that:

> Accounting change-work could not be contained within an intended progression towards a planned outcome, divorced from diverse ties and the manner, both anticipated and unexpected, in which these ties informed such work.

Accounting drift has the following characteristics:

> First, it has no connotation that individuals are sufficiently conscious of space and time to transcend the contingent factors facing them. Secondly, there is no assumption that people move from well-defined situations A or B in a linear, predictable and ordered spatio-temporal framework. Finally, it recognises contingent factors (such as currents in the sea metaphor) that actors may be aware of, seek to respond to, but carry them along in unpredictable ways. (Quattrone and Hopper, 2001, p. 427)

Quattrone and Hopper's (2001) case company did not implement its enterprise resource planning (ERP) system by following a logical, rational sequence of steps. Instead, it drifted with no pattern or endpoint. The takeaway from this, and subsequent research on drifting, is that change is messy and unexpected. Managers should embrace these characteristics, not stigmatise them (Andon *et al.*, 2007). However, the question of *how* actors are able – if at all – to intentionally shape such messy unexpectedness to produce desirable change remains unaddressed (Andon *et al.*, 2007).

2.3 Management accounting change and serendipity

To answer how managers can shape the messiness and unexpectedness of MA change, we introduce the concept of serendipity. Horace Walpole coined serendipity after reading a

Venetian tale, *Peregrinaggio de Tre Giovani Figliuoli del Re di Serendippo*, usually translated as "The Travels and Adventures of Three Princes of Serendip", with Serendip being the ancient name for Sri Lanka. In the story, three princes solve a series of unexpected quests using nothing more than their keen powers of observation, common sense and sheer luck. The legend so enthralled Horace Walpole that, in a 1,754 letter to Horace Mann, he coined the term serendipity, which has stuck ever since.

For Yaqub (2018, p. 169), serendipity is "the notion of researchers making unexpected and beneficial discoveries". The *unexpectedness* reflects chance and luck (McCay-Peet and Toms, 2015). However, serendipity demands a *directed search* and the *sagacity* to recognise a serendipitous event (Dew, 2009). Alexander Fleming's discovery of penicillin is a remarkable example of serendipity (Meyers, 2011). While searching for ways to lyse infectious bacteria, Fleming observed that a mould called *Penicillium notatum* had dissolved the bacteria on a Petri dish left out during the summer holidays. The mould had grown by accident, but Fleming quickly recognised the implications of that accident.

Yaqub (2018) offers a typology of serendipity (Table 1) based on whether targeted or untargeted research solves a given or future problem. He writes that he:

> [. . .] took the notion of serendipity, widely but vaguely interpreted it as simple happy accidents, and developed it into four, more specific, interpretations: Walpolian, Mertonian, Bushian and Stephanian. They are distinguished by firstly, whether there was a targeted line of enquiry when the discovery emerged, and secondly, what type of problem the discovery solved (Yaqub, 2018, p. 178).

By this reckoning, if a serendipitous change occurs following a lucky accident, only individuals searching with sagacity, curiosity, enterprise, courage, imagination, determination, assiduity and alertness can benefit from such an accident (Merton and Barber, 2004; Heinström, 2006). We argue that when referring to serendipity both as an outcome and as a process, one should be cautious in specifying the type of serendipity in action (after Yaqub's (2018) four types) and consider the different elements that they comprise. In our case study, we will mainly consider the Mertonian and Walpolian forms of serendipity, where one searches for a solution to a current or future problem and eventually finds one via an unexpected route (Yaqub, 2018).

Serendipity is mostly absent from accounting literature, but there are traces incidentally, and sometimes unconsciously, present. For example, Quattrone and Hopper (2001) use the term "serendipity" to describe an ERP's evolution in two companies. However, they do not define the term. Their term "serendipitous change" seems more like a synonym for Dooley and Van De Ven's (1999) "chaotic change" than Yaqub's (2018) framework. Notably, Andon *et al.*'s (2007) expanded definition of drifting relies on serendipity's critical features: experimentation and networks.

Similarly, Hadid and Al-Sayed (2021, p. 12) find that an innovation-oriented organisational culture motivated management accountants to network internally and externally, which, in turn, enabled "management accountants to gain the knowledge and

		What type of solution did the discovery lead to?	
Is there a targeted line of enquiry?	Yes: Searching with a defined problem in mind	A solution for the given problem *Mertonian* serendipity	Solution for a different problem *Walpolian* serendipity
	No: Searching with no particular problem in mind	A solution for a pre-existing problem *Bushian* serendipity	A solution waiting for a problem *Stephanian* serendipity

Source: Yaqub (2018, p. 172)

Table 1. Taxonomy of serendipity

skills needed to identify new ideas/practices and implement the most relevant ones" – a circumlocution to express an increase in the management team's *sagacity*. Also, Brinckmann *et al.* (2019) maintain that business planning in SMEs is influenced by managers' individual characteristics, which may resort to their personal networks instead of planning formally. Finally, Lavia Lopez and Hiebl (2015) find that SMEs participating in networks tend to be influenced by said networks in adopting MA practices. Experimentation and networks play a role in exposing people to novelty are crucial features of serendipity (Yaqub, 2018).

Like drifting, serendipity involves chance and unexpectedness. But beyond drifting, serendipity theory maintains that actors can shape change and harness the power of chance (Merton and Barber, 2004). We argue that serendipity theory may address the issues left open in accounting drift and, more specifically, the possibility for people to shape the messiness and unexpectedness of change. People can direct their search towards solving a problem – specific or not – which converts the messiness of change into a malleable, if not entirely controllable, form (Yaqub, 2018). Eventually, the searcher (the *who*) might solve the problem via an unexpected, serendipitous route (the *how*). Note, though, that the unexpectedness may lie in the finding or the approach (Yaqub, 2018).

If the theory of drifting has the merit of calling into question the idea that MA change is an ordered, engineered process, it also leaves us wondering whether and how it is still possible for people to move towards desirable change intentionally (Andon *et al.*, 2007). Although serendipity focuses on solving a problem via unexpected routes, the assumption is there that such a route does exist, which implies that it should be possible to steer change towards desired outcomes. Moreover, in scientific research philosophy, Mertonian serendipity is not necessarily at odds with targeted research – that is, setting targets to orient the search activity does not mean ruling out chance (Yaqub, 2018).

A classic example of serendipitous discovery is when Goodyear discovered vulcanisation when he accidentally left a mixture of sulphur and rubber on a hot stove. Vulcanisation accidentally solved Goodyear's 10-year quest to make rubber thermostable (Yaqub, 2018). In MA terms, a management accountant involved in networking activities may unexpectedly come into contact with an MA practice they were not aware of (Hadid and Al-Sayed, 2021) and, in doing so, they may solve a quest to assign costs better or improve efficiency or link financial and non-financial information together. Both are examples of what a serendipitous discovery could look like – the first widely documented in the scientific literature and the second made up as a fictional example for an MA context. Moreover, both show that a planned approach to change is not a suitable explanation for how change happens (Briers and Chua, 2001; Busco *et al.*, 2007). However, relying on chance and drifting alone is not enough. Without a purposeful search and the sagacity to recognise that a certain MA practice may be useful, there can be no discovery and, thus, no change (Dew, 2009; Yaqub, 2018). Thus, our task is to try to answer the following research question:

RQ1. How might organisational actors leverage serendipity to control the messy, unexpected nature of MA change?

3. The serendipitous drift framework

In this section, we develop our serendipitous drift framework. The framework integrates drift from MA with serendipity from scientific discovery, social dynamics, management and entrepreneurship research and the information science literature. Table 2 shows that our framework comprises seven bones: a trigger, directed effort/experimentation, networks/relations, enaction, eureka, outcomes and reflection. These bones are fleshed out in our case study analysis in Section 5.

Framework element	Description	Theoretical references
Trigger	Contingency, lacuna, the event that starts the serendipitous drift	Merton and Barber (2004), Busco *et al.* (2007), Makri and Blandford (2012)
Directed effort and experimentation	A purposeful search needs to be in place that involves action, trial and error and iteration	Merton and Barber (2004), Andon *et al.* (2007), Dew (2009), Makri and Blandford (2012), Yaqub (2018)
Networks and relations	A relational network in which actors play and fulfil facilitating and informative roles	van Andel (1994), Graebner (2004), Merton and Barber (2004), Andon *et al.* (2007), Dew (2009), McCay-Peet and Toms (2015), Yaqub (2018), Hadid and Al-Sayed (2021)
Enaction	The process of creating knowledge through action. Users shape the technology structures and their use	Orlikowski (2000), Quattrone and Hopper (2001), Boudreau and Robey (2005), Yaqub (2018)
Eureka moment	The point at which discovery is made and recognised through the sagacity of the actor. Usually, the knowledge is connected to the need that triggered the search	Rosenau (1935), van Andel (1994), Fine and Deegan (1996), Merton and Barber (2004), Heinström (2006), Dew (2009), Makri and Blandford (2012), McCay-Peet and Toms (2015)
Outcome	Benefits to the individual, organisation, society, etc	Graebner (2004), Makri and Blandford (2012), McCay-Peet and Toms (2015)
Reflection	Making sense of what has or is happening in terms of unexpectedness, outcomes and connections	Fine and Deegan (1996), Quattrone and Hopper (2001), Makri and Blandford (2012), McCay-Peet and Toms (2015)

Table 2. Serendipitous drift framework

This framework emerges from the case study data via induction and middle-range thinking (Laughlin, 1995). The more we dove into the case material, the more we needed a framework for MA change that could consider both the unexpected nature of change and a potential role for actors to shape the messiness of change. Middle-range thinking helped this process since it implies using "prior theories to inform further empirical studies" (Broadbent and Laughlin, 2013, p. 55). It is an argument that implies that social science theories are never complete. Thus, scholars can use theories as a skeleton to inform empirical studies. In return, empirical studies help to flesh out theories (Laughlin, 1995). Middle-range thinking converts theory into a "conceptual language that enables discussion of the empirical situation" (Broadbent and Laughlin, 2013, p. 56). Therefore, our findings from the case study do not test a theoretical framework. Instead, they are used to expand upon and integrate existing concepts into a cohesive theoretical framework for explaining how MA change unfolds in practice, akin to the "theoretical generalisation" explained by Parker and Northcott (2016).

3.1 The search for something: triggers, experiments and networks

Serendipity is not randomness or sheer luck. It occurs while looking for something, whether that be anything or something else (Rosenau, 1935; Merton and Barber, 2004). Hence, for serendipity to occur, there must be a purposeful search (Dew, 2009) and a need that triggered the search, whether specific, vague, immediate or even unconscious (Makri and Blandford, 2012). For example, finding €50 on a path while walking the dog is not serendipity, but finding Montezuma's treasure on a beach with a metal detector is.

Once a *trigger* has set a search in motion, people begin drifting. The trigger is needed because searching does not necessarily follow an ordered, predetermined process. It can accelerate, decelerate, stall, twist, divide and merge (Andon *et al.*, 2007). Andon *et al.* (2007) discuss several central features of drift-style searching. These are iterative trials, experiments, improvisation and making do.

Interestingly, all are adjectives that can describe most organisations' change processes. They "make do" with the resources at their disposal; they strive for improvement through trials and iteration and cope with the consequences of their decisions through extemporaneous action (Andon *et al.*, 2007). In this sense, serendipity may also result from failures and mistakes, which Yaqub (2018) claims can be more or less conscious. In fact, Dew (2009) cautions us not to disregard errors in our analysis as outliers since idiosyncratic and unexpected findings can lead to serendipity. This process of purposeful drifting and experimenting is the framework's *directed effort and experimentation element*.

The help from their networks can also lead to serendipity (Yaqub, 2018). For example, Dew (2009 p. 748) outlines that experienced entrepreneurs have a greater likelihood of serendipity because they "tend to have richer social networks [and] their network connections may expose them to information flows that make them more likely to encounter contingencies". However, networks can negatively impact serendipity if they promote groupthink or act as an echo chamber (Yaqub, 2018). Serendipity does not require objectively novel ideas, but, at the least, the ideas must be novel to the person discovering them. These are the concepts captured by the *networks and relations* element of the framework.

3.2 The serendipitous discovery: enaction and eureka

Quattrone and Hopper (2001) argue that information technologies and MA practices are not something *out there* waiting to be discovered by organisations. However, such practices are enacted and co-produced by the interplays between knowledge and action. In their view:

> Knowledge is a form of action inseparable from the activity of doing. Individuals make sense of abstract forms of knowledge – such as that taught on training courses – through practical activities that eventually become codified into managerial practice. Analogously, action is a form of knowledge because acting requires learned practices to make it possible. (Quattrone and Hopper, 2001, p. 416).

The process of learning and implementing new technology does not necessarily follow a predetermined structure, schedule or method. Such a learning and adaptive processes are particularly relevant for SMEs since they often need to adapt and simplify new technologies to make them work in practice (Del Baldo, 2017). Such a process implies recurrent learning and interaction between the human being and the technology or practice at hand (Orlikowski, 2000; Boudreau and Robey, 2005). In Boudreau and Robey's (2005) research, this kind of improvised learning through action resonates strongly with serendipity. They highlight how some enactments of technology are unexpected and produce unintended use patterns. Thus, we believe that Quattrone and Hopper's (2001) *enaction* adds a relevant element to the serendipitous drift framework.

Fine and Deegan (1996, p. 442) describe the mental sparkle when a person realises that discovery can fulfil a need as the "Ah-ha! response". This recognition of potential, this eureka moment, is the serendipity, not the discovery itself. Thus, unforeseen circumstances connect the actor with the information they possess with the need that sparked the search in the first place. The connection produces an "idea that has the potential to lead to a valuable outcome" (Makri and Blandford, 2012, p. 691). Moreover, such moments cannot occur without sagacity (Dew, 2009). Only a prepared mind will recognise the discovery as fulfilling a need (Makri and Blandford, 2012; McCay-Peet and Toms, 2015). Sagacity, in turn, depends on prior knowledge and experience, which, once again, links into networks (Dew, 2009).

Personal traits are also an essential factor. Curiosity, an energetic personality, high motivation, positive emotionality, openness, alertness, assiduity, determination and imagination – all these characteristics increase the likelihood that one will make a serendipitous connection (Heinström, 2006). In the serendipitous drift framework, the ah-ha! connection is the *eureka* element.

3.3 Sensemaking: outcomes and follow-up

McCay-Peet and Toms (2015, p. 1469) maintain that "there must be a positive aspect to an experience for it to be perceived as serendipitous" – that the serendipitous outcome, in the end, needs to satisfy the triggering need. For example, the outcome might be subjectively considered knowledge-enhancing, impactful, timely or timesaving. Its value can be individual, organisational or societal (Makri and Blandford, 2012). From a study on mergers and acquisitions in technology firms, Graebner (2004) found that serendipity helped create technological and strategic managerial knowledge when personnel had cross-organisational responsibilities.

Hence, serendipitous drift does not end with the eureka moment. People must also reflect on the connections and outcomes (Makri and Blandford, 2012; McCay-Peet and Toms, 2015). This iterative cycle of reflection is a part of recognising the full value of the discovery. Makri and Blandford (2012) argue that such a cycle is more theoretically than empirically grounded since it may be too abstract a concept for one involved in the search process. Nevertheless, without reflecting on the outcome and the role chance played, people might not fully recognise or understand what has happened. Makri and Blandford (2012) go so far as to claim that, without recognising that something is serendipitous, it is not serendipitous at all. It follows that reflecting on serendipitous drift involves subjectivity and provides an opportunity to construct a plausible story of how sagacity coupled with chance addresses the trigger (Fine and Deegan, 1996; McCay-Peet and Toms, 2015).

The reflection just described is akin to Quattrone and Hopper's (2001) concept of praxis. Praxis is the "act permitting individuals to make sense of organisational practice and judge its rationality" (Quattrone and Hopper, 2001, p. 425). Thus, one cannot define beforehand whether an organisational practice is rational or optimal. Instead, "rationality assumes meaning only if it is made operational through regular practices located in a specific space and time" (Quattrone and Hopper, 2001, p. 425). Thus, a practice considered rational in one organisation may not be so in another. Applying the same reasoning to serendipitous drift, a valuable connection made in one organisation may not be valuable to another. Therefore, one cannot derive optimal profit from discovery without making sense of it (Makri and Blandford, 2012; McCay-Peet and Toms, 2015).

4. Methodology

To answer the research question of how organisational actors might leverage serendipity to control the messy, unexpected nature of MA change, we followed a case study methodology with an Italian SME as our case subject. The case study methodology is well suited for this research since it helps answer both how and why questions. It is also well suited to understanding and explaining "the specific, rather than to produce generalisations" (Scapens, 1990, p. 265), which makes it a useful tool for building theory that works in practice (Eisenhardt and Graebner, 2007; Yin, 2018). Specifically, the case study methodology helps us to refine and flesh out the serendipitous drift framework (Laughlin, 1995; Broadbent and Laughlin, 2013). Therefore, Alpha's case study does not test the validity of the serendipitous drift framework in practice. Instead, we use the empirical material create the framework and provide theoretical generalisation from our results (Parker and Northcott, 2016).

4.1 Why Alpha?

Founded in 1960, Alpha (a pseudonym) is a manufacturing company that mainly supplies mechanical components to the construction sector. As of 2018, Alpha had 55 employees, assets of €17.5m and an annual turnover of €9.5m. The company's strategy centres around a business-to-business (B2B) business model. Although the Italian market accounts for 60% of its total turnover, changes in revenue from foreign countries still significantly impact Alpha's turnover – especially the countries in Northern Africa and the Middle East. Notably, the new CEO did not decide to run to economic nationalism as, by 2017, new business from foreign clients doubled that of new business from Italy.

Over the years, Alpha has implemented a wide range of different MA practices, including the Balanced Scorecard, strategic maps, environmental management systems, quality control systems, the Eco-management Audit Scheme (EMAS), risk maps, IR and others, making it one of the few Italian SMEs to have implemented such a wide variety of management practices. In this sense, it is a critical case for studying MA change (Yin, 2018). In addition, Alpha has won awards for the quality of its integrated reports and has been hailed as a best practice example for SMEs.

Additionally, Alpha is an SME, which suits our needs for theoretical sampling (Eisenhardt and Graebner, 2007). Firstly, SMEs are usually less studied in MA research than their larger counterparts (Hopper and Bui, 2016). Secondly, SMEs are generally financially constrained and less prone to implementing practices such as window dressing. Thirdly, SMEs tend to have simple organisation structures, i.e. flatter hierarchies and fewer functions, which rule out organisational complexity as a factor in the success or failure of their experiments. Fourthly, only a few SMEs publish integrated reports, and IR adoption in SMEs is an under-researched phenomenon worth exploring (de Villiers *et al.*, 2020; Del Baldo, 2017, 2019). We believe these characteristics provide us with the opportunity "to explore a significant phenomenon under rare or extreme circumstances" (Eisenhardt and Graebner, 2007, p. 27).

4.2 Data collection

Data was collected from various sources, as shown in Table 3. Data gathering commenced with an informal meeting with the Chief Financial Officer (CFO) in November 2018, followed by a company seminar. The two events lasted for 2.5 h combined, during which we had the opportunity to talk freely with the CFO. One of us took notes. Several people relevant to the research were identified at that meeting. These were: the CEO, who introduced Alpha to the Balanced Scorecard, EMAS and IR; the CFO, who was responsible for implementing IR and quality control; and the controller (CON), who oversees Alpha's information and management control systems.

Several months later, between April and July 2019, we conducted semi-structured interviews with these three managers. Semi-structured interviews allow the interviewees to answer questions while allowing the researchers to clarify their answers and ask follow-up questions where needed (Bryman and Bell, 2015). To familiarise respondents with the research topic and scope, we sent them the interview protocols and a list of the questions to be asked before the interview. At the outset of each interview, the interviewer reminded the interviewee that their name and the company's name would be kept anonymous. The reminder ensured that the interviewees could talk freely about the topics raised. They were also reminded that interviews were being recorded and would subsequently be transcribed. Each interview lasted from 45 to 75 min. Two researchers were always present.

Source	Data	Code
Public documents	Alpha Integrated Report 2018	IR18
	Alpha Integrated Report 2017	IR17
	Alpha Integrated Report 2016	IR16
	Environmental Declaration 2019	ED19
Website	Sustainability section	WebSUST
	Media section	WebMED
Interviews (45–75 min)	Chief Executive Officer (CEO)	IN, CEO
	Chief Financial Officer (CFO)	IN, CFO
Meeting/seminar (2.5 h)	CFO	Sem, CFO
On-site field visit (3.5 h)	CEO	FV, CEO
	CFO	FV, CFO
	Controller (CON)	FV, CON
Internal documents	Minutes from departmental meetings	FUNMEET
	Map of KPIs	MapKPI
	Map of processes	MapPRO
	Map of quality objectives	MapQUAL
	Organisation chart	OrgCHART
	Org chart of the environmental management system	ECHART
	Org chart of work safety	WCHART
	Strategic map	MapSTRAT

Table 3. Data source categories and codes

The next step was an on-site field visit and a meeting with the CEO, CFO and CON, held in October 2019. At the meeting, we discussed the organisational restructure and the MA practices Alpha had implemented over the years. We both took notes and were given some internal documents. Other internal documents were available during the meeting but could not be taken away. For these, we made notes of salient points.

Relationships among the research objectives emerged and were validated by triangulating the data (Yin, 2018). For example, the interview data was checked against internal documents and publicly available information, such as the company's published reports and website. If one of the interviewees provided a piece of information considered relevant to the research, we asked the other interviewees to confirm it in a subsequent interview. We also looked for supporting data in the internal and external documents. So, for instance, when the CEO described himself as the initiator and leader of the IR process, we independently checked this information with the CFO and the CON. We also examined the press releases (*WebMED*) to see whether the language used confirmed or refuted the claim. If we found no striking signs of inconsistencies among the different sources (as was the case in this instance), we considered the information reliable and considered it in our analysis. Similarly, whenever something interesting emerged from the documents, the interviewees were asked to elaborate and corroborate the data until we understood the issue satisfactorily. Overall, this triangulation process yielded satisfactory confidence in the data's reliability.

5. Fleshing out the framework: insights from the case study

The case study is divided into three periods, which correlate to the main stages in Alpha's journey of change.

From 2007 to 2011, Alpha experienced a restructuring process as a prelude to a generational shift in the company's ownership. Alpha's board appointed a new Director-General in 2008, who was subsequently promoted to CEO in 2011 (IR16). The new CEO, who kept the director-general position, navigated the company through Alpha's slow recovery from a 20% drop in turnover since 2009 due to the financial crisis, followed by the Arab Spring, which caused an 11% decrease in turnover in 2011. The reorganisation process and the economics threats necessitated a search for management systems to run the organisation (IR16). Further, during this period, Alpha's managers started experimenting with MA practices, such as the Balanced Scorecard, which were introduced to the organisation through internal and external networks.

From 2012 to 2016, Alpha continued to experiment and network. For example, they joined the Business Reporting Network (a pseudonym to ensure confidentiality), a multi-stakeholder network involving academics, large organisations, SMEs and consulting firms with two main objectives. Firstly, it seeks to evolve business reporting towards more transparent and useful information for the financial market. Secondly, it actively contributes to defining or identifying non-financial metrics to measure an organisation's value creation. As a result of joining this network, Alpha's managers were exposed to new knowledge, such as the IR Framework (IIRC, 2013). Moreover, Alpha's managers implemented various MA practices – risk management, strategic maps, quality management systems and environmental management systems – translating and adapting them to meet their needs.

From 2016 to 2019, Alpha issued three Integrated Reports and an environmental declaration. In IR, Alpha's managers saw a tool to achieve strategic thinking, engagement, dialogue and systematisation of Alpha's activities. Also, Alpha's managers had the chance to reflect on the journey leading to IR and its outcomes with the help of the researchers.

We acknowledge that these three periods are a simplification of the entwined activities of the organisation that, in many cases, happened simultaneously and extended beyond the three periods (Figure 1). However, we believe they help tell of Alpha's serendipitous journey that unexpectedly resulted in IR. Such a journey was characterised more by back and forth, trial, error and drift than an ordered, planned and consequential sequence of steps.

Table 4 maps the insights from the case study into the serendipitous drift framework.

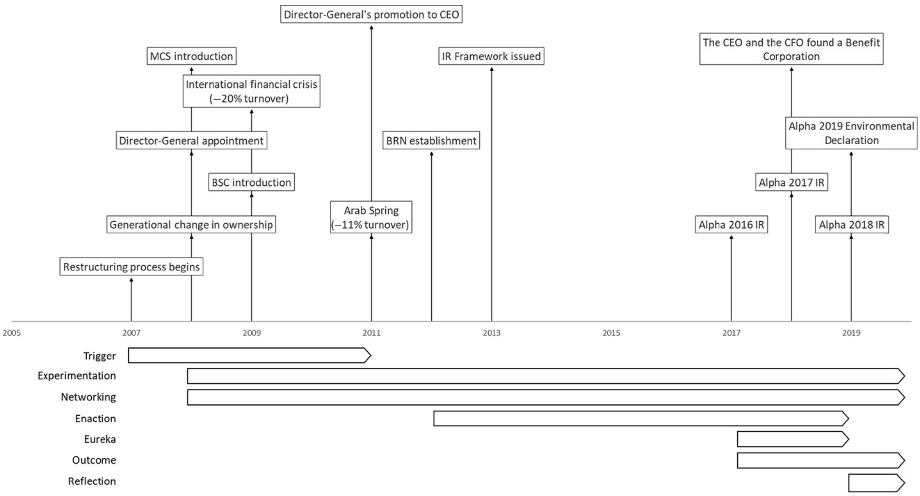


Figure 1.
Timeline of events in Alpha's case study

Source: IR16, IR17, IR18, WebSUST, WebMED

Framework element	Timeline	Case evidence
Trigger	2007–2011	Cultural triggers: the need to put the human before the employee. Fostering dialogue, empowerment, engagement, humanistic management Business triggers: the need to survive and make profit
Directed effort and experimentation	Since 2008	Experimentation with *traditional* MA practices: quality control, Balanced Scorecard, SWOT, budget, charts of accounts, direct method costing, targets and KPIs Experimentation with *culture-driven* MA practices: Balanced Scorecard, non-financial targets and KPIs, ISO 14001, EMAS, IR and the six capitals, Agenda 2030
Networks and relations	Since 2008	External networks: universities, Business Reporting Network, business associations Internal networks: internal meetings, feedback mailbox, shared spaces
Enaction	2012–2019	Actors translate triggers into questions that are addressed through action (i.e. developing practices). Practices are iterated, discharged and modified according to their ability to meet needs Translating and adapting the Balanced Scorecard, risk mapping, a business model matching Alpha's contexts with needs
Eureka moment	2017–2019	Several MA practices, the most unexpected and impactful being the IR Framework
Outcome	Since 2017	IR as a promoter of strategic thinking, engagement, dialogue and systematisation. Integrated reports as a communication and management tool
Reflection	Since 2019	The search for solutions unexpectedly results in integrated reporting Recognising there is as much value in the search as the outcome

Table 4.
Framework of serendipitous drift and insights from the case

5.1 Surviving and engaging employees: the triggering needs (2007–2011)

While talking with Alpha's top management, we identified two triggers that fuelled change. Everyone agreed that both resulted from the reorganisation that began in 2007. The first set of triggers links to organisational culture. We refer to these as cultural triggers. The second set relates to more traditional business needs, such as survival and making a profit. These we call the business triggers.

The management's background can easily explain many of the cultural triggers. With a degree in Classical literature, a master's in HR Management and Development, an MBA and qualifications in marketing, the CEO's passions are squarely rooted in the humanities – which is not unusual, but it stands out in a mechanical manufacturing context. He also has a history of involvement in corporate social responsibility (CSR) and sustainability projects and participates in national CSR meetings. In 2018, both the CEO and the CFO founded a benefit corporation [1] to help SMEs with CSR issues – for example, how to strategically integrate sustainability into a business, methods of disclosing non-financial information, taking a humanistic approach to management by placing the human being at the fore, etc. (IN, CEO; IN, CFO; FV).

The shift in organisational culture also emerges from Alpha's corporate communications. For example, in a letter to the stakeholders justifying the decision to issue an integrated report, the CEO states:

> At the basis of this decision, there is, first of all, the intention to combine the different expectations of those in and around the world of Alpha. Integrated reports belong to a new economic vision of humanistic management for businesses. This perspective implies the participation of all people. Every one of us has a unique identity with the ability to act for the natural, human, intellectual and intangible world. (IR16)

Putting human beings at the fore hinges on fostering dialogue – on engaging and empowering employees and shareholders. Thus, this shift in organisational culture triggered top management to look for new practices to manage the business. More specifically, the managers felt that to survive and thrive, they needed to build structures for organising, monitoring and controlling Alpha's activities:

> As a company grows, it risks losing control over who does what and how to do things. To not lose the organisation's pieces, the company needs to build an organisational structure to collect and codify information; otherwise, it will get lost. (FV, CON)

Additionally, the firm's revenue decreased from €18 in 2009 to less than €12m in 2018 (Bureau van Dijk, 2020), reinforcing the *business* triggers. Alpha's management needed instruments to communicate how the company created financial and non-financial value:

> We needed to write, make evident, collect, and narrate what is inside Alpha and its vision. [...] It is useful to narrate how the company creates value and its linkages with the territory. There is the willingness to share what Alpha is about with everyone that is part of it: employees, suppliers, customers, etc. [...] It is not just about taking into account organisational impacts but also explaining how you get to meet your targets and how you manage the company in practical terms (IN, CFO).

These needs triggered top management to seek new and alternative ways to address the needs they were facing. They spanned a serendipitous search for practices through experimentation and networking.

5.2 Experimentation with different management accounting practices and management control systems (2008 onwards)

From 2008, the cultural and business triggers led Alpha to experiment with new managerial and accounting practices. Alpha's top management believed better organisation and management control systems were the route to surviving and thriving. Therefore, the executive team tried to implement different traditional MA practices and management control systems alongside the standard budgets, chart of accounts and direct method costings (FV, CFO). They defined and codified roles, responsibilities and procedures by developing charts and maps (*OrgCHART, ECHART, WCHART, MapPRO*). They worked with the Balanced Scorecard, strategic maps (*MapSTRAT*), SWOT analyses and other technologies. They also developed a quality control system following the UNI EN ISO 9001 comprising 28 KPIs grouped into ten processes: commercial, production, equipment, logistics, delivery, purchasing, research and development, customer care and after-sales, internal communication and external communication (*MapKPI*). These KPIs monitor 11 strategic objectives, such as improving profitability and acquiring new clients (*MapQUAL*).

From a cultural perspective, the practices tended to align with the leadership's cultural background. The Balanced Scorecard, for example, falls into this category:

> We landed on the Balanced Scorecard and non-financial KPIs because we were looking for a way to codify, measure, and value intangibles and all human and relational capital investments. (IN, CEO)

Alpha also experimented with non-financial practices like the UNI EN ISO 14001 environmental management system, the EMAS, IR, the six capitals model and Agenda 2030. Whenever Alpha's managers considered a certain practice, tool or KPI useful to address a need, whether controlling, organising or engaging, it was adopted and iteratively adapted by top management. Most of the time, the new practices were enacted alongside the older ones, expanding Alpha's management controls:

> We introduced surveys for customer, employee, and supplier satisfaction thanks to IR. And we continue to do them. (IN, CFO)

> If the objective changes from acquiring new markets to consolidating existing ones, we build a new set of KPIs for such an objective. (FV, CON)

This process of selecting, varying and iterating resulted in Alpha serendipitously taking different routes depending on whether a certain tool, practice or KPI was experimented with and eventually seemed fit to answer Alpha's needs.

5.3 Relations and networks: Alpha's exposure to novelty (2008 onwards)

Alpha's internal and external networks also fed into the experimentation. Alpha discovered both the Balanced Scorecard and IR thanks to external relationships. The Balanced Scorecard came to the CEO and CFO through a collaboration with an Italian university and a master's thesis project they found particularly interesting and relevant to Alpha. Similarly, IR was discovered through the Business Reporting Network:

> Thanks to the relationships gained at a CSR event in Milan and at the not-for-profit foundation I was part of, I had the chance to learn about this Business Reporting Network. Thanks to such a network, we started to delve deeper into integrated reporting. (IN, CEO)

External parties also influence how to implement practices. For example, insights from ISO 14001 and the EMAS guidelines inform Alpha's environmental KPIs:

> In the beginning, the environmental KPIs were different, and EMAS gave us a hand in developing them. Now we have a set of environmental KPIs linked to our objectives. (FV, CON)

These examples show the top management's predisposition to go beyond the firm's boundaries and seek help, counsel and inspiration from external networks.

Internal networks and meetings also play a role in the experimentation process. Each department plans a minimum number of monthly meetings where managers and employees propose development plans:

> Development plans come from internal meetings, suppliers, and internal audits on internal processes [. . .]. They propose many development plans and ideas to improve the product, the processes, and the overall management system. (FV, CON).

The importance of internal meetings for sharing knowledge and ideas and finding solutions is clear from the minutes of the meetings:

> A meeting was scheduled with the shipping employees to examine the evidence of mistakes and determine the causes. They were also asked to offer ideas for improving the indicators and the shipping process. (FUNMEET)

Alpha also provides a feedback box where anyone can anonymously propose new ideas or offer constructive criticism. Every suggestion is registered and followed up with at least a discussion in a meeting:

> Suggestions: they represent a second relevant modality of corporate organizational communication and dynamism. Every person or production unit can communicate personal suggestions to help to enhance the relative processes. Periodically, meetings are organized with the authors of the suggestions and other concerned people to categorize, collectively evaluate, and answer the proposals. (IR16)

> We have an Excel file with what we have and have not done to address employees' suggestions. (FV, CEO)

While external networks serve as exposure to new knowledge and guidance, internal networks provide feedback and suggestions. Both networks support Alpha in its serendipitous exploration and experiments with new practices. Indeed, they provide an unexpected point of contact between managers and practices previously unknown to them.

5.4 Enaction: translating and adapting management accounting practices to Alpha's context (2012–2019)

A pattern emerged in talking with top management about how they translate and implement practices. It was not necessarily consciously, but it did link the needs that triggered the search with actions considered reasonable enough to fulfil those needs:

> What is it that makes my profitability grow? What makes my financial management better? The choice of KPIs comes from the primary processes that lead to financial/economic benefits. Quality, environmental, health, and safety control systems require continuous monitoring of data and processes. How do I monitor processes if not with objective KPIs? So, we set up data collection for the management control and monitoring systems and processes. (FV, CON).

> When I say "cultural development" or "motivational development", [. . .] we organised a cinema, a theatre in Alpha, a shared vegetable garden, and a recreation room. They all embed motivation and a sense of engagement in the company. (FV, CEO)

These examples show Alpha's managers developing internal practices and indicators to address its triggers. Management is searching for answers to questions like:

Q2. How can I be more profitable?

Q3. How can I monitor my processes?

Q4. How can I engage employees?

And they are trying to find those answers by setting up practical routines and actions.

Alpha's experimentation with new practices and management control systems did not stop at retrieving new knowledge, selecting and reproducing practices and then iterating. Instead, the experimentation was crucial to translating, modifying and adapting the practices to match Alpha's context. Four examples of this stand out. First is the Balanced Scorecard:

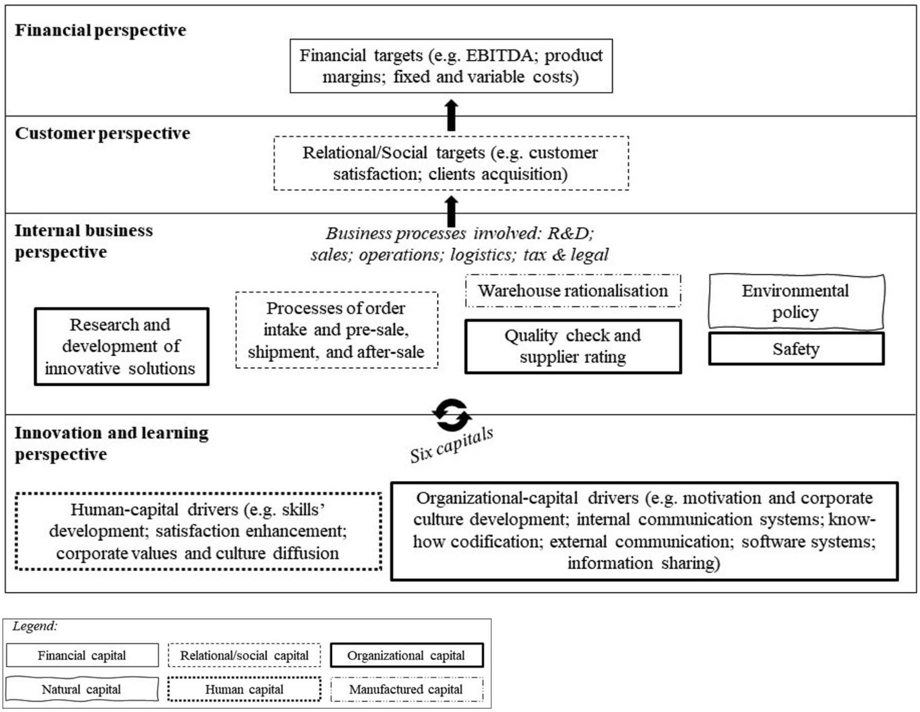
> The Balanced Scorecard originated as a concept. Then it filled up incrementally as the KPIs for the management control systems produced data and indicators. So, we refined it as soon as we finished the management control systems. (FV, CEO)

Alpha formulates its strategic map as a Balanced Scorecard. Figure 2 shows the efforts made to integrate the strategic map with the different capitals of the IIRC Framework and the attention given to the various capitals other than financial. Integrating the strategic map with the six capitals model aligns with top management's attention to the business's aspects beyond the four traditional perspectives of the Balanced Scorecard. Moreover, the internal management control system is based on the same strategic map as in Alpha's integrated reports, though in a condensed form.

Secondly, and like the Balanced Scorecard case, Alpha evolved its approach to risk management. Its new map divides risk into the IR Framework's six capitals (Table 5) and includes risks in each.

Thirdly, Alpha broadly adopts the IIRC's representation of a business model but further adapts it to include some of the UN's Sustainable Development Goals. Figure 3 shows that the representation originates from the <IR> Framework but incorporates Agenda 2030.

Finally, integrated thinking is another concept enacted by Alpha's top management. The IIRC's (2013, p. 33) definition of integrated thinking is "the active consideration by an organisation of the relationships between its various operating and functional units and the capitals that the organisation uses or affects". Alpha interpreted integrated thinking as



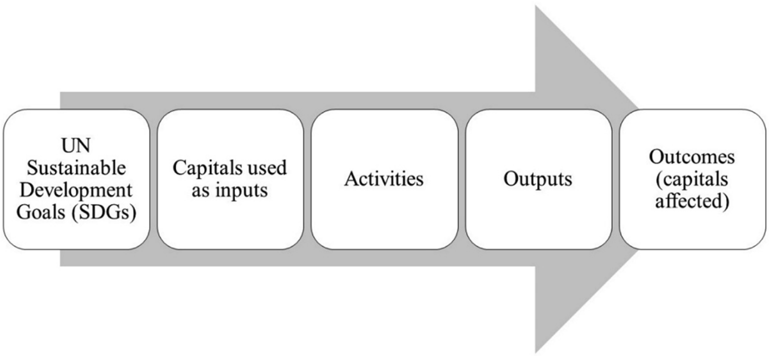
Source: Adapted from IR16

Figure 2.
Alpha's strategy map

Table 5.
Alpha's updated risk map

Risk type	Mitigation	Impacted capital
Risk class: market		
Communication	Sharing communications on corporate servers, communication processes for clients/suppliers, communication protocols, plans for meetings with clients and suppliers, visual identity guide	Relational Organisational Financial
Risk class: operational		
Stock interruption	The MPR production and supply planning system with planned lead times	Manufactured Organisational Financial
Risk class: compliance		
Natural environment	Internal processes for environmental management, plus attaining the ISO 14001 and EMAS certifications	Natural Organisational
Risk class: economic-financial		
Credits	New client evaluation, information requests, credit insurance, constant credit checks	Financial Relational

Source: Adapted from IR16



Source: Adapted from IR18

Figure 3.
Alpha's updated and simplified business model

involving all company personnel in strategic thinking, knowing and feeling part of a bigger organisational picture (*IN, CEO; IN, CFO; Sem, CFO*).

These four examples – the strategic map, the risk map, the business model and integrated thinking – underscore how Alpha translates and enacts practices rather than simply adopting and implementing them. Thus, managers take the abstract model of the Balanced Scorecard or IR's business model and create practices through action, then shape them to suit the organisation's needs and culture.

5.5 New knowledge meets the needs: the eureka moment (2017–2019)

Alpha's search for ways to address its needs had the company adopting and adapting several new and unexpected MA practices. The most striking example of a eureka moment for Alpha occurred when top management found out about the IR Framework.

Alpha was part of the Business Reporting Network following developments at the IIRC. Therefore, when the IIRC issued the IR Framework in 2013, Alpha's managers were readily exposed to this new reporting tool. In the managers' eyes, it appeared well-aligned with Alpha's business:

> When this [IR] framework was born in 2013, it coupled almost entirely with Alpha's reality, mentality, vision, and management approach. (IN, CFO)

> Alpha has been undertaking a management evolution for many years to evaluate the use of all the corporate capitals – most of all the intangible ones – for management and value creation. At present, Alpha presents an organisational and management structure that perfectly balances these capitals, and the Integrated Report has the fundamental objective of being a disclosure tool and an innovative accounting model that reflects management's values and the operational applications of the business. (IR16)

Coherent with Mertonian-type serendipity, this was an unexpected solution that solved a given problem (Yaqub, 2018). It is worth noting that the managers were not necessarily searching for a new reporting practice when they discovered IR. When Alpha started to search for ways to address its cultural and business needs, the IIRC did not even exist. However, once the IR framework came out, Alpha's managers were sagacious enough to see in IR an instrument for internally and externally systematising and communicating how Alpha creates value based on its historical business activities, practices and experiments:

> The integrated report allows us to give the image of an organised company, consistent with its actions towards its objectives, values, and the needs of its market – with robust traceability of information [. . .] a codification of its know-how and great attention to people and their training. (IR16)

> Alpha's choice to issue an Integrated Report means letting more holistic thinking emerge. Thanks to this, we can make Alpha's broader value creation evident over the year. (IR17)

Hence, Alpha's top managers were serendipitously exposed to the IR Framework during their search:

> In pursuit of an objective to share the information that represents the founding basis of the organization, this direction has initiated an innovative accounting process. It comprises Integrated Reporting and has the aim of informing all the stakeholders of the company about our competitive situation, our strategic view, our operational model of management and a whole set of the most relevant corporate elements that have an impact on value creation in the short, medium, and long term. (IR16)

Moreover, in IR, Alpha's managers recognised a solution to their systematisation and communication problems that other tools could not address:

> The Integrated Report allows Alpha to coherently and with a structure – but also clearly and briefly – represent, evaluate, and systematically check all corporate actions, resources (even those of an intangible nature) and results. These actions, resources and results play a relevant, competitive and efficient role for an organisation, and they cannot find a systematic, analytic and documentary correspondence in the traditional parameters, nor the measuring activity and the accounting. (IR16)

> The qualifying element of the Integrated Report is information connectivity that normally belongs to different spheres of reporting (economical-financial, Intellectual Capital, sustainability). This document aims at connecting the most significant financial data with the nonfinancial data in light of the pursued strategies. What derives from this connection is a better expression of the future and the company's present value creation. (IR16)

5.6 Outcome: Alpha's management control systems, integrated reporting and integrated thinking (2017–onwards)

IR was considered an excellent way to think about strategy, risk management and diffuse strategic thinking throughout the organisation's layers:

> IR positively influences the risk management system. It makes all the business dimensions and connections for value creation evident and allows us to pinpoint the critical issues for managing the company and the influencing variables. (IR18)

> Before, there was involvement, but we discussed topics in a fragmented way. [With IR], strategic thinking is possible with people who generally would not participate in strategic thinking. (IN, CEO)

For Alpha, IR promotes a more strategic and holistic view of the company because it interlinks with Alpha's other MA practices. Thus, the different MA practices are like *jigsaw puzzle pieces*, and IR is like the picture on top of the puzzle box showing the finished picture:

> When this [reorganisation] process somehow ended, the IR framework popped up. So, we reasoned about describing what is inside the business because it helps communicate how the company creates value and its linkages with the local community. (IN, CFO)

> [In the reports], everyone can find their indicator, which they've calculated and monitored during the year. They find it in a trustworthy and straightforward manner. (IN, CEO)

> The linkage between the strategic and operative dimensions from an Integrated Thinking perspective is also shown through the Balanced Scorecard and its corresponding strategic map. (IR17)

IR's ability to frame and communicate the value creation process originating from the enacted practices and to connect the different pieces of financial and non-financial information scattered in the organisation is what Alpha's managers considered a favourable outcome:

> The Integrated Report is a tool that links and coordinates these perspectives to pursue organisational goals in all forms. Moreover, it allows the valuation of intangible capital to support a more comprehensive assessment of the organisation's value and enables informed growth and development strategies for all the stakeholders: employees, management, customers, suppliers, the local community, and shareholders as the engine of medium- and long-term value creation strategies. (IR18)

> The IR journey started in 2016 and continued in 2017 and 2018, reflecting the Company's commitment to making its value creation story known and giving a clearer and more exhaustive multi-capital interpretation than traditional reporting instruments. (IR18)

> Since 2017, Alpha has issued an Integrated Report to communicate to every stakeholder the business context, an analysis of economic, social, and environmental aspects, and an analysis of risks and opportunities. (ED19)

5.7 Reflecting on the outcome (2019–onwards)

The reflection phase is the most abstract of the framework's seven elements (Makri and Blandford, 2012). For example, Alpha's managers did not sit down to reflect at a certain point, nor was there a "reflection session" while gathering data for this study. Rather, we had to draw out their reflections from the dialogue.

The reflection phase is a moment to examine the serendipitous process's positive outcomes (if any). Alpha's managers identified many positive impacts of their lucky accidents, including better engagement and dialogue, improved operational control and strategic thinking.

They see strategic thinking and operational control as a consequence of their desire to run a profitable business:

> This system does add value. Not only economic value but also manages risks and creates the possibility of not harming the company. In 2008/2009, we lost €4 million, and in 2011 the Libyan War started, and many companies like us ceased to exist. (IN, CEO)

Internal meetings and IR helped Alpha to achieve better engagement and dialogue. They see these as very helpful for selecting, monitoring and discussing indicators, as well as soliciting ideas to improve company performance:

> Once you have involved the employees, you have communicated their indicators and targets, and you have shared these with them, meaning "is it feasible? Is it not? What do you think about it? etc." they carry out their job, and they calculate the indicator. They consider the issue if they do not meet the target or see that the indicator is worsening. So, they start acting to get back on track and eventually meet the target. (FV, CEO).

IR is also a tool and a practice that allows Alpha to systematise, organise and disseminate the different pieces of their management control puzzle:

> We connected and embedded these [management] systems in the reports through strategic and integrated thinking. (FV, CEO)

> For us, the integrated reports have been a systematisation, an assembly of everything we have done up to that point. [. . .] (IN, CEO)

> For each point you read in the report, you will find a corresponding element in Alpha's internal management system. [. . .] IR is an internal instrument for participation in the strategy. (IN, CFO)

Internal meetings and IR were the preferred methods for fostering engagement and dialogue. Managers do not see them as superior, but they can link with and become embedded in other relevant practices. Thus, through internal meetings and IR, Alpha's top management found a way to crystalise and integrate the different pieces of MA practices and systems.

6. Discussion: informal controls, serendipity and change

The empirical evidence gathered from the case study fleshes out the bones of our serendipitous drift framework. The evidence also answers our research question of how entrepreneurs can leverage informal controls to shape change.

6.1 Informal controls and management accounting change

At Alpha, MA change was a consequence of management control changes. The set of values and beliefs named by Alpha's managers, i.e. *integrated thinking* and *humanistic* *management*, were the basis of Alpha's informal cultural controls. Such informal controls steered the organisation towards networking and experimentation and provided a compass to understand whether an MA practice could be useful. Moreover, informal controls also helped to translate and enact MA practices, such as IR and the Balanced Scorecard, to address Alpha's needs better (Lavia Lopez and Hiebl, 2015). These informal controls did not prescribe a predetermined course of action. Instead, they provided a term of reference against which to recognise the potential usefulness of an MA practice (Dumay and Dai, 2017; Merchant and Van der Stede, 2017).

For Alpha, informal controls fulfil a role like research targeting, as setting a target to steer the research process still allows for Mertonian and Walpolian serendipity to occur (Yaqub, 2018). Alpha's use of informal controls guided its networking and experimentation towards addressing needs, allowing unexpected practices to emerge. Therefore, targeting a search towards specific goals does not hinder "happy accidents", as chance is still allowed to flow into the change process. On the contrary, targeting the search may steer the change process towards desirable outcomes.

The relevance of top management's role did not stop at their sagacity to understand the usefulness of new practices or reflect on the changes made. Above all, it was paramount for Alpha's top management and the CEO to push and drive the change. This finding confirms that top management fulfils a crucial role in change processes (Dumay and Dai, 2017; Adams and McNicholas, 2007; Barnes, 2002). At Alpha, the managers' backgrounds, beliefs and values led them to search for new practices to help them bridge the gap between how the company had been running and how they wanted to run it from a business and cultural perspective. Similar to Akroyd and Kober's (2020) findings on the blueprints created by company founders, the personal traits of these executives, their willingness to reach out to networks and experiment with different practices, was how they found and chose which practices to implement.

6.2 Serendipity and change

Introducing serendipity as an element of MA change builds on several prior studies of accounting drift (Quattrone and Hopper, 2001; Andon *et al.*, 2007; Busco *et al.*, 2007). Serendipity allows for moving beyond the planned and ordered concept of MA change without giving up the role of actors in shaping such a change. Indeed, Alpha's MA change reflects all three serendipity characteristics: search, sagacity and chance (Dew, 2009; McCay-Peet and Toms, 2015).

Firstly, the actors were searching for something to address Alpha's needs. The search materialised into a deliberate quest by top management for new practices outside the company's boundaries. The search itself was messy and did not follow a predetermined path. The search, unsurprisingly, had trials, errors, iterations and enaction (Andon *et al.*, 2007; Yaqub, 2018) because Alpha had vaguely defined triggers that only became apparent during the reflection phase (Makri and Blandford, 2012). The concerted search to solve a problem at hand or a later problem places the Alpha case somewhere between Walpolian and Mertonian serendipity (Yaqub, 2018). By leveraging the required cultural, organisational and discursive resources, these powerful actors pushed for changes to meet their objectives (Battilana *et al.*, 2009; Bernardi, 2020).

Secondly, the managers' sagacity and willingness to expand their knowledge allowed them to learn new practices and recognise their potential value. For example, their involvement with the Business Reporting Network provided the mental sparkle to understand IR and acknowledge its potential value (Makri and Blandford, 2012; McCay-Peet and Toms, 2015; Brinckmann *et al.*, 2019). Similarly, allowing a master's student to research the Balanced Scorecard inside Alpha helped top management recognise its value and combine it with their IR program (Massingham *et al.*, 2019). Moreover, Alpha's top management, especially the CEO, seemed to have the personal attributes that Heinström (2006) and Merton and Barber (2004) consider to enhance the likelihood of serendipitous connections. Managers' sagacity and willingness to expand their knowledge provided additional organisational and managerial capabilities for managing the complexity deriving from external crises (Garengo and Bernardi, 2007).

The third characteristic is chance. The role of chance and unexpectedness are embedded in the search process and networks (Yaqub, 2018; Hadid and Al-Sayed, 2021). Had Alpha not engaged with universities, it may have never discovered the Balanced Scorecard. Had the managers not participated in the Business Reporting Network, they may have never become aware of IR's existence. Had Alpha not experimented with IR, it may have never started to monitor employees', customers', suppliers' and financial institutions' satisfaction. Such examples show that the unexpected routes and discoveries through which Alpha's tried to solve its needs were not a consequence of randomness alone. Instead, the managers harnessed the power of chance by networking and a personal predisposition to testing new solutions (Merton and Barber, 2004).

7. Conclusion

7.1 Theoretical and practical contributions

The serendipitous drift framework constitutes the main contribution of our research, and it was the result of serendipitous discovery, too. As we searched for a framework for understanding how and why Alpha adopted IR alongside other MA practices, we chanced upon serendipity and drifting theories (Yaqub, 2018; Quattrone and Hopper, 2001). These theories effectively assisted us in providing a nuanced account of Alpha's MA change. Moreover, we were *sagacious* enough to see potential in drifting and serendipity for gleaning new insight into the broader debate on MA change. Therefore, the serendipitous framework sketched out in Section 3 and fleshed out through middle-range thinking in Section 5 can be considered the theoretical generalisation that develops "theoretical insights that extend beyond the boundaries of the original study" (Parker and Northcott, 2016, p. 1119).

Our serendipitous drift framework addresses a gap between research that sees MA change as a planned, ordered process versus those that see it as an unmanageable drift (Burnes, 2004; Hopper and Bui, 2016). Even if the change is characterised by messiness and unexpectedness, there is room for managers to steer change towards favourable outcomes. Setting a tone at the top and informal management controls to frame the search, reaching out to networks and experimenting with new knowledge are the first steps to providing the necessary flexibility and direction to harness the power of chance and shape the messiness of change. Like drifting, the seven bones in the serendipitous drift framework draw on the unexpectedness of change. Beyond drifting, the framework maintains that people can steer change and harness the power of chance.

We believe that the implications of our research are timely and relevant. As the COVID-19 pandemic ravages our lives, economies and businesses, we are all living in a time of radical uncertainty (Kay and King, 2020). Suppose traditional uncertainty postulates that we cannot attach probabilities to certain events. In that case, *radical* uncertainty maintains that we do not even know what events might happen. Some events are unlikely and unimaginable (Kay and King, 2020). Serendipity may offer a point of departure to profit from uncertainty by leveraging drift and sagacity. And, as in Alpha's case, serendipity can be pursued systematically.

We are also aware that serendipity is not a miraculous panacea. Managers who search for solutions and are sagacious are not guaranteed to discover something valuable.

However, without search and sagacity, there is no serendipity (Dew, 2009). Searching for something and possessing the prepared mind to recognise and value discovery are necessary, though not sufficient, conditions for profiting from unexpected events. Eureka moments and discoveries seldom randomly happen since they rely on a purposeful effort (Yaqub, 2018). Therefore, applying the serendipity framework in practice requires organisations to reach out to networks that can expose them to new knowledge and requires them to experiment with practices.

7.2 Limitations

Our research comes with limits that open paths for future research. Firstly, additional fine-tuning is needed as the proposed serendipitous drift framework is new in the MA and management control landscape. The use of a middle-range thinking approach allows us to go back and forth between the serendipitous drift framework we developed from the literature beyond MA and the empirical material collected in the case study. Our research opens an interesting use for serendipity in MA research and practice. Further research is needed to explore the framework opening up such a path even more with additional longitudinal multi-case studies refining the framework.

Secondly, the chosen setting for our research comes with strengths and limitations. Choosing an SME allowed us to rule out some of the complexity in larger organisations regarding power relations, hierarchy and operations. However, additional research is needed to understand whether our findings are peculiar to this subject's context or hold in more complex organisations.

Finally, we acknowledge a subjective view of what is meant by *desirable* change in Alpha. As it emerged in the reflection phase, Alpha's managers described the serendipitous outcome as positive because of Alpha's ability to stay in the market and not go bankrupt. One is left wondering what would have happened if top management had pursued types of needs different from those we identified in Alpha's case or if they had not relied on serendipity. We call for research using a multi-case study design and quantitative analysis to understand whether pursuing serendipity leads to positive outcomes irrespectively from an organisation's strategy.

Note

1. In Italian law, a benefit corporation ("società benefit") is an organisation that, in addition to distributing dividends, "pursues one or more common benefit and operates responsibly, sustainably, and transparently towards people, communities, the environment, cultural and social goods, associations, institutions, and other stakeholders" (L. 208/2015, cc. 376-384, translated from Italian by the authors).

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