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Performative Work: Bridging Performativity and Institutional Theory in the Responsible Investment Field[1]

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Abstract

Callon's performativity thesis has illuminated how economic theories and calculative devices shape markets, but has been challenged for its neglect of the organizational, institutional and political context. Our seven-year qualitative study of a large financial data company found that the company's initial attempt to change the responsible investment field through a performative approach failed because of the constraints posed by field practices and organizational norms on the design of the calculative device. However, the company was subsequently able to put in place another form of performativity by attending to the normative and regulative associations of the device. We theorize this route to performativity by proposing the concept of *performative work*, which designates the necessary institutional work to enable translation and the subsequent adoption of the device. We conclude by considering the implications of performative work for the performativity and the institutional work literatures.

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Performativity and Institutional Work in Responsible Investment

The performativity thesis developed by Callon (1998) and MacKenzie and Millo (2003) has prompted an important but unresolved debate among sociologists and management scholars (Fourcade, 2007; J.-P. Gond, Cabantous, Harding & Learmonth, 2015). At the core of performativity lies the hypothesis that statements by economists or other social scientists are not 'outside the world(s) to which they refer', but 'actively engaged in the constitution of the reality that they describe' (Callon, 2007, p. 318). By privileging the role of theories and material devices over established social forces such as institutions, norms or social relations, performativity provided an original account of markets and the role of economists in them (Ferraro, Pfeffer & Sutton, 2005). Yet the theory has also met with resistance: academic critics in institutional theory and elsewhere have faulted performativity for ignoring the organizational, institutional, and political context (Fligstein & Goldstein, 2010; Mirowski & Nik-Khah, 2007) and for not laying out clear scope conditions for its applicability (Felin & Foss, 2009; Zuckerman, 2012). The theory's proponents have subsequently provided a broader account of performativity, including the role of public policy and organizational forces (Callon, 2008; Millo & MacKenzie, 2009). Yet these proponents did not relate their contributions back to the original critiques, leaving unaddressed the concern that organizational and institutional processes are being neglected.

The present study aims at addressing such gap by bringing back the concept of *translation* to explore the micro-politics in the design, promotion and successful use of calculative devices (Cabantous & Gond, 2011; Callon, 1986; Giamporcaro & Gond, 2016; Latour, 1987). Translation, or the process of getting potential allies interested and then controlled (Akrich, Callon & Latour, 2002a, 2002b; Callon & Latour, 1981), was a central building block of the theoretical predecessor of performativity, Actor-Network Theory. Performativity gained scholarly attention for the remarkable ability it accorded to material

devices in the reshaping of markets, but this attention was partly achieved by underemphasizing the micro-politics that characterize the work of the *performateur*, that is, translation, and privileging instead the role played by material tools.

By bringing back translation to the study of calculative devices, scholars may be able to better incorporate the micro-political into performativity. Doing so also opens up new possibilities to establish a theoretical bridge with institutional theory, as performativity can contribute to our understanding of how institutions, defined as the "cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior" (Scott, 1995: 33) are created, maintained, and disrupted. The purposeful activity of actors in this process is the focus of the literature on institutional work (Lawrence & Suddaby, 2006; Lawrence, Suddaby, & Leca, 2009). Building on it, we bring together performativity's focus on materiality with institutional work's attention to normative and regulative structures.

Our study advances this agenda with an examination of the efforts exhibited by a large financial data company in the responsible investment field. Our research site, Visual Markets (a pseudonym), is a US-based leading provider of financial data and technology with a vast installed base of users. Founded three decades ago, Visual gives users access to real-time financial information and it is part of their "infrastructure for calculability" (Cabantous & Gond, 2011) of financial markets. Visual's unique formula turned the company into a global giant, mirroring the expansion of the capital markets over the past decades.

Starting in 2008, Visual Markets developed a calculative device aimed at promoting a new investment practice, environmental, social and governance (ESG) integration, in the responsible investment field. This "issue field" (Hoffman, 1999; Zietsma, Groenewegen, Logue & Hinings, 2017) brought together a diverse set of actors (asset owners, social movements, investment managers, banks, data providers, regulators, and government) around the goal of integrating ESG factors in the financial investment process (Cowton 1994;

Giamporcaro & Gond 2016, Louche & Lydenberg, 2010; Gond & Boxenbaum 2013). Using a qualitative research design, we followed the company's efforts to launch and promote this device for seven years (2008-2015) and examined its initial plan, results, and changes in strategy. Our key empirical finding centers on a shift in strategy that took place in response to lower-than-expected sales. The new strategy centered on aligning Visual's product within other units of the organization, connecting it with the customers, and promoting the responsible investment field through NGOs and regulatory influence.

Our study contributes to the theory of performativity by bringing to the fore the micro-political dynamics of market change through calculative devices. First, by presenting the effectiveness of performativity as successful translation, our study shows that in issue fields, exclusive reliance on calculative devices for performative projects face normative resistance and prove ineffective. Second, our study points to an alternative route to performativity, namely one based on both institutional and material associations. We refer to this approach as *performative work,* and show how such concept can address some of the concerns raised by critics of performativity and contribute to the literature on institutional work.

Bringing Back Translation in Performativity

As originally formulated by Callon (1998), the performativity thesis provided a novel and powerful account of how calculative devices shape economic actors and markets. Callon argued that, "economics, in the broad sense of the term (…) shapes and formats the economy, rather than observing how it functions" (Callon, 1998, p. 2). Performativity thus posits that markets are shaped by calculative devices (Callon & Muniesa, 2005), where economic activity is shaped by economic theories that influence the design of calculative tools and then shape economic action. The potential of the performativity thesis is best illustrated by the seminal work of MacKenzie and Millo (2003), who showed that whereas the Black-Scholes

equation did not initially describe option prices with accuracy, its subsequent adoption by floor brokers produced a gradual convergence between the formula's predictions and actual prices.

Performativity, however, has met with vigorous resistance. Institutional theorists, economics historians, and critical management scholars faulted performativity scholars for losing sight of the political and normative forest in which financial models are developed and used (Fligstein, 2010; Mirowski & Nik-Khah, 2007; Whittle & Spicer, 2008). As Mirowski and Nik-Khah (2007, p. 217) wrote, "too much concentration on machine metaphors tends to distract critical attention from some of the most important processes going on underneath."

It is ironic, however, that performativity would be criticized for not confronting the question of power[2]. Its founder, Callon (1998), presents performativity a continuation of a prior intellectual project developed with Bruno Latour, Actor-Network Theory (ANT), which addressed the role of power in the constitution of science and society at large (Callon & Latour, 1981). "No one," Latour (1990, p. 159) wrote in his analysis of Hobbes' *Leviathan*, "has yet deconstructed his [Hobbes'] vocabulary of power, society, group, calculation of interests and sovereignty." Latour claimed this intellectual space for ANT. Similarly, Latour often referred to the strategies he documented as "Machiavellian," that is, concerned with power. Furthermore, a whole stream of ANT, sometimes referred to as "ANT and After," (Law and Hassard 1999), directly addressed the question of power and planted the seeds for a form of critical performativity (Alcadipani & Hassard, 2010; Spicer, Alvesson & Karreman, 2009) that explores how alternative organizational arrangements can be performed within a capitalist economy (Leca, Gond & Barin Cruz, 2014). Why, then, the charge that performativity ignores politics? One potential reason might have been the conflation of the Callon-MacKenzie approach to performativity with other approaches (Austin, 1962; Butler,

[2] Cabantous and Gond (2015), in a footnote, also found these critiques surprising.

1990; Lyotard, 1984) that share with it little more than the name (see Gond et al., 2015 for review of these). We suggest that the role of politics in reshaping markets may have been obscured by the bracketing of much of the analytical power of ANT under terms such as assemblage (Latour, 2005), socio-technical *agencements* (Callon, 2007), and market *agencements* (Çalışkan & Callon, 2010; Callon, 2016). Assemblage refers to the association of heterogeneous (human and non-human) entities that need to come together for performativity to occur (Latour, 2005, p. 2). *Agencement,* emphasizes the lack of a divide between human agents and the objects that have been arranged, and its agentic properties (Callon, 2007, p. 320). From the perspective of any of the actors involved, the process of putting together an assemblage is translation, but Callon bracketed this work under the term *agencement*.

One example of such bracketing is given by MacKenzie and Millo's (2003) original study of Black-Scholes. The piece left unexplained the crucial question of why would traders adopt an inaccurate model; in a follow-up piece to their seminal analysis, however, Millo and MacKenzie's (2009) revealed the translation work that undergird the adoption of Black Scholes. Traders did not simply take up Black-Scholes' for its elegance and rigor; the widespread adoption of Black-Scholes took place in parallel with the diffusion of new risk management tools (2009, p. 638), and which necessitated the use of Black-Scholes: the banks that wanted to refine their risk management methodology simply needed to adopt Black-Scholes. The contrast between the MacKenzie and Millo (2003) and Millo and MacKenzie (2009) brings to the fore the need to account for translation, for only by doing so can scholars bring back micro-politics in the study of market devices and reveal the forces behind the success of the calculative device.

Given the above, what do Actor-Network scholars precisely mean by "translation"? In their foundational paper, Callon and Latour (1981) introduce the term as "all the negotiations,

intrigues, calculations, acts of persuasion and violence thanks to which an actor or force takes (…) authority to speak or act on behalf of another actor" (Callon & Latour, 1981, p. 279). For instance, Callon and Latour (1981) show that engineers at Electricité de France (EDF) justified their proposal for the development of a new electric car by speaking on behalf of cities and the public: "the project conjectured not only that the techno-scientific problems could be overcome but also that French social structure would change radically" (Callon, 1987, p. 84). Subsequently, Law and Callon (1988) later referred to these designers as "engineers-sociologists" for their ability to mix in their argument social trends and technical factors.

But what makes a translation effort effective? Callon (1987) emphasized several elements. First, the strength of the resulting actor-network hinges on the durability of its associations, which in turn depends on the durability of its individual points and connections. Second, this durability can be enhanced by turning the assemblage into a simplified *black box* that reduces the complexity of the elements in it. Third, such black boxing is only possible to the extent that it is supported by other entities in the actor-network, a process that Callon refers to as *juxtaposition*.

Latour (1987) extended the material dimension of translation further by proposing that translation can be secured by assembling all the various elements into a physical artifact or machine: "the simplest means of transforming the juxtaposed set of allies into a whole that acts as one," he wrote, "is to assemble forces to one another, that is, to build a machine" (Latour 1987, p. 131). Making material the associations between the various elements addresses a key problem of the engineer, namely, "to *control [the allies'] behavior* in order to make their actions predictable" (Latour, 1987, p. 108; emphasis added).

In sum, the essence of translation is getting potential allies interested, and then controlled. Latour emphasized that he used the word translation not only for its linguistic

meaning but also for its political one, stating that translation moved interests *and* people, as "translating interests means at once offering a new interpretation of these interests and channeling people in different directions" (Latour, 1987, p. 117). This political meaning of translation, however, has received much less scholarly attention than the semiotic one (the process of translating words and meaning from one language/ context to another). Influenced by the Scandinavian school of institutionalism (Czarniawska & Sevón, 1996) researchers have favored the semiotic meaning of translation, studying the local adaptation of practices as they travel across contexts and geographic boundaries (Ansari, Fiss & Zajac, 2010; Boxenbaum & Battilana, 2005; Gond & Boxenbaum, 2013; Sahlin & Wedlin, 2008, see Waeraas & Nielsen 2016 for a review of the different streams of translation research). To advance our understanding of performativity, and counter the criticism of neglecting power, we suggest refocusing our attention on the political meaning of translation and the strategies that performateurs employ in the process.

The above has important implications for the analysis of markets. As Actor-Network Theory evolved into the performativity literature, the explicit focus on the micro-politics of association described above disappeared from the foreground. Having established the power conferred by a material black box that *enrolls* and controls the interests of those who can determine its success, Callon (1998) went on to consider what would happen if that black box were not an engine, a car, or another mechanical device, but instead a tool in the hands of a market actor. Economic calculation, he argued, is a practice, and as such it requires tools; by using a black box for the purpose of calculating in markets, economic actors may end up reconstituting the market in line with the ideas that informed the black box, typically arising from economics. Callon's focus thus shifted from the engineer-sociologist to the creator of the calculative device, namely, the *economist-performateur*, which for Callon is not limited to academic economists, but to any economic actor.

Given the importance of politics in the performative processes, we see important opportunities to establish theoretical connections between performativity and institutional theory. Institutional theorists have also grappled with the question of how market institutions are constituted (Fligstein, 1996; Fligstein & Mara-Drita, 1996) and change (Lawrence & Suddaby, 2006; Lounsbury & Hirsch, 2010), but despite notable encouragement (Fourcade, 2007; Lounsbury, 2008; Powell & Colyvas, 2008) there has been little attempt to reconcile this literature with insights from performativity and the construction of calculative infrastructure in markets. Déjean, Gond, and Leca (2004) is the most notable exception, as they showed how the construction of the calculative infrastructure of socially responsible investment in France legitimated the industry and contributed to establishing the institutional entrepreneur (the ARESE rating agency), thus bridging the two processes. However, their focus was on calculability rather than its performative effects. Beyond the context of financial markets, institutional theory has long recognized the fact that the cognitive, normative and symbolic components of institutions can be instantiated in material practices and artifacts (Friedland & Alford, 1991), but with few exception (Gawer & Phillips, 2013; Hargadon & Douglas, 2001; Jones & Massa, 2013), most research on materiality has focused on practices rather than artifacts (Jones, Boxenbaum & Anthony, 2013).

In this paper we propose a path to reconcile these literatures, drawing on the literature on institutional work (Lawrence & Suddaby, 2006). Proponents of institutional work are concerned with "purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions" (Lawrence & Suddaby, 2006, p. 215). As such, it provides a complementary perspective to performativity and its emphasis on models, formulae and material devices. Furthermore, the literature on institutional work has been paying increasing attention to power (Currie, Lockett, Finn, Martin & Waring, 2012; Lawrence, Leca & Zilber, 2013; Rojas, 2010). For instance, studying the institutionalization

of management fashions, Perkman and Spicer (2008) define political work as that which "involves influencing the development of rules, property rights and boundaries in the attempt to anchor an institution within the wider social system" (Perkmann & Spicer, 2008: 817). Similarly, in their study of how the FTSE4Good index emerged as a standard for socially responsible corporate behavior, Slager, Gond and Moon (2012) highlighted the regulatory power of standard-setting actors.

One limitation of the institutional work literature, however, is that despite its initial emphasis on "reflective purposefulness", most of the empirical research has been historical and retrospective, thus methodologically unfit to capture empirically, and advance, our understanding of the multiple dimensions of agency entailed in the process. Building on Emirbayer and Mische (1988), Battilana and Aunno (2009) suggested that intentionality in institutional work should be interpreted as a multidimensional construct, comprising iterative (past-oriented), projective (future-oriented), and practical-evaluative (present-oriented) dimensions, and speculated that each dimension might dominate in specific forms of institutional work or stage of the institutionalization process. However, with the exception of Raviola and Norbäck (2013), the different dimensions of agency have been understudied. The performativity literature, we would add, provides a theoretical language to extend our understanding of reflective purposefulness and how material devices fit in this process.

In sum, unpacking the genealogy of performativity in actor-network theory reveals the central role of translation and the ways in which this process was bracketed as the literature moved to performativity. Bringing translation back to performativity, we contend, can restore its micro-political dimension and give voice to the actors' theorizing in the process, that is, bring up their plans, schemes and allies, as well as their enemies. These considerations, however, prompt the following question: how does translation take place in financial markets? More specifically, how is it constrained by institutional factors, and what is the role

of institutional work in the process?

Methods

Our study comprises a seven-year qualitative study of product development at Visual Markets (2008-2015), complemented with an interview-based study of the responsible investment field. Given its preeminent position in the financial sector and the large resources it commands, the initial failure of Visual's product to meet its sales target was "revelatory" (Yin, 2009) of the challenges entailed in translation and performativity. Furthermore, as "individual organizations are important venues for institutional work" (Kraatz, 2009, p. 84), our access to Visual gave us a unique opportunity to follow actors as they engaged the coalface of institutions (Barley, 2008). Finally, it is key to emphasize the embedded longitudinal nature of our research design, with four levels of observation: field, practices, organization, and device (See Figure 1 for a timeline with the key events). The long observation window, and the ethnographic nature of our study, enables us to understand the performative process in real-time, and from the actors' perspective, a rare feat opportunity in both the performativity and the institutional work literature (Lawrence et al., 2013)

--- Insert Figure 1 here ---

The events we describe at Visual Markets need to be understood within the wider context of a shift in the field of responsible investment. Responsible investment can be defined as "an approach to investing that aims to incorporate environmental, social and governance (ESG) factors into investment decisions, to better manage risk and generate sustainable, long-term returns" (PRI, 2016). This definition, which emphasizes the integration of ESG factors, emerged only gradually and starting in 2005 (Dumas & Louche, 2016), but built on decades-long development of various practices that were usually referred to as Socially Responsible Investing (SRI) (Cowton, 1994; Louche, 2004; Gond and Boxenbaum,

2013), and which included "engagement with corporate management, investments that benefit underserved communities, and the setting of social and environmental standards in selecting investments" (Lydenberg, 2007, p. 467). In the context of responsible investment, SRI has traditionally centered around a portfolio approach, and been based on the practice of *negative screening*, that is, the exclusion of stocks that failed to conform to certain values. SRI had been practiced for years, but remained a relatively limited investment activity in the US despite years of promotion by its practitioners (Arjaliès, 2010; Déjean et al., 2004; Guyatt, 2006; Waddock, 2008). While other investment practices, such as *positive screening*, were already actively used in the 1990s, by 2005 in the United States the Social Investment Forum reports that 73% of SRI assets under management (AUM) were still negatively screened.

By contrast, *ESG investing* was introduced as the "mainstream," alternative to traditional SRI (Dumas & Louche, 2016: 432) and promoted by various groups including (though by no means exclusively) the United Nations Environment Programme Finance Initiative and the Principles for Responsible Investing (PRI) (a coalition of asset owners who signed a commitment to invest responsibly; see Avetisyan & Ferrary, 2013). As Dumas and Louche (2016, p. 440) point out, with the introduction of ESG "the focus (…) shifts to climate change." Furthermore, ESG "is also characterized by the combination of RI and corporate governance, which were so far treated separately." In addition, ESG placed a greater emphasis on financial performance, albeit with a more long-term focus than mainstream investment (Amaeshi, 2010). The core practice of ESG investing became so-called ESG integration, which asset managers could interpret and practice in different ways. To succeed in this broadening of the investor base, however, some of the reservations voiced by mainstream investors about data on social and environmental performance had to be addressed, including the uneven quality of data, greater need for comparability, and

transparency (Dumas & Louche, 2016, p. 447). By 2008, a survey conducted by Axa Investment Managers of FTfm readers concluded that ESG was the term most used by investors to refer to responsible investment, while SRI only ranked 4th (Financial Times, 2008)[3]. The emergence of ESG was therefore an opportunity for Visual Markets, as the company had built a perception of objectivity among Wall Street investors by avoiding subjective qualitative assessments such as ratings and company research, especially on listed companies that were its own clients such as Wall Street banks.

Data

We draw upon four sources of data – interviews, observation, conferences, and archival material – to understand the process of development of the ESG Product at Visual Markets and its influence on institutional change in the field of responsible investment.

Interviews. We conducted two sets of interviews aimed respectively at understanding the institutional field and the technological product. The first set included 41 interviews with responsible investors and the companies that served them, primarily across New York and London, but also in Boston, Paris and Amsterdam. These took place from December 2007 to August 2015. We interviewed a diverse group of individuals including executives, fund managers, journalists, activists and academics. Our second set of interviews took place at Visual Markets. We conducted 35 interviews with 16 different respondents and interviewed every member of the ESG Product team with the exception of the ones based in Tokyo and Hong Kong, and in most cases we conducted multiple interviews with each participant. We conducted 15 interviews with the leader of the project, and benefited from additional

[3] Over the years, various attempts at keeping the label SRI have been explored but many of them underscore the trend towards ESG we describe. Starting from their 2008 report, EUROSIF kept using the term "SRI" but changed its meaning to "Sustainable and Responsible Investment." (EUROSIF, 2009). In their 2014 report, USSIF suggested a twist to the term, which now meant "sustainable, responsible and impact investing (SRI)" (USSIF, 2015).

occasions from informal interaction at public events. We also invited the project leader as a guest speaker to our respective universities for a combined total of six times, and observed the presentation of the project across a variety of audiences. Only a few of our interviews entailed Visual's users, as our goal was to understand the limited adoption of Visual's ESG Product.

Observation. We visited Visual's premises 34 times in all three locations. During these visits, ESG team members explained us how they were going about their work, and on three occasions we spent the entire day with the team. In addition to the observation, we negotiated access to the weekly conference calls that the team held to coordinate activity. Both authors attended by dialing-in like one more participant, taking notes on the discussions. After the call we would exchange notes to clarify doubts and confront our interpretations of what we had heard. We participated in a total of 16 calls, totaling almost 40 hours of meetings in the period 2009-2011, which is when the design team was making the key decisions.

Archival material. We collected and organized a database of documents, both public and proprietary, totaling more than 500 pages. We had access to key proprietary sources of information on the ESG Product, including the original business plan of the product, which we analyzed to understand the assumptions behind it, in line with Callon and Latour (1981). Second, we obtained company data on the usage of the product once it was launched, which allowed us to track success. Finally, we gained access to the PowerPoint presentations used internally by its leader to request funds for the project. In ANT terms, the business plan and PowerPoint presentations allowed us to follow the actors (Latour, 1986) as they established associations and drew on heterogeneous elements, juxtaposed and attempted to create black boxes.

Analysis

Building on the rich variety of data sources just described, we moved iteratively between the data and the themes we generated in our theorizing (Diesing, 1971; Locke, 2001; Lofland & Lofland, 1995). We started by discussing interviews and observations soon after we had conducted them. Our discussions were captured in memoranda, and these memos were the foundation of the emerging themes we aimed to refine in our fieldwork (Diesing, 1971; Lofland & Lofland, 1995). In these memos we started by using the participants' own conceptualization, and the memos became the backbone of our theorizing. In this process we linked the local themes emerging from the field with the extant literature (Glaser & Strauss, 1967; Locke, 2001). Following the practice of theoretical sampling, we sought additional evidence to determine the extent of empirical support for the emerging themes, and triangulated across multiple sources of data. Also, our interviews with most of Visual's key competitors helped us balance the internal narrative of the project with the changes in the field. As the analysis proceeded we also prepared a timeline where we mapped (Langley, 1999) key events at four levels: the field, the practices, the organization, and the device (Figure 1).

Our empirical analysis relies on three comparisons to identify key events and draw associations between them (Glaser & Strauss, 1967). The first is between the business plan laid out by Charles in 2008 and actual events. The business plan revealed Charles' rhetoric and proposed associations, especially the role of self-fulfilling prophecies; it provided clear metrics to independently assess success or failure; and an empirical reading of competitors and the field at large.

Second, we compared Visual's first and second attempt at advancing responsible investment. While the first attempt relied on the calculative device, the second one relied primarily on institutional work. Our comparison between the two allowed us to better

understand the role of tools and the micro-politics of institutional change in markets. Our third comparison, although not as developed as the first two, relates Visual with its two main competitors, Merger 2 and Merger 3. The comparison suggests that Visual's failure to grow sales of its ESG Product was due to its lack of ESG ratings and not due to other variables such as the financial crisis or the underdevelopment of the ESG field. Indeed, these factors also affected Merger 2 and Merger 3, yet their sales performed well. Such comparison helped us attribute Visual's notable improvement in the rankings of ESG data providers between 2012 and 2014 to the main changes that took place between those dates, namely, the introduction of third-party ratings, and of a new product manager.

Performing responsible investment at Visual Markets

Visual Market's entry into responsible investment can be structured as three distinct stages (Figure 1). First, starting in 2008 Charles (a pseudonym), an executive at Visual Markets, led the creation of a new calculative device aimed at dominating the market for ESG data, as well as transforming the field of responsible investment. Second, between 2009-12 the ESG team that Charles led faced numerous challenges that reduced its ability to meet the sales objectives. Starting in 2013 however, and until 2015, the team shifted its strategy, abandoning the goal of market transformation and turning instead towards a greater connection with non-governmental organizations that advanced responsible investment, as well as with regulators, with the goal of stimulating compliance-driven demand for Visual's product.

Stage 1, 2008-09: A plan to perform responsible investment

Our first acquaintance with Charles at Visual Markets took place at a panel presentation on responsible investment in April 2008. Charles was working on a plan to integrate sustainability into the data licenses sold by his company. What made the plan remarkable was

the company's user base: with thousands of registered users at banks and brokerage firms, Visual was a giant in the financial data industry, firmly positioned at the core of the world's capital markets. As Charles said: "we have access to the financial community like no other. So I would argue that we have the potential, more than any other company maybe in the world, to change the way we invest in our infrastructure, in our society, in our natural environment."

As Charles saw it, the shift that took place in the responsible investment field in 2008 from an activist-led field to an investment-oriented one opened up an opportunity for Visual Markets. A fast-rising senior manager in his early forties, Charles' professional trajectory straddled activism and corporate finance. Before 2008 Charles had been in charge of "Sustain," a corporate social responsibility initiative at Visual that he had envisioned in 2006 to reduce carbon emissions. "I am," Charles would say, "that annoying guy who tells everybody to print double-sided."

In 2008 Charles built on the legitimacy and visibility of Sustain to launch the ESG project. At the time, a new company President with a strong interest in sustainability had just arrived at Visual, creating potential support. Visual, Charles argued in a formal proposal to Visual's senior management, ought to start providing environmental, social and governance data (ESG) for investors. Charles' presentation not only entailed an impassioned discourse, but also a detailed analysis of the industry, a set of assumptions and projections, and accompanying representations in PowerPoint and Excel documents that we were able to analyze. Based on these, we learned that Charles' case relied on four key elements.

First, the ESG Product advocated by Charles entailed new affordances. Specifically, a *combined search* functionality that would be made possible by the addition of new fields to Visual's original finance database. The ESG data would not only be displayed on the same screen as traditional financial data, but could also be used to define subsets of industries. By

relating financial performance to ESG factors, the fine-grained quantitative approach to decision-making that had traditionally characterized mainstream finance could be brought to bear on ESG investment.

Second, Charles banked on the rise of a *new type of actor* in the market. Charles not only expected customers from existing SRI investors, but from those in ESG, including mainstream asset managers in Wall Street and the City of London; this was important because numerous SRI investors lacked the financial resources to be customers of Visual. Charles was thus relying on the growing presence of executives that combined the practices and methods of capitalism with the values and aspirations of activism. Charles had his own term for these executives: he called them "ESG converts."

Third, Charles expected his plan to shape the actions of yet another set of actors, listed corporations, in a way that would help his cause. Charles expected that the provision of ESG information would unleash *more sustainability reporting* by listed companies. Greater data availability would then encourage the shift to responsible investment, and feed back into even greater disclosure. He explained:

> Of course, the dream being that if we put that data out there, it will inspire those companies. Arguably what you could say is, you know, Competitor A had that data, Competitor B didn't. So therefore Competitor A, if they were considered good performers, got more money. Competitor B goes, Goddammit. Fundamentally, my financials are just as good or better. I need to go ahead and provide this data.

That is, data availability would unleash a virtuous cycle, and lead to a change in the practices among corporations as much as those of investors.

Fourth, Charles expected Visual to co-opt existing rival data vendors in SRI. Charles expected Visual to seize one third of the entire market in ESG data by offering sustainability data in a *less costly* manner, that is, by "commoditizing" the data. Because Visual charged its customers a flat rate for using the PC license, the additional cost of using ESG data for existing customers would be zero. As he put it:

> We are the commodity guys. We will make it cheaper to do that [invest responsibly]. And then, then it becomes a self-fulfilling prophecy, which is what is really exciting to me. Investors will, all things being equal, if they have the information, put their money with the guy who's got good. ESG performance, because it is a proxy for good management. And, why not? It makes you feel better.

In other words, lowering the barriers to responsible investment would make it more likely to be adopted.

The various elements of Charles' plan can be seen as an effort in translation, that is, in aligning the goals of various actors to advance Charles' plan and make Visual the obligatory passage of the responsible investment field. The plan called for reinterpreting the interests and instigating changes in the actions of three sets of actors: *mainstream investors* would now start thinking about social and environmental factors, *responsible investors* would abandon their existing data providers and turn to Visual, and *corporations* would start reporting their social and environmental performance.

Furthermore, Charles plan included (although he was not very explicit about it) a underlying theory of how financial markets work. This was a financialized version of the stakeholder theory (Freeman, 1984). Charles explained to us that,

> The argument is (and I've seen some research on this) the investors will… all things being equal, they have the information – the environmental, social, and governance information – and (…) they will definitely put their money with the guy who's got good… ESG performance, because it is a proxy for good management.

Thus, as used by Charles, the expression "ESG data" implied an instantiation of the stakeholder theory of the firm, suggesting that long-term profitability required addressing the needs of stakeholders (Gond & Nyberg, 2016).

Taken together, the various associations proposed by Charles promised a radical transformation of the field triggered by a market process, the self-fulfilling prophecy. Like the transformation of option prices resulting from the adoption of the Black-Scholes formula documented by MacKenzie and Millo (2003), this self-fulfilling prophecy would confer Charles the power to firmly establish responsibility in financial markets: once the widespread

adoption of the ESG Product made environmental and social factors relevant, investors would have no choice but to adopt the Product, or see the financial performance of their funds suffer.

Charles pitched his plan at Visual Markets in October 2008. The top management of the company quickly agreed to fund the ESG project, although with five million dollars rather than the twenty million that Charles originally asked for. Undeterred, Charles set out to assemble a team that would decide on the format of the data and design the user interface, and do so in a way that would interest mainstream and SRI investors alike. During 2008 and the first half of 2009, Charles met with Wall Street banks and funds in the socially responsible investment community and the view of these investors was taken into great consideration while the perspective of NGOs were not.

However, the precarious position of the ESG team within Visual left the team isolated. The team was led formally by an executive based in Second City, but was de facto managed by Charles, who stayed at the Chairman's office in Headquarter City. The day-to-day operations were supervised by Dimitris, a middle manager from a suburban Data Center location. Dimitris was in charge of two junior employees located on the same site, Pietra and Takumi, and two others elsewhere. Pietra was the "resident tree hugger" at Visual, and Takumi hoped that working in the ESG Product would enhance his career prospects. The team coordinated with the rest of the company through Charles in weekly conference calls. The entire ESG team, in other words, hung from the dotted line that linked them with Charles and the Chairman's office, forming a tenuous connection with the customer-facing units of Visual.

Despite these structural challenges, the ESG Product was effectively launched in August 2009. The product consisted of 181 data points on environmental, social and governance performance of 2700 publicly listed companies across the world. These data

points included greenhouse gas emissions, water consumption, number of days lost to strikes, etc. It borrowed its selection of variables from those used by the Global Reporting Initiative (GRI), a UN-sponsored non-profit organization that had become the de-facto standard for corporate sustainability reporting (Etzion & Ferraro, 2010). Visual's ESG Product aimed at making the product more attractive to mainstream investors by including only "as reported" data by companies, that is, eschewing the use of so-called "derived data" that other data vendors created by algebraic transformation of other sources when the original data was missing. The ESG Product also avoided subjective ratings that other data vendors were providing. These choices were consistent with Visual's preference for objective, self-reported data, but misaligned with the practices of the investors Charles saw as the potential "ESG converts." In 2009, Charles' promotion to Visual's Chief Sustainability Officer with worldwide responsibilities for various environmental and social initiatives suggested that Visual's top management held the ESG Product as a success.

Stage 2, 2009-12: Challenges in selling the ESG Product

In the three years that followed the launch of the ESG Product, and despite its initial promise, product sales stalled, expectations went unrealized, and plans were quietly adjusted to shield the project from the scrutiny of the rest of the organization. As we describe below, the disappointing performance of the ESG Product during the years 2009-2012 reveals the rigidities that a company might encounter in its attempts to engage in translation.

The first challenge to Visual's product emerged one month after its launch: the SRI data providers experienced dramatic consolidation. This pushed almost every one of the early pioneers in SRI data into the arms of a mainstream financial data provider, suggesting a decisive shift towards the mainstream that appeared to fulfill the shift from SRI to ESG. However, in the following months Charles and his team confronted the failure of the ESG Product to sell. Visual attributed sales to the ESG team when it sold a new license to an ESG

group in a bank or fund. Charles' goal was to sell 130 licenses by the end of 2009 but by year-end the team had only sold fourteen. During the first half of 2010 the team sold 75 units, dramatically short of the 547 units goal. Sales did not appreciably increase during 2011, and the revised sales target for the year, 200 licenses, was not met. Even the number of users of the ESG Product remained low relative to the total installed base: 2,400 unique users in 2009, versus an installed base of several hundred thousand. By 2012 Charles began to admit that results were definitely mixed: "I go back and forth between being excited and depressed," he confided to us.

In accounting for this underperformance, Charles explained that Visual's sales and marketing team, which was in charge of promoting the ESG Product, had "not tried very hard." But we also learnt that budget constraints had played a role. In November 2010 Charles surprised us with what seemed a puzzling decision: instead of submitting a new business plan to the Chairman to gain more resources, as he had originally intended to do, he decided to ask for a much lower level of "stop-gap" resources. By doing so, the request would not be subject to a high degree of scrutiny. The reason for the change was fear of opposition by Bob Allen (pseudonymous), head of the Financial Products unit at Visual. The implication, however, was that there would be fewer resources than expected for the ESG team. Opposition to ESG within Visual was also experienced by Takumi, the junior member of the ESG team. "Many people in Visual don't believe ESG is material. For instance, the equity business. They don't like us."

Another reason for the disappointing sales appeared to be that Visual's ESG Product did not fit the practices of the users. Some leading ESG investors that we interviewed found Visual's tool insufficiently detailed as it was limited to self-reported data. Many other ESG investors did not use Visual because they needed ESG ratings. In fact, numerous SRI investors also relied on the ratings provided by SRI data vendors. Without ratings, as one

noted: “it’s very hard to use [Visual’s] data from an investing point of view.” In most cases investors had only started to experiment with ESG investing, had not yet developed in-house capabilities to use the raw ESG data, and preferred to rely on the judgment developed by specialized SRI data vendors.

The mismatch between Visual’s product and its potential customers is illustrated by the difference in affordances between Visual and its competitors. As Table 1 suggests, Visual was not offering many of the features that its competitors were. While Visual’s product only provided raw ESG data, competitors 2 and 4 provided ratings as numerous portfolio managers demanded. While Visual’s product did not offer “derived data,” its competitors did. Finally, Visual did not provide ESG research, but smaller mainstream vendors such as Competitor 5 or large ESG specialists like Competitor 2 did. The same pattern can be seen in the consolidated ESG data vendors after the mergers. As the right-hand side of Table 3 shows, Merger 1, Merger 2 and Merger 3 offered a far more comprehensive set of affordances than Visual.

------ Insert Table 1 about here -----

Failed translation. The disappointing sales of Visual’s ESG Product during 2009, 2010 and 2011 speak to the difficulties experienced by the ESG team at Visual in translating the interests of its potential users. By failing to offer ESG ratings and limiting the information available on the system to as-reported data, Visual’s product was ignoring the needs of numerous investors. This double limitation sharply reduced the rate of adoption of Visual’s ESG Product. Visual confronted one additional factor that further reduced user adoption: it had failed to enroll its competitors. The merger between the original SRI data providers and mainstream financial data vendors in 2009 prevented the “commoditization” of the ESG data that Charles initially hoped for. Instead of being absorbed by Visual, SRI investors ended up being part of three consolidated, one-stop-shop alternatives to Visual. Furthermore, these did

have the required functionalities for ESG investors.

In sum, the difficulties experienced by Visual during the period 2009-2012 can be summed up as a *failure to translate*. The recognition that the translation, or the process of getting potential allies interested and then controlled, did not adequately take place poses additional questions. Had Charles and his team been unaware of this danger at the time of designing the tool? And if they had, why did they not address it? Our answer to this question points to the limits of translation in the context of institutional change.

The first of these limits highlights the challenges posed by new associations. Visual's ESG Product combined technical affordances aimed at two different groups: on the one hand, financial data for mainstream investors; on the other, ESG data for responsible investors. By combining these two in the same black box, Charles anticipated a powerful juxtaposition: the interests of *both* would be *better* served by virtue of the combination. Yet the juxtaposition did not work, because key executives at Visual, represented by Bob Allen, resisted in introduction of ESG ratings for fear of antagonizing Visual's mainstream customers. The resulting functionality gap, combined with the mergers among competitors, contributed to limit the sales of the Visual's ESG Product.

The second determinant of Visual's failure to translate was an extension of the first. In light of the disappointing sales from 2009 to 2012, Charles was reluctant to expose his tool to the scrutiny of Visual's top managers (including Bob Allen) in a new round of funding. By giving up on the extra funding, the ESG team lost its ability to pay for a marketing drive to promote the tool and support the necessary growth in the responsible investment field. These two factors contributed to the failure in triggering a self-fulfilling prophecy as Charles expected.

Stage 3, 2012-14: A shift in strategy

Subsequent events at Visual, however, point to a partial solution to the problems of

translation encountered by Charles and his team. Through the enrolment of more actors, more forms of action, and more spheres of activity into the project, Charles and his team were able to increase the use of the ESG Product and meet at least some of their original goals. Starting in the summer of 2012, Charles changed the ESG Product strategy. He abandoned his initial hopes to create a technology that would make responsible investment financially profitable. Visual, he concluded, did not have the capabilities, identity or track record to develop a device to transform the responsible investment field. He explained:

> Visual historically does not create things like Black-Sholes. We don't. We simply, you know, we create standards by distributing them. We don't create them. So, we will not -- we never will be the leader in that. We will not … shape the field in that way, you see what I mean?

In other words, Charles thought that Visual could not *create* a new standard. The self-fulfilling project was abandoned, and Charles' new strategy entailed a different approach to translation. This approach entailed a form of political work, aimed at "anchoring" the calculative device within field-wide institutions by recruiting "relevant actors into coalitions and networks and establishing rules and regulations" (Perkman and Spicer 2008: 825).

Enrolling Visual's executives. Charles and his team changed the way in which they made the case for ESG within Visual when engaging its top management. In 2013 Charles hired a product manager for the ESG team that reported directly to the head of Visual's Product unit. The ESG Product would thus be developed and marketed from the core of the company, and there would be somebody who made sure that it was integrated in the core Visual product, and that helped Charles overcome the ESG team's disconnect with the rest of the organization. The product manager explained to us that, "at Visual the business is dominated by the 'core product.' There are other businesses … but those are minor. Now, ESG is part of the core product [so] having a product manager is a big success."

The consolidation of the field opened up an opportunity for a different type of demand for Visual's product. The growth of an investor-led coalition that advocated for responsible

investment, the so-called Principles for Responsible Investment (PRI) initiative, had put pressure on asset managers to engage in responsible investment in order to win mandates to manage corporate pension plans. This created a new business case for ESG; as Charles explained,

> That is being driven by PRI ... In the last six months, Goldman Sachs, PIMCO, Blackrock, Alliance Bernstein, these are giant asset management firms, have all signed PRI. We had meetings with big clients, several very large asset managers. And they had senior people there saying this is important.

In other words, the formal commitment to responsible investment by asset management firms created a new reason for potential demand: compliance. This could eventually lead to increased sales for Visual. The change was echoed by the ESG Product manager,

> Now it's a lot more about the regulatory environment and compliance (…) it's a lot more about the fact that ESG is now part of RFPs [requests for proposals] and that without it asset managers are going to be excluded from beauty parades [bids to manage corporate pension plans].

Senior managers, in other words, accepted the argument that regulatory compliance might drive up sales.

Enrolling competitors. Charles and his team accepted that Visual would not be offering its own ESG ratings; instead, they started distributing ratings from its two rivals, Merger 2 and Merger 3. The move reversed Charles' early focus on building the ESG Product internally, and was a response to the mounting evidence that users preferred ratings over raw data. The rival's ratings were offered for free, and for an extra charge users could click on them and obtain a PDF document with the underlying research. The collaboration went beyond selling data to include joint events and seminars for clients. The irony was not lost on Takumi, who remarked, "we said that we're going to take down [Merger 2]. But you know, we provide their research from Visual's platform."

These efforts recognized that Visual's initial strategy had not been in line with the needs of the users, who did not have yet the internal capabilities and work practices to effectively use the raw ESG data. As the Product Manager acknowledged:

> The uptake of this product in the form of raw company data has been more challenging… the second wave of investment approaches after screening out what is objectionable is using someone else's scoring and ticking a box.

The responsible investment field, in other words, had evolved in a way that called for ratings, not ESG raw data. Hence the change at Visual.

Enrolling NGOs. Third, Charles initiated a concerted effort to fund and orchestrate the activity of a variety of non-profit organizations that sought to standardize ESG metrics and make them relevant. Charles convinced the Visual Foundation, a philanthropic division of the company, to give a three million-dollar grant to Sustainable Accounts (pseudonymous), a non-governmental organization that sought to establish that ESG variables have an effect on stock prices. Visual also supported Sustainable Accounts in other ways; as Charles put it, "they're sitting in our office, they're using our machines." The strategy used by Sustainable Accounts was to compile lists of sector-specific standardized ESG metrics that it would ask the SEC to include within the mandatory Form 10-K. One of the team members also became a board member in one of the Sustainable Accounts working groups.

Beyond Sustainable Accounts, Charles lobbied the Visual Foundation to fund other NGOs that were part of what Charles called the ESG "ecosystem." It was not difficult to prompt their interest; as Charles explained, "all of these groups are non-profits. When I gave one million to Sustainable Accounts (…) they all came knocking. They're like, 'how can we talk about an expanded relationship?'" Charles' support, however, was strategic: he mapped all the NGOs operating in the space, segmenting them by audience and issue. "Some of the organizations don't like being pigeon-holed that way," Charles explained. But, he added, "I needed this slide to convince the people at Visual Philanthropies." By showing them the slide

(Figure 2 reports an anonymized version), Charles could make the case that "they're all playing to our different specific roles."

A new assemblage. The non-profit funding strategy described above also entailed a new role for Visual. The associations drawn up by Charles were now of a different nature; as he said, "there are some things that are just low-hanging fruit, like linkage documents and simple MOUs [memoranda of understanding] and common language that you use publicly when describing the other. Some are at the organizational level (…). And we were suggesting that we would help fund a process that got the relevant parties together and try to find where the commonality was to create a little more clarity for the broader market essentially." Charles had gone as far as to publish this plan in an article on an academic/ practitioner journal.

In sum, Charles' new strategy entailed changes in translation at several levels. Within Visual, it called for a new Product Manager and a case for a compliance-led demand built on broader changes in the field. Among users, it entailed providing them the critical feature that the ESG Product missed in the past, ESG ratings, even if they were not Visual's own. With the NGOs, it took the form of financial support with the ultimate goal of creating a regulator-approved standard, partly accomplished by redefining the role that each NGOs played in the ESG "ecosystem" In sum, whether with Visual managers, ESG investors, or NGOs, Visual's strategy relied on what actor network theorists denote by enrolment (Callon, 1986).

Outcome. The shift appears to have been successful in several ways. By 2013, the ESG Product enjoyed wider adoption, with 9,669 unique users versus 2,415 in 2009. Much of this progress happened since the shift in strategy in 2012, and it is possible to discern clear progress along three different fronts. First, within Visual Charles appeared to have persuaded many colleagues of the value of the ESG Product beyond the direct sales it generates. In a recent meeting of the management committee, Charles told us, the new CEO of Visual was

asked, “hey, is this important to our business?" And the CEO responded, "It is. Clients expect it of us. We have to deliver this now, and it's an important piece."

Second, Visual’s customers exhibited a greater appreciation for Visual’s ESG Product. Here we draw on data from a market research company that began publishing a ranking of responsible investment research providers in 2012. Following standard practice, this company had ranked data providers by polling investors and portfolio managers (Table 2). In the 2012 ranking Visual was listed as the 13th ranked firm out of 24 positions in the category “Best Independent SRI research provider.” In 2013 it kept the same position, but by 2014, it climbed 9 positions and reached 4th. The 2014 survey also reported some of the comments of the respondents. The only comment in which Visual was mentioned presented its product in a positive light: “little progress has also been made on data quality, systems and methodologies except for Visual.”

Finally, the size of the responsible investment field has more than tripled. In 2014, more than 1,200 asset owners and asset managers signed up to the Principles for Responsible Investment (PRI), with upwards of $45 trillion in assets under management (AUM). Sustainable Accounts has consolidated its position in the field and started to engage policy makers, and in 2014 it succeeded in recruiting a former chairman of the SEC as Vice-Chair of the board. Conversations between Sustainable Accounts and FASB (the organization that establishes US financial accounting and reporting standards) began to take place in 2014, a critical step towards the development of mandatory sustainability reporting standards.

Despite the success of Charles’ change in strategy, he also recognized the downside in the new form of assemblage. He remains convinced that his earlier strategy would have been more effective in driving the growth of the responsible investing field, but acknowledges that the kind of change he envisioned would have required much larger investments than the ones he was able to get from Visual:

> I think the market could be bigger for ESG if we had created it. In my view, yes, we are serving the demand (…) the one regret I have is that we didn't invest full-throttle at the time that we originally - you know, we're still kind of executing on our 2008 plan essentially. Some days I wake up so proud of everything we've done, and other days I'm like I cannot believe that we've not done more. But that's life.

------ Insert Table 2 about here -----

Discussion

Our study of Visual Markets explored the company's efforts to design and sell a new data product for responsible investors. The initial plan entailed the introduction of a new calculative device and the transformation of the field through the triggering of a self-fulfilling prophecy. This plan, however, was not successful, and the company shifted to a strategy that entailed broader but non-material associations such as enrolling top executives, competitors, and standard-setting NGOs in a more heterogeneous assemblage. This second attempt proved successful in driving product sales and field change. The resistance encountered by Charles to his original plan, as well as his relative success in the second attempt, offer an opportunity to theorize the role of institutions in the process of translation, as well as to further understand the role institutional work play in performative processes. Figure 3 offers a visualization of the theory that we develop in this section.

------ Insert Figure 3 about here -----

The challenges of translation. Charles' first and most ambitious translation project, his initial performative strategy, was met with resistance by most of the actors he tried to enroll. While the resistance of competitors is perhaps easier to understand, as Charles' plan was clearly hostile to their long-term independence, the resistance of other units at Visual and the relative lack of interests among investors was more surprising and requires further analysis. Charles' plan to enroll investors in mainstream finance relied on an innovative

normative association, bringing to ESG data the values of objectivity and legitimacy associated with quantitative finance. The ideal user Charles targeted was not traditional SRI investors, nor corporate CSR managers, but traders and portfolio managers in large investment banks and buy-side asset managers. This, he thought, would bring instant legitimacy to ESG, quickly attracts users who would apply existing quantitative investment practices to ESG investing, and in turn make Visual the "obligatory passage point" (Callon, 1986) in the field.

However, Charles did not anticipate that association works both ways: infusing environmental and social variables with the legitimacy and quantitative affordances of mainstream finance called for including ratings, but doing so would also, in the eyes of Visual's top management, cast a shadow of subjectivity and opaqueness on Visual's ESG tool and on Visual at large. This reaction is to large extent a function of Visual's central position in mainstream finance, and the perception that the information displayed on Visual's screen was objectively "true." Other (more peripheral) competitors, however, offered different products to different audiences and were more flexible in taking up ESG ratings in their offering. In sum, Charles' initial strategy faced resistance from Visual's top management, who were attached to a set of properties of the data they sold, and that, in their eyes, ESG ratings lacked.

To overcome these barriers, Charles explored alternative associations to the ones he initially envisioned, and successfully enrolled the Visual Foundation and various NGOs to whom he "assigned" a specific role in the future ecosystem of responsible investment. In theorizing this second and more successful form of assemblage, we note that the calculative device was no longer the critical source of durability in the associations. Charles turned to money (a funding strategy), the law (memoranda of understanding), academia (an article about his plans) and organization (a new product manager). The new glue that tied the new

assemblage was thus not the hardware and software of the data license, but a diverse set of less material associations of a legal, intellectual, and organizational nature.

Why were these associations more successful than the previous ones? In providing an answer, we build on the institutional work literature and rely on two concepts that identify how institutional processes facilitate performative projects.

Assembling a Normative Network. One explanation for the effectiveness of Charles' second attempt lies in the heterogeneity of the actors involved in it, who allowed Visual to be more effective in straddling the financial and social institutional fields. In his first attempt at translation, Charles had explicitly limited the involvement of NGOs, and focused his team on potential mainstream users. By including NGOs in the second attempt, Charles was able to leverage the work that these organizations had already been doing for years in creating legitimacy for responsible investing. Charles, in other words, stopped trying to be the "solo performateur," attempting to change the field only through the material affordances of his calculative device; and started to engage as well in institutional work. When read through the lens of the literature on institutional work, Charles' attempt is not just any form of network construction, but one that aimed at creating a *normative network*. Lawrence & Suddaby (2006) have defined normative network as "interorganizational connections through which practices become normatively sanctioned and which form the relevant peer group with respect to normative compliance, monitoring, and evaluation." Our case suggests that the normative network promoting Visual's ESG Product not only included NGOs but also competitors and Visual's new Product Manager, as all of them were directed at increasing the legitimacy of the tool in the eyes of external and internal audiences.

Charles' reliance on a normative network is a direct outcome of the presence of normative and institutional constraints on the potential assemblage that Charles was allowed to build, and suggests that institutional norms (such as "no ratings") and values (like

"transparency," "objectivity," etc.) mediate the success of the development of material tools, alerting to the importance of institutional factors in explaining what performative projects succeed. The assembly of the normative network also points to the crucial role that multi-level field dynamics (Gray, Purdy & Ansari, 2015; Thornton, Ocasio & Lounsbury, 2012) play in shaping the opportunities for effective performative projects. The translation trajectory of Visual's ESG project was initially shaped by Charles' design decisions, then constrained by organizational and field-level normative associations, and eventually (partially) resolved with the bottom-up assembly of a novel normative network (Smets, Morris & Greenwood, 2012).

Assembling a Regulatory Network. The second explanation for the success of Charles' second attempt stems from his decision to anchor the NGO strategy around the PRI and Sustainable Accounts. In particular, Charles' enrolment of Sustainable Accounts is both a direct attempt to inscribe his tool in an industry standard, and an indirect attempt to enroll the regulatory power of SEC. In other words, Charles was foregoing the durability offered by a material device in exchange for the strength afforded by legal and organizational associations. Notably, Charles neither launched Sustainable Accounts nor designed its strategy to leverage the existing regulatory infrastructure and foster more ESG reporting from corporations. But he realized he could catalyze this process by supporting it through the Visual Foundation and help them setup a persuasive board of directors. Similarly, Charles benefited from a new source of demand for Visual's product, compliance, which was the result of changes in the field of responsible investment driven by the PRI. This form of institutional work is akin to what Lawrence and Suddaby (2006, p. 216) call enabling work, that is, to "facilitate, supplement and support institutions. This may include the creation of authorizing agents or new roles needed to carry on institutional routines or diverting resources (i.e., taxation) required to ensure institutional survival." Because the term enabling

work is overly broad, we propose instead *assembling a regulatory network* to emphasize the difference between the work entailed in rewiring normative association from that entailed in changing regulation in practice.

The concept of regulatory network sheds light on the ways in which regulatory processes can be assimilated in various "performative projects", whether it is through enrolling, fundraising, lending facilities, or sitting on boards. Economic sociologists have started to direct attention towards the distributed nature of regulatory activity, showing how ambiguous financial innovation can undermine the effectiveness of financial regulation (Funk & Hirschman, 2014), and how various relational configuration between regulators, the regulated and other actors can lead to different outcomes (Thiemann & Lepoutre, 2017). Our findings contribute to this research by showing how the regulatory networks examined in the aforementioned studies were built in the early stage of development of a financial practice, as part of a broader performative project.

Performative work

To capture the theoretical significance of the two aforementioned mechanisms, we conceptualize the overall process we identified as *performative work.* We define performative work as the necessary institutional work to enable translation and the subsequent adoption of the device. Performative work emphasizes the gains from jointly considering the emphasis on materiality that characterizes the performativity literature with the attention to norms, roles and resources that is found in institutional theory. As in the canonical Callon-MacKenzie notion of performativity, performative work aims at the construction of market *agencement* (Callon, 2013; Callon, 2016), but instead of relying solely on the durable associations created by material artifacts through black-boxing, it also builds on the seemingly weaker ones created by norms, laws, organizations, and regulations. Despite this semblance of weakness,

we contend that this alternative route to performativity may better overcome institutional resistance.

The idea that performativity entails institutional work is consistent with Millo and MacKenzie's (2009) analysis of Black-Scholes. These authors do not explain the adoption of the formula solely on the basis of its mathematical elegance and Fisher Black's pricing sheets, but also on the adoption of new risk management tools that necessitated the use of the formula. Our approach is also consistent with recent attempts to bring together performativity and institutional theory in empirical studies of responsible investment. For instance, Giamporcaro and Gond (2016) explore how, in the construction of the SRI market in France, the micro-politics of calculative practices intersected with the macro-politics of market building. These dynamics had both an enabling and a constraining effect, decreasing the freedom of the rating agency. Slager et al. (2012) draw attention to various types of institutional work entailed in developing and institutionalizing the FTSE4Good index, and argue that the widening of the objectives of the index from its original focus as an investment tool towards becoming a standard for CSR practices was critical to its success.

Contributions to the performativity literature

Over the past two decades, Callon's theory of performativity has simultaneously intrigued and challenged scholars in sociology and organization theory. Yet, with few exceptions, institutional theory (Fourcade, 2007; Lounsbury, 2008; Powell & Colyvas, 2008) has only recently started to integrated performativity insights in its theoretical toolkit. Our study has sought to advance this integration by recasting performativity within the original intellectual project of Actor-Network Theory, and by leveraging the concept of translation to empirically explore how actors can attempt change the institutions of financial markets. Our analysis articulates the role of normative networks (establishing organizational, financial, legal and institutional associations) and regulatory networks (enrolling regulatory agencies) in an

approach that we call *performative work*.

Bringing back ANT and translation into performativity contributes to better specify the role of assemblages (Callon & Latour, 1981), socio-technical *agencements* (Callon, 2007), and market *agencements* (Çalışkan & Callon, 2010; Callon, 2016) in performativity. While these concepts implicitly are about translation, arguing that effective performativity requires (or better, is synonymous with) the construction of socio-technical *agencements*, it also leaves unspecified the theoretical criteria that explain their effectiveness (Cochoy, Trompette & Araujo, 2016). By contrast, bringing back the original insights of ANT and its focus on translation provides a clearer empirical focus, as well as theoretical criteria to explain the relative effectiveness of the two performative attempts at Visual[4]. Furthermore, our approach is consistent with Callon's recent framing of market *agencements* as innovation (Callon, 2016), a move that obviously stems from the ANT-performativity lineage we traced in the introduction. Innovation projects like the one we studied at Visual are the engine of markets, and their success "rests on the skillful articulation of human and technical elements" (Cochoy et al. 2016: 8). Our emphasis on performative work offers an opportunity to further our understanding of what this skillful articulation entails: designing the calculative device, assembling a normative and a regulatory network. Institutional theorists would suggest that attending to the normative and regulatory network might be especially important in interstitial issue field (Zietsma et al., 2017) like the one we studied, as responsible investment straddled fields, bringing together traditional financial actors, NGOs, Unions, and Governments. In this context performative work is likely to be less "blackboxing," and more "catalyzing" action across heterogeneous actors (Furnari, 2014, 2016).

[4] The theoretical importance of this shift might be lost if we do not consider that norms and legitimacy are not in the ANT vocabulary, which especially in Latour and Callon's early work, emphasizes interests and materiality. "Social forces," "norms," "institutions," that is, the bread-and-butter of sociological explanations, were questioned as credible sources of explanations (Latour, 1987; Latour, 2005, p. 1).

We theorized performative work in the context of the responsible investment field, and thus the role of calculative device might be more prominent in our setting than in other contexts. For instance, from a critical performativity perspective (Leca, Gond & Barin-Cruz, 2014; Spicer et al. , 2009), future studies should explore whether performative projects outside of the financial field require a different mix of the strategies we identified.

Contributions to institutional work

The concept of performative work contributes to the literature on institutional work by extending the concept of normative network and regulatory network (Lawrence, Suddaby & Leca, 2009) to the realm of performativity and material artifacts. In doing so, we address the call for institutional theorists to "explore the implicit value systems that underlie how certain objects function" (Jones et al., 2013): 67) and the role artifacts play in institutional processes.

Performative work is different from institutional work in that it entails the creation of a distinct artefactual layer at the infrastructure of the focal industry, with critical implications for what Lawrence, Leca & Zilber (2013: 1026) call the "how, who, and what" of institutional work. Regarding the *how*, performative work aims at ensuring the circulation of calculative devices. As with organizational rules, legal dispositions, etc., calculative devices are structures that constrain action. However, the durable material nature of these artifacts open up the possibility to *black-box* them, that is, strengthen and simplify constraints upon choice. The upside is a much greater degree of coordinated action across actors, sizeable enough to open up the door to self-fulfilling prophecies in a market, and even force non-adopters to join. In this manner, performative work adds to existing efforts in institutional theory to incorporate materiality (Gawer & Phillips, 2013; Jones & Massa, 2013). Finally, performative work can be seen as a prior state to Callon-MacKenzie performative projects: as Millo and MacKenzie (2009) make clear, eventually the price of stock options did change in

line with the Black-Scholes model, but it was only once the appropriate conditions had been laid out in terms of the actors' interests and government regulations.

Second, the *who*, or identity of the actors entailed in performative work, is different from institutional work. Our case suggests that performative work is undertaken by the suppliers of calculative tools. While Kraatz (2009) suggests that institutional work requires involvement by the leader of the organization, performative work can be led by peripheral actors. It also contrasts with the performativity literature, which has stressed the role of proponents of theory. In line with (Dorado, 2013), performative work requires collectives with material production skills and routines. More importantly, much of the task of performative work is catalyzing the efforts of others (Furnari, 2014, 2016), however, the case of Visual suggests that corporate actors occupying central positions in the field might be at a disadvantage in conducting this catalytic work, which requires more diverse organizational forms, and perhaps a more central role for NGOs.

Third, the *what* of performative work is also distinct. Building on Emirbayer and Mische (1988), Battilana and Aunno (2009) suggested that intentionality in institutional work should be interpreted as a multidimensional construct, comprising iterative (past-oriented), projective (future-oriented), and practical-evaluative (present-oriented) dimensions, and speculated that each dimension might dominate in specific forms of institutional work or stage of the institutionalization process. Raviola and Norbäck (2013) studied the digital transition of a financial newspaper and showed how the enabling properties of the new technology (projective agency) where always evaluated through the prism of the old technology (iterative and practical-evaluative agency). We contribute to this line of research, by showing how, over the three different stages of the Visual project, the dominant form of agency shifted from projective (Charles' initial plan), to iterative (how other units and Visual and the client interpreted the novel device), and practical-evaluative (Charles' shifting

trajectory of action). We also show how the process was mediated by the existing material infrastructure which constrained the design options for the device, and the reception the device received from other units in Visual and among clients.

Conclusion

In conclusion, our account speaks to the ongoing debate over performativity. It casts in a new light the arguments of the critics of performativity, who had asked for a more prominent role of politics (Fligstein & Goldstein, 2010; Nik-Khah, 2007) and for better-defined scope conditions for performativity (Felin & Foss, 2009; Zuckerman, 2012). The theory we develop for effective translation on the basis of our case analysis can be interpreted as introducing a set of institutional scope conditions for effective performativity. Given our research design we cannot establish whether this condition is necessary, but the shift in strategy we observed at Visual provided us with enough analytical leverage to establish its existence.

We hope that this contribution will also advance the performativity debate past its framing as one of constructionists vs. realists (Felin & Foss, 2009; Zuckerman, 2012), and further instead the engagement between performativity and institutional theory (Fourcade, 2007; Gond & Nyberg, 2016; Gond, Cabantous & Krikorian, 2016; Michael Lounsbury, 2007; Powell & Colyvas, 2008; Slager et al., 2012) by bringing back translation and emphasizing the role of normative networks and regulatory work. By highlighting the equivalence of material and institutional associations, our study bridges the performativity and institutional theory literatures, illuminating the role of devices as well as norms in contexts of institutional change.

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Table 1. Comparison of Visual ESG Product Affordances with Main Global Competitors in 2008 and 2012.

	2008							2012			
	Competitor1 (SRI data vendor)	Competitor 2 (SRI data vendor)	Competitor 3 (SRI data vendor)	Competitor 4 (SRI data vendor)	Competitor 5 (Financial Data Vendor)	Competitor 6 (Financial Data Vendor)	Visual	Merger 1 (Competitors 1 + 6)	Merger 2 (Competitors 2+3)	Merger 3 (competitors 4+5)	Visual
Financial information and Pricing data	○	○	○	○	●	●	●	●	○	●	●
Indices	○	○	○	◖	●	●	●	●	●	○	●
Global coverage	●	○	○	○	●	●	●	●	◖	●	●
As reported environmental, social and governance data	●	◖	◖	◖	○	○	●	●	●	●	●
Derived environmental, social and governance data	●	●	●	●	○	○	○	●	●	●	○
Plant-level data (e.g. Toxic Release Inventory)	●	●	●	●	○	○	○	●	●	●	○
Environmental, social and governance Ratings	●	●	●	●	○	○	○	●	●	●	○
Environmental, social and governance Research	○	●	●	●	○	○	○	●	●	●	○
Buy list	○	●	●	●	○	○	○	●	●	●	○
Combined search	○	○	○	○	○	○	●	○	○	○	●

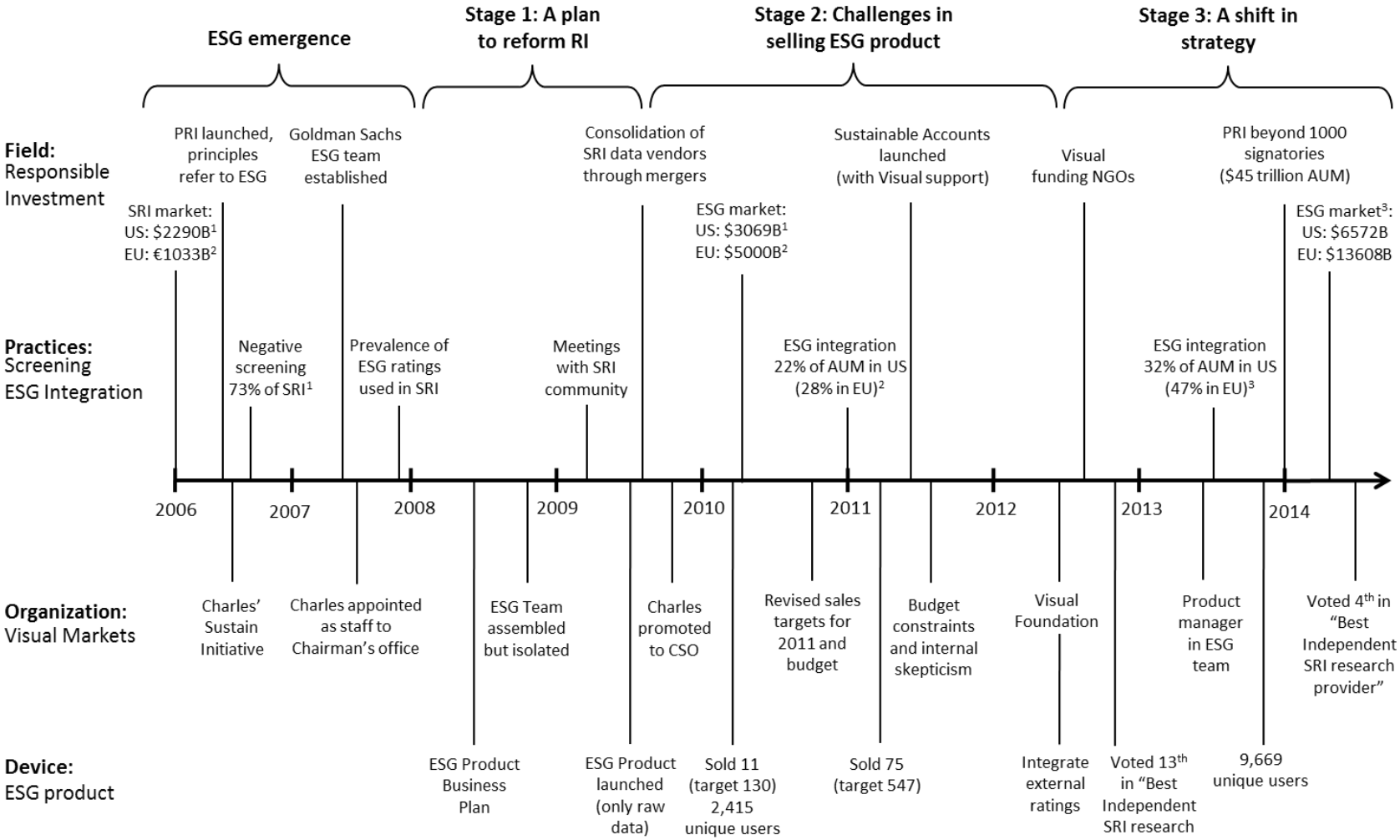
Source: Adapted from Visual's ESG Product competitive analysis and our fieldwork. The Financial Data Vendors were competing with Visual in 2008 across different markets but were not offering environmental, social and governance data.
Note: In this table, we only selected the vendors competing with Visual at a global scale, and who offered data and ratings on environmental, social and governance dimensions. The term "combined search" is not native but our own.

Table 2. Rankings of Visual and other ESG data provider, 2012-2014.

Firm	Position 2012	Position 2013	Position 2014
Competitor Merger 2	1	1	1
Competitor Merger 3	2	2	2
Other competitor (national)	4	8	3
Visual	13	13	4
Other competitor (Environment only)		4	5
Other competitor (national)	8	6	6
Other competitor (national)	3	5	7
Other competitor	11		8
Other competitor	9	7	9
Other competitor (national)	6	9	10

Source: Independent Research in Responsible Investment Survey, 2012-2014.
Note: We only reported the ranking of the top 10 ranked providers in 2014. The other competitors listed were not included in table 3 above because they were focused on one (or few) countries, and/or focused on one of the E, S, and G factors only. Competitor Merger 1 was only listed in 2012 and ranked 23.

Figure 1. Timeline and key events in the development of the ESG Product at Visual Market



Sources: (1) US SIF, (2) EUROSIF, (3) Global Sustainable Investment Review (GSIA)

Figure 2. Excerpt of a slide used by Charles to articulate the roles of various NGOS relevant for the RI field.

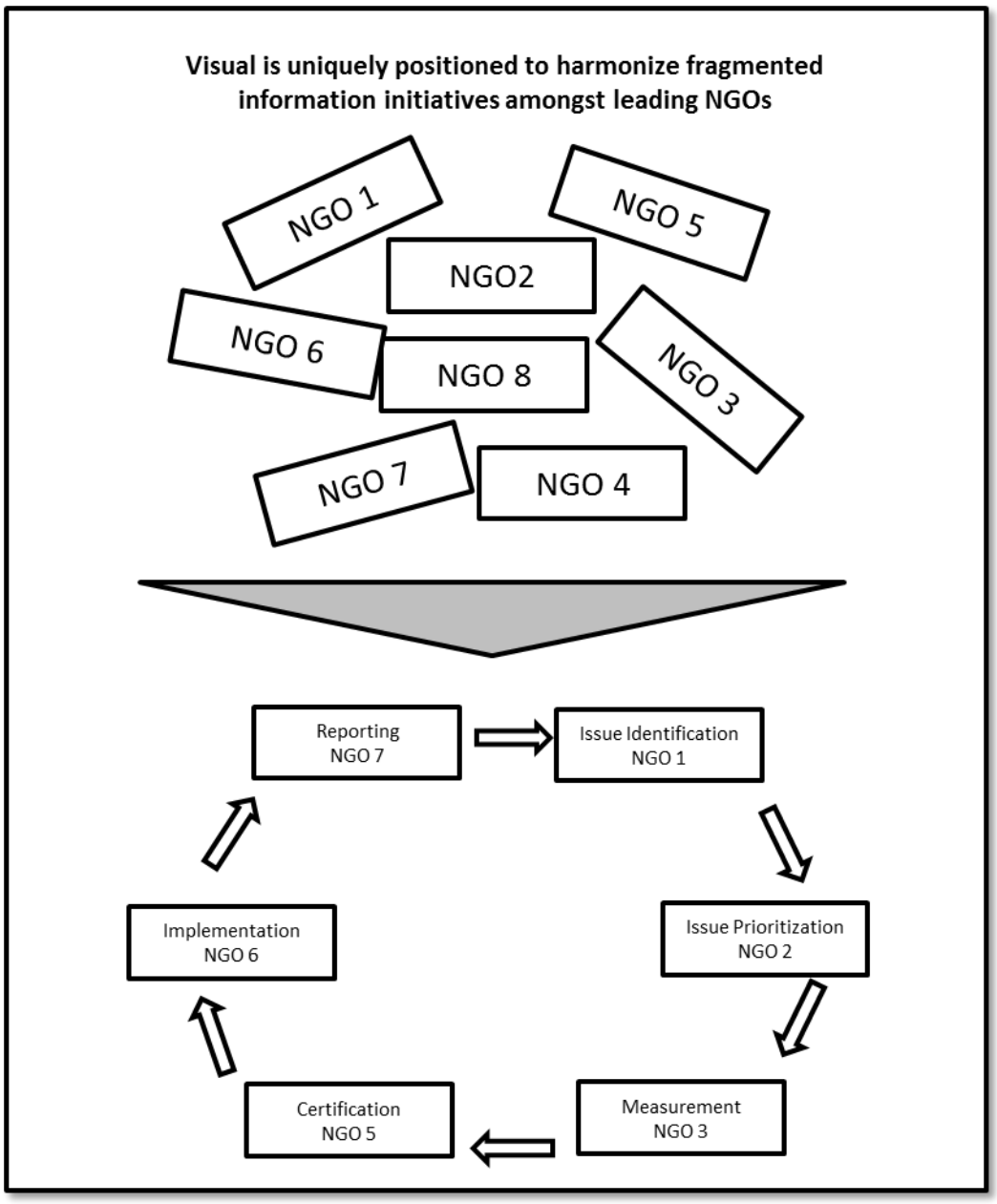
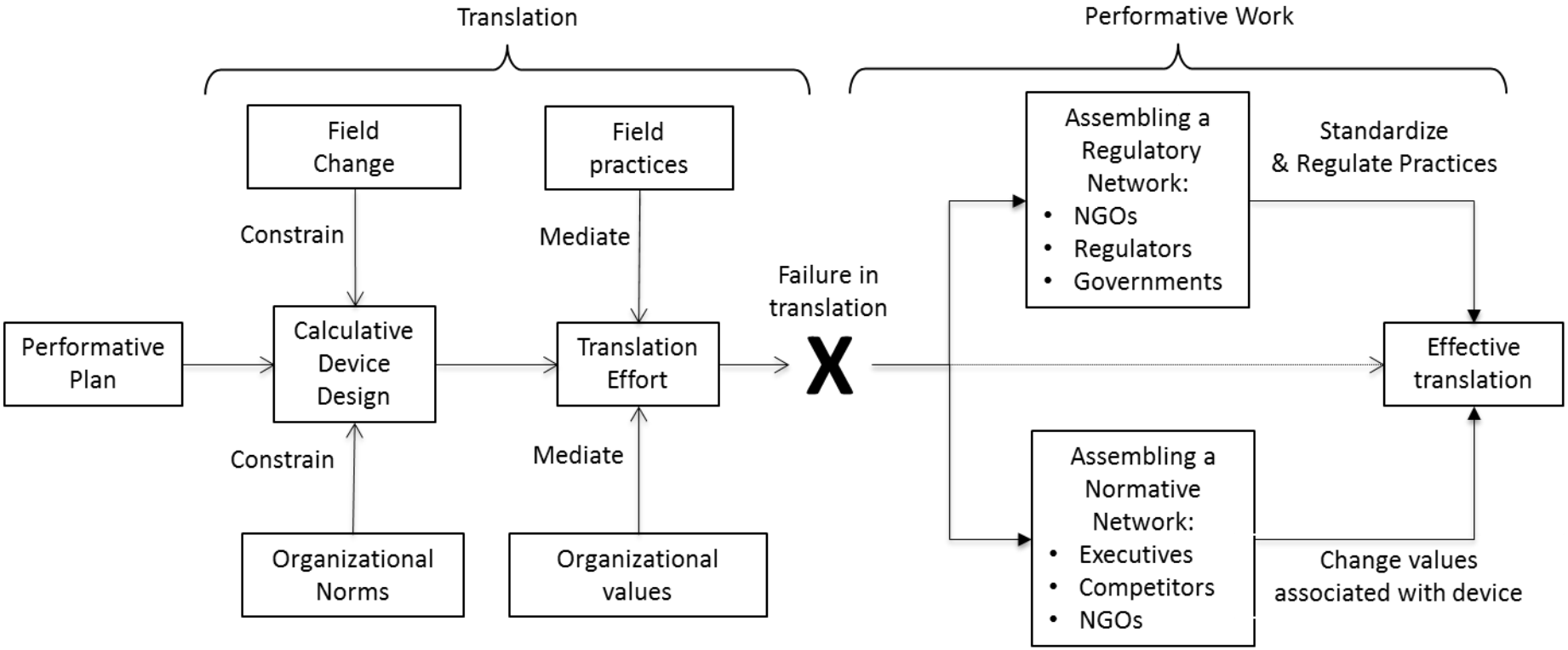


Figure 3. Translation and Performative Work in Performativity.



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Financial information and Pricing data	○	○	○	○	●	●	●		●	○	●	●
Indices	○	○	○	◖	●	●	●		●	●	○	●
Global coverage	●	○	○	○	●	●	●		●	◖	●	●
As reported environmental, social and governance data	●	◖	◖	◖	○	○	●		●	●	●	●
Derived environmental, social and governance data	●	●	●	●	○	○	○		●	●	●	○
Plant-level data (e.g. Toxic Release Inventory)	●	●	●	●	○	○	○		●	●	●	○
Environmental, social and governance Ratings	●	●	●	●	○	○	○		●	●	●	○
Environmental, social and governance Research	○	●	●	●	○	○	○		●	●	●	○
Buy list	○	●	●	●	○	○	○		●	●	●	○
Combined search	○	○	○	○	○	○	●		○	○	○	●

Source: Adapted from Visual's ESG Product competitive analysis and our fieldwork. The Financial Data Vendors were competing with Visual in 2008 across different markets but were not offering environmental, social and governance data.
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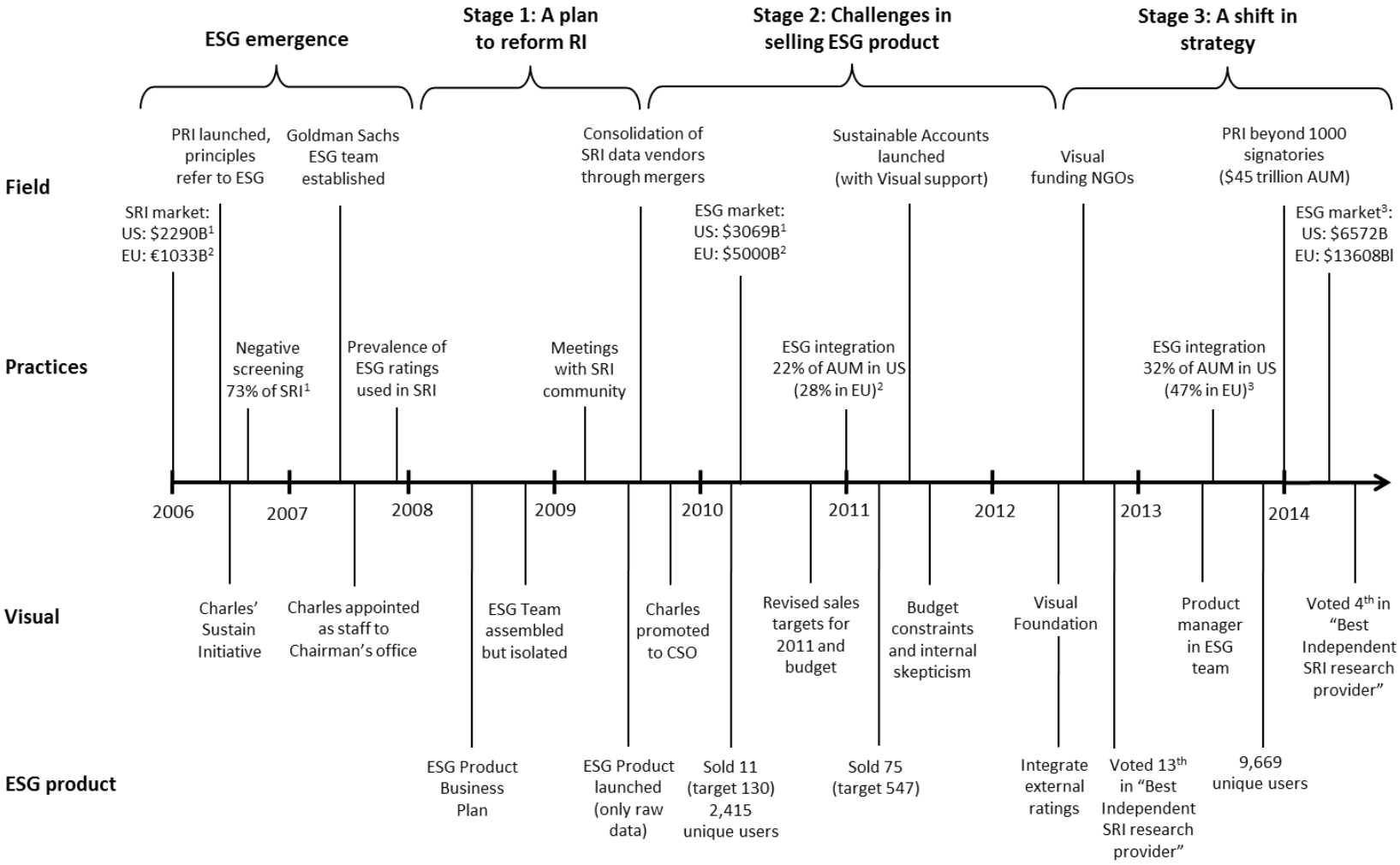
Source: Independent Research in Responsible Investment Survey, 2012-2014.
Note: We only reported the ranking of the top 10 ranked providers in 2014. The other competitors listed were not included in table 3 above because they were focused on one (or few) countries, and/or focused on one of the E, S, and G factors only. Competitor Merger 1 was only listed in 2012 and ranked 23.

Figure 1. Timeline and key events in the development of the ESG Product at Visual Market



Sources: (1) US SIF, (2) EUROSIF, (3) Global Sustainable Investment Review (GSIA)

Figure 2. Excerpt of a slide used by Charles to articulate the roles of various NGOS relevant for the RI field.