Journal of Business Research 183 (2024) 114825

Contents lists available at ScienceDirect

Journal of Business Research

journal homepage: www.elsevier.com/locate/jbusres

Public actor roles in market experiments: Innovating digital health markets in New York and Ireland

Nicola Mountford [a,*], Susi Geiger [b]

[a] School of Business, Maynooth University, Ireland
[b] College of Business, University College Dublin, Ireland

ARTICLE INFO

Keywords:
Market innovation
Public actor
Institutional theory
Healthcare
Market experiments

ABSTRACT

This paper responds to calls for greater focus on public actors in market innovation, asking how public actors engage in market experiments to innovate public goods markets. We introduce the concept of market experiments, and particularly public actors' roles in instigating and directing such experiments, to better understand how market innovation processes are put into motion to effect market change and solve specific problems. We focus on two market experiments that track government efforts to encourage the inclusion of digital health technologies in healthcare markets in Ireland and the U.S. between 2015 and 2017. In doing so we move beyond views of government as largely confined to a regulatory role in institutional change. Rather, we see government actively experimenting for possible future markets that can embrace rapid digitalization and meet societal needs. We outline four different government roles across different stages of market de-institutionalization and re-institutionalization: triggering, stabilizing, and prescribing market experiments and anointing market actors.

1. Introduction

How do public actors innovate markets? They can of course rely on laws and regulations, but we suggest that they may also engage in non-regulatory market experiments to put innovation processes into motion. This may be particularly beneficial in markets that are of high societal importance – where innovative markets can deliver societal, economic, or environmental benefit. Markets such as food (Sabel & Zeitlin, 2008), chemistry (Finch, Geiger, & Reid, 2017) or plastics (Cherrier & Türe, 2022) may require state intervention to fully realize their potential to deliver public goods. Innovation is also necessary where markets create negative overflows, some of which may need to be 'brought back' into the market (Callon, 1998; Callon, 2009; Geiger & Gross, 2018). In yet other cases, public actors need to act 'entrepreneurially' to trigger the creation and nurture the flourishing of specific markets (Mazzucato, 2022). Yet, with few notable exceptions (Baker, Storbacka, & Brodie, 2019; Kaartemo, Nenonen, & Windahl, 2020; Mountford & Geiger, 2020; Chimenti & Geiger, 2023), the literature on market innovation has largely confined public actor roles in markets to corrective actions through policy interventions. Indeed, in a recent editorial that takes stock of the market innovation literature, Storbacka, Nenonen, Peters, and Brodie (2022) explicitly called for more "research on the shaping strategies of public actors, including nation states and supra-national organizations such as the European Union (E.U.)". This attention, they highlight, is particularly vital in cases where public actors assume much more active roles in innovating markets toward collective value creation in the public interest (Mazzucato, 2022).

This special issue encourages a focus on the organizing of specific markets that have significant consequences for the future of market society. We take up this challenge by identifying public actors' market innovation activities in the crucial healthcare market, taking inspiration from research that has studied such activities in terms of market innovator 'roles' (Flaig & Ottosson, 2022; Mountford & Geiger, 2020). We follow Geiger and Gross (2018, p. 1357) to define market innovation as actions undertaken by market actors to "reconfigure the interfaces, practices or social and material arrangements in and through which market exchanges take place" (see also Kjellberg, Azimont, & Reid, 2015). Our argument is that, given their institutional levers, public actors can have a superior vantage point from which to engage in highly directed market innovation activities if they assume an active role in these processes. More specifically, we focus attention on the role of market experiments instigated and directed by public actors. Recent research has started to explore the notion of market experiments and the respective roles that public and private actors might play in these

* Corresponding author at: School of Business, Maynooth University, Maynooth, Co. Kildare, Ireland.
E-mail address: nicola.mountford@mu.ie (N. Mountford).

https://doi.org/10.1016/j.jbusres.2024.114825
Received 18 March 2023; Received in revised form 13 May 2024; Accepted 10 July 2024
Available online 24 July 2024

experiments (e.g. Callon, 2009; Chimenti & Geiger, 2023). Following Chimenti and Geiger (2023), we see market experimentation as a particular subtype of market innovation, which differs from other types of market innovation by constituting a highly reflective, intentional and often recursive process through which actors seek to direct market innovation. With the ever-increasing speed of digital technologies entering existing markets and with the potential of some of these technologies to change markets profoundly, we propose that it is time to think in much greater detail about public actors' potential in instigating and driving such forms of market innovation. In doing so we also respond to calls for greater 'nuance' in understanding how market innovation processes are put into motion to solve specific problems (Cochoy, Trompette, & Araujo, 2016; Neyland, Ehrenstein, & Milyaeva, 2019; Geiger & Kjellberg, 2021). We focus this paper on the roles of public actors in triggering, stabilizing and prescribing market experiments and anointing market actors to answer the broad question of how public actors innovate public goods markets.

We situate our investigation in one particularly important public goods market: healthcare. Digital transformation holds the potential to liberate more equitable and sustainable future healthcare markets (Kraus, Schiavone, Pluzhnikova, & Invernizzi, 2021; Geiger & Kjellberg, 2021; Cozzolino & Geiger, 2024). Demographic change, resource scarcity, and an increasing emphasis on equity of access to care have led to market and societal demands for more efficient and effective modes of healthcare delivery. Digital health, or eHealth, is one way of potentially delivering on this agenda. It requires, however, a coming together of Information Communication Technology (ICT) and medicine that is fraught with institutional clashes and complexity (Mountford, 2019). Powerful incumbent healthcare market actors are trained to be risk averse, while incoming digital market actors signal large-scale market disruption (Geiger & Kjellberg, 2021; Cozzolino & Geiger, 2024). Government is well positioned to 'fix' the regulatory institutional blocks within markets over time by ensuring that consequences favour particular types of action (Puffer, McCarthy, & Boisot, 2010). The underlying structures, norms and value systems of a market may, however, take far longer to innovate (Puffer et al., 2010).

We draw on two 'scale one' market experiments (Callon, 2009) that we were in a position to observe in real-time: the government-led market experiments in eHealth in New York, USA and Ireland. Combining literature on market innovation with an institutional stance, which is in keeping with our emphasis on public actors, we propose a model of Government roles in experimenting for a more entrepreneurial and digitally driven healthcare market. We posit that precipitating external social and technological jolts in healthcare markets must be accompanied by a regulatory jolt deliberately inserted by government to catalyze a de-institutionalization process and thus trigger a market experiment. We outline additional market innovator roles for government in anointing market actors while stabilizing and prescribing the structural and behavioural changes required to re-institutionalize actor compositions and new norms in and beyond the market experiment. In doing so, we explain how governments use experiments to rattle a market's institutional iron cage (Dimaggio & Powell, 1983) and make room for innovation in an otherwise static market. In this manner, governments become highly active market innovators themselves, directing markets toward the common good.[1]

1.1. How governments create space for market innovation

1.1.1. Public actors as market innovators

Given the dominance of the market as the preeminent form of economic organizing in late capitalism, market innovation is key to society's ability to respond to multiple challenges posed, for instance, by demographic change, societal need, climate change, and technical developments (Doganova & Karnøe, 2015; Doganova & Laurent, 2019; Chimenti & Geiger, 2023). Market innovation is not merely confined to the opening up of new markets. In line with a now sizeable literature (see Storbacka et al., 2022; Sprong, Driessen, Hillebrand, & Molner, 2021 for recent reviews), we see market actors' attempts to innovate markets as broad-based efforts to innovate new visions, versions and practices within the market (Kjellberg et al., 2015). This can include innovating new market structures (such as new relationships between actors, or new distributions of labor across actors); new ways of effecting an exchange; new market devices and infrastructures; new market representations; empowering new market actors, and/or instituting new conceptions of value (Harrison & Kjellberg, 2016; Geiger & Kjellberg, 2021). Important for our purposes, Flaig and Ottosson (2022) use role theory to identify patterns of actions adopted by actors in the market innovation process, where roles are "determined through a focal actor's actions and the reactions of other actors" (p. 69). They identify six roles in the market innovation process, depending on market actors' disposition to the market innovation process (instigating, supporting, detracting); corresponding actions, particularly in terms of resource commitment; and the centrality of the actor in the market network. Combining these elements, market actors can adopt the roles of market driver, supporter, missionary, catalyst, detractor, or rival, respectively (Flaig & Ottosson, 2022).

While highlighting the breadth of actors that are involved in markets and the roles these actors may occupy, empirically many market innovation studies and adjacent studies on market systems dynamics have focused on a somewhat limited range of focal market actors driving these changes. Their dominant focus has been on firms and their representatives (e.g. Giesler, 2012; Kjellberg & Olson, 2017), consumers (Dolbec & Fischer, 2015; Scaraboto & Fischer, 2013) media (Humphreys, 2010), and social movements (Dubuisson-Quellier, 2013; Geiger & Gross, 2018; Geiger and Stendahl, 2023). As mentioned, public actors feature in these accounts, but often in more traditional regulatory roles and very rarely as market innovators themselves. This holds true even for research that considers markets that are strongly affected by public actors. For instance, in tracing market legitimation processes in the fertility technology market, Mimoun, Trujillo-Torres, and Sobande (2022) rarely mention the catalyzing role of regulatory processes, while Huff, Humphreys, and Wilner (2021) acknowledge the recursive role of regulation and legitimation in the U.S. cannabis market but do not focally engage with regulators' roles.

Moving from the general market innovation literature to studies focused on market innovation in healthcare and digital health, Geiger and Kjellberg (2021) acknowledge how important it was that technology firms adapt to stringent health regulations, but they also highlight that the Food and Drug Administration, the main regulator in this space, was left in a largely reactive role as it sought to 'keep up' with entrepreneurial market innovators. Yet, public actors have an important role to play in market innovation as they typically have superior institutional levers compared with other market actors. We do know that healthcare market innovators face strong institutional headwinds (e.g. Mountford & Cai, 2023; Lander, 2016, Miller & French, 2016). For example, market innovators may underestimate the impact of professional relationships and hierarchies, standards of care, and the link between reimbursement and services provided. All three make the development of the new market networks, standards, and payment models necessary for healthcare-based technology innovation an uphill struggle for aspiring market innovators (Garbuio & Wilden, 2018). Thus, as Cozzolino and Geiger (2024) have recently shown, regulation can be a vital trigger and enabler for digital startups to succeed in innovating the healthcare market. In their view, digital transformation in healthcare is a type of market innovation where public actors have a clear advantage as market innovators, as they have the financial means, political power, and implementation levers that other would-be market innovators may lack.

[1] Government, in this case, refers to a "sovereign entity with sovereign authority over a specific constituency." (Klein, Mahoney, Mcgahan, & Pitelis, 2013).

Indeed, with these structuring capabilities, public actors may be one of the few market actors who are in a position to engage in large-scale directed experimentation in such markets.

Building on these insights, we define market experimentation as a systematic, intentional, and often *recursive* set of activities that involves the *deliberate* manipulation of one or several market subprocesses – configuring exchange agents, qualifying offerings, fashioning modes of exchange, generating market representations, and establishing market norms – as levers to effect *directed* change in markets. Market experimentation thus differs from other types of market innovation in that it is designed to address specific problems. Here, outcomes of experimental changes inserted into the markets are typically observed and/or measured and corrective actions are taken, providing recursivity in the experimental process. Two caveats are important to this definition. Like other types of market innovation, market experimentation is always a collective endeavour (Humphreys, 2010). Although instigated by particular actors, it is always a hybrid collective of actors that institutes new, or changes existing, markets – or, indeed, that acts to thwart market innovation. The second caveat relates to the notion of intentionality apparent in our definition of market experiments. Here, we lean on Hawa, Baker, and Plewa (2020) who point out that even if a market innovation effort (or in our case, market experimentation) is highly intentional, actors can never predetermine the outcome of their efforts. Similarly, while we see public actors in healthcare markets at least theoretically in a strong position to lead market experiments – making intentional changes, observing the consequences of these changes, and adjusting the levers to further drive market innovation– this does not guarantee their success. Indeed, market experiments may 'misfire' (Geiger & Gross, 2018). Chimenti and Geiger (2023) for instance, describe such misfiring and the subsequent proliferation of collective market experiments in what they called a 'market of experiments' in the market for shared mobility in Sweden. Public actors became active market experimenters in some cases to foster coalition and network building; and market catalysts in others where their actions were dependent on other actors to play their parts in these market experiments (Chimenti & Geiger, 2023). In Webb and Hawkey (2017)'s case of low-heat networks, the market never materialized after an experiment instigated by public actors. This potential for misfiring begs the question as to how public actors go about leading, directing and correcting market experiments in such a way that they have lasting effects on future markets.

1.1.2. Governing market experiments

Discovering the 'how' of innovating within the intersections of healthcare and technology markets requires us to look at the market over a period of time and in a broader context (Geiger & Bourgeron, 2023). Thus, to answer our question, in line with other studies in the realm of market innovation (e.g. Nenonen & Storbacka, 2021; Lee & Hsieh, 2023), we draw on institutional theory. Where a market innovation lens helps to capture micro-processes of market change and emphasizes the hybrid collectives entangled in these processes, an institutional lens allows us to 'zoom out' to consider broader societal and technological forces that may disappear from view at the micro-level (Beunza & Ferraro, 2019). Together, these lenses provide a conceptually strong vantage point from which to theorize market experimentation.

In particular, we find Greenwood, Suddaby, and Hinings (2002, p. 59) model of "*non*isomorphic change" helpful in considering how governments may destabilize extant market practices through experiments directed toward societal ends. Employing this lens allows us to consider a broader view of market experiments – not only those formally set up as experiments but also those market innovation efforts initiated by public actors without specifying a formal experimental process and/or without anticipating specific endpoints. Stage 1 of Greenwood's model commences with 'external' social, technological, or regulatory jolts to the market structure which challenge taken-for-granted habits and norms (Sine & David, 2003, p.185). Social jolts include significant changes in social structures, such as how trust is awarded (Zucker, 1986). Technological jolts include market-disruptive technological leaps such as digital imaging technology in the photographic market (Munir, 2005). Sine and David (2003)'s description of ending a regulated monopoly in U.S. power provision is the epitome of a regulatory jolt. In terms of market experiments, this would be the point where an experiment is 'provoked', to use Muniesa (2014) language. In stage 2, the market opens up to new actors, the hierarchy and positions of existing market actors shift, and innovation begins in smaller sections of the market on a local basis. In other words, this is the stage where the experiment involves reshuffling actor networks. In Stage 3, pre-institutionalization, market actors work independently to develop and prove their proposed solutions to the challenges faced from a technical perspective (Tolbert & Zucker, 1996) – that is, in market terms, new practices are being experimented with and judged. In stage 4, theorization, individual experiments are abstracted to travel across the market (Strang & Meyer, 1993). Theorization requires a diagnosis of market failure and a prescription for its resolution (Tolbert & Zucker, 1996); it is thus tightly related to new market representations and market norms. This prescription must attain either moral legitimacy (alignment with existing norms), pragmatic legitimacy (be considered a more effective or efficient option), or both (Suchman, 1995). This legitimacy allows stage 5, diffusion, to take place where ideas as to market failings and solutions travel, gain consensus, and travel further. When ideas are taken-for-granted and imbued with cognitive legitimacy they are fully institutionalized as new market norms and the proposed innovation is now embedded in the market (Stage 6). We suggest that this destabilization, local experimentation, legitimation, and diffusion cycle resembles the broad experimental process sketched by Callon (2009). Taking this as a lens through which to view our market experiments allows us to excavate the different roles that public actors may adopt during market experimentation.

2. Methodology

We focus on two market experiments that we observed unfolding in real-time – the introduction of ehealth technology in two geographies, Ireland and the United States. In both, government sets out plans for a more innovative future healthcare market, highlighting the synergistic relationship between eHealth and healthcare innovation. eHealth, in this context, is an umbrella term that includes electronic health records, ePrescribing, and telehealth. As our review above demonstrates, we found that the market innovation literature was incomplete in helping us understand the roles these public actors undertook in triggering, stabilizing, and prescribing market experiments and anointing market actors. We embrace the ability of experiments to assemble actors, channel collective action, and make explicit actor behaviors and relationships (Chimenti & Geiger, 2023). We use these two experiments to throw light on the broadening role of governments in market innovation processes.

2.1. Case contexts

We introduce our two market experiments following Dobbin (2011)'s analysis framework for cross-country comparison of technology adoption across finance, technical coordination, and competition categories (summarized in Table 1). We chose the Republic of Ireland because it faced an enforced market change in healthcare (among other state-regulated industries), one of the last requirements of the 'Troika'[2]. The result was the development and publication of an "eHealth Strategy

[2] A colloquial term for the European Commission, European Central Bank and the International Monetary Fund who jointly provided economic bailout during the economic crash of the late 2000s and then set out particular requirements before restoring the country's financial autonomy.

Table 1
Comparing the experiments.

Characteristics (following Dobbin, 2011)	New York	Ireland	Common characteristics	Differences
Planning and Finance **ROI –** state-led and implemented (generally); no financing of eHealth. **N.Y. –** federal-led, state and market implemented, financial incentives for eHealth	• Health policy innovations such as ACOs, bundled payment, pay-for-performance, and meaningful use for EHRs (Glied & Altman, 2017) • Informal price setting by Medicare/Medicaid (Chernew et al., 2020) • Highest percentage of GDP expenditure on healthcare globally, based on prices rather than need (Laugesen & Glied, 2011) • Affordable Care Act seeks to make care more affordable.	• Mixed public and private financing/ delivery, relies on taxation. Government decides who receives free care. The market decides private care financing (Wren et al., 2015). • Ireland has highest G.P. payments (Kringos et al., 2013). • Move towards universal primary care: proportion of the population covered increased from 29 % (2005) to 47 % (2015) (Wren et al., 2015; Health Services Executive, 2016) • In 2015, c. 46 % of population held private health insurance (MillwardBrown, 2016).	• Mix of public/private financing • Moves towards greater access to care allied to cost reduction/value assurance • Mix of public/private payments • Exceptionally high payment rates in both contexts	• Mixed delivery in ROI, very limited public delivery in N.Y. • Led by Federal U.S.; implemented by N.Y. state. Led by Irish State, implemented by Health Services Executive (state agent) • U.S. – public rates informally set private rates; Ireland – private rates unrelated and uncontrolled.
Technical Co-ordination **ROI –** troika/state led and implemented. **NY –** state and federal led; implemented by non-profits.	• Pyramidal system of information integration: regional hospitals connected via RHIOS, RHIOs connected via SHINY • SHINY run by non profit (NYEC) and state funded • Financial incentives for connection at state level	• In 2013, Irish Government published 'eHealth Strategy for Ireland' (Health Service Executive, 2013) and established eHealth Ireland to develop ICT solutions for healthcare on Troika requirement (ehealthireland.ie). • Lack of prioritizing and proper budget allocation in ICT initiatives (Lolich et al., 2019) • Previous failed initiatives left a legacy of scepticism about new technology in health (Lolich et al., 2019). • Ireland has a relatively strong ICT profile but scores lower on e-health (Currie and Seddon, 2014). • Fundamental lack of interoperability at semantic, technical and system levels (Lolich et al., p.69)	• New office created to co-ordinate technical implementation • Non profit co-ordination: NYeC in N. Y., eHealth Ireland.	• ROI: state level (within the Health Services Executive) – Chief Information Officer; U.S.: federal level, Office of the National Co-ordinator. • NY: co-ordination outsourced; ROI: co-ordination in house. • U.S. – financial incentives for technical integration (state and federal levels). ROI: no financial incentives. • U.S. – all systems now connected, standards set for summary care records. ROI: no common standards
Competition **NY** – high to medium; seen as crucial **ROI** – low; seen as anti-social	• ACA decreased smaller, free-standing, for-profit agencies – particularly in metropolitan centers like New York (Torain et al., 2019). • Hospital mergers/ consolidations leading to concentration of players (Fulton, 2017) • Small number of very powerful consumers in the form of health insurers (Fulton, 2017). • Competition "critical to keeping in check premiums" in public and private markets (Glied & Altman, 2017).	• In 2011, a new government committed to universal, single-tier health service, financed by Universal Health Insurance (UHI) provided by multiple, competing private insurers. Not yet implemented/ elements abandoned (Wren & Connolly, 2016) • European principle of social solidarity (access based on need) vs conventional wisdom of payment for service (Wren & Connolly, 2016; Department of the Taoiseach, 2011)	• Both states moving towards more equitable access to healthcare • Moving towards more consolidation and hospital groups	• Philosophy – U.S.: competition seen as essential to control costs; ROI: social solidarity and means-based payment key – more about who pays than how much. • Strong distinction between primary and secondary care in ROI in terms of market; blurring of lines in U.S.

for Ireland" (Department of Health, 2013). We compare this with eHealth innovation in the U.S. where market change was a federal response to inefficiencies and inequalities inherent in the healthcare system. While we could not control inputs in the same way as a laboratory or controlled field experiment might, our cases do evidence commonalities. Both countries have exceptionally high healthcare costs, making healthcare innovation a key concern. Both countries are well-served from an information technology perspective, and both have well-developed healthcare systems. From a market perspective, both have a mix of public and private payment approaches. Most importantly for our purposes, both governments had announced eHealth as a policy priority. To achieve insights into the level of 'government' that can influence markets and their institutional contexts as conceptualized above in a highly federalized country, we focused our investigation on New York in the case of the U.S., which allowed us to narrow down the translation of federal policy and regulation at a state level (Busenitz, Gomez, & Spencer, 2000).

2.1.1. U.S. – New York

The United States holds the world record for the percentage of Gross Domestic Product spent on healthcare[3] with analysis showing this is due to higher costs rather than greater utilization or more illness (Laugesen & Glied, 2011). "In the United States, competition is a key mechanism to contain healthcare costs and improve the quality of care." (Glied & Altman, 2017, p. 1572). Despite planning and finance measures to increase competition, U.S. healthcare markets for hospitals, specialist physician organizations, and primary care physician organizations have become more concentrated (Fulton, 2017). The Affordable Care Act or 'Obamacare', sought to make care more accessible and affordable but eliminated some smaller, free-standing for-profit agencies – particularly in states with large metropolitan centers such as New York (Torain et al.,

[3] OECD Health Statistics 2022, https://www.oecd.org/health/health-expenditure.htm, retrieved 15/03/23.

2019). U.S. healthcare is now dominated by a few powerful buyers in the form of health insurers (Fulton, 2017). Competition is nevertheless still seen as holding down costs and "critical to keeping in check premiums in private markets and government programs, such as Medicare Advantage" (Glied & Altman, 2017, p. 1572).

Technical coordination of eHealth in New York is pyramidal. Regional Health Information Organizations (RHIOs) bring together local organizations, including "hospitals, clinics, home care agencies, payers, and ambulatory practices… so they can access and exchange electronic health information with participants in their region." (New York EHealth Collaborative website, accessed 29/09/20). New York's Regional Health Information Organizations are, in turn, connected by the Statewide Health Information Network for New York (SHINY), a partnership between the New York State Department of Health and the New York eHealth Collaborative (NYEC) that connects 100 % of New York State's hospitals and over 100,000 healthcare professionals.[4]

2.1.2. Ireland

Ireland's approach to competition and healthcare provision articulates a commitment to the "European principle of social solidarity" (Department of the Taoiseach, 2011: 31), but most individuals pay full market prices out-of-pocket for General Practitioner and other primary care services (Smith & Normand, 2011) with General Practitioners reimbursed by the state for medical cardholders' care. Medical cards are on a means-tested basis and entitle the holder (and dependants) to free primary and public hospital services. A primary care study in 31 countries found that non-cardholders in Ireland had the highest out-of-pocket payments for General Practitioner care (Kringos et al., 2013). This lack of universal primary care coverage makes Ireland unique in the E.U., leading to financial barriers to access, unmet need for care, and relatively high user charges (Wren & Connolly, 2016). Heavy criticism of Irish healthcare management for lack of planning and collaboration has led to multiple re-organization attempts (O'Sullivan & Butler, 2002), including instituting a single integrated healthcare management body called the Health Service Executive in 2005. Government sets the Health Services Executive budget while the executive distributes the budget amongst public healthcare service providers.

In 2013, the Irish Government published the 'eHealth Strategy for Ireland' (Health Service Executive, 2013) and established eHealth Ireland (ehealthireland.ie). Ireland remained, however, viewed as an e-health 'laggard': "there was a lack of prioritising and proper budget allocation in ICT initiatives. Failed technological initiatives in the health sector have left a legacy of scepticism about all attempts to introduce technology." (Lolich, Riccò, Deusdad, & Timonen, 2019, p. 67). Commentators also noted a lack of ICT interoperability and of systemwide thinking (Lolich et al., 2019).

2.2. Data sources

Interviews: We conducted 46 semi-structured interviews with 54 healthcare market actors. A purposive snowballing technique sought and ensured the inclusion of key groups, including healthcare providers, government, pharmaceutical companies, technology firms, non-profit organizations, academia, market experts, and patients, between 2015 and 2017 (see Table 2 below). The first author interviewed most participants face-to-face, with a small number taking place over Skype. Interviews averaged between 30 min to 1 hour. Interviews were recorded and transcribed verbatim except six where permission to record was not granted and copious notes were taken instead. The topic guide was designed to reveal the processes, particularly those that were policy-driven, that underpinned the re-organization of the market for eHealth (Bitzer, Francken, & Glasbergen, 2008). Semi-structured questions were open and non-leading with no prior assumptions as to who or what

Table 2
Anonymized list of interviewees.

Code	Descriptor	Sector
NY101	Director, Health Information Technology Research Center	Academia
NY102	Health Information Technology Policy Consultant	Market Expert
NY103	Health Information Technology Entrepreneur	Technology
NY104	Information Technology Director, Major Hospital System	Healthcare
NY105	Policy Researcher: Healthcare Information Technology	Academia
NY106	Entrepreneur and former doctor	Technology
NY107	Health Information Technology Consultant	Field Expert
NY108	Information Technology Director, Major Hospital System	Healthcare
NY109	Entrepreneur	Technology
NY110	Federal policy advisor, Health Information Technology	Government
NY111	Innovation, Major Hospital System	Healthcare
NY112	Innovation, Major Hospital System	Healthcare
NY113	Strategist, Community Care organization	Healthcare
NY114	Field Expert	Field Expert
NY115	Healthcare Connector	Field Expert
NY116	eHealth Industry Expert	Technology
NY117	General Practitioner	Healthcare
NY118	Technology Development	Pharma
NY119	Doctor and Contracting Officer, Major Hospital System	Healthcare
NY120	Chief Innovation Officer, Major Hospital System	Healthcare
NY121	Chief Innovation Officer, Major Hospital System	Healthcare
NY122	Chief Information Officer, Regional Hospital System	Healthcare
NY123	Health Education and Research Entrepreneur	Technology
NY124	Chief Medical Officer, Major Hospital System	Healthcare
NY125	Clinical Information Systems, Major Hospital System	Healthcare
NY126	Market Development, Non-Profit Regional Health Information Organization	Non profit
NY127	Federal Policy Advisor, Health Information Technology	Government
NY128	Strategist, Major Hospital System	Healthcare
NY129	Federal Legal Advisor, Health Information Technology	Government
NY130	Federal Policy Advisor, Health Information Technology	Government
NY131	State Healthcare: Quality and Safety	Government
NY132	Strategist, Community Care organization	Healthcare
NY133	Head of Information Technology, Community Care Organization	Healthcare
NY134	Federal Policy Advisor, Health Information Technology	Government
NY135	Venturing, Major Hospital System	Healthcare
NY136	Federal Legal Advisor, Health Information Technology	Government
ROI101	eHealth Manager, Mobile Phone Operator	Technology
ROI102	eHealth Project Manager, Big Pharma	Pharmaceuticals
ROI103	CEO, Health App Start-up	Technology
ROI104	CEO, Health Technology Provider	Technology
ROI105	CEO, Health Systems Software	Technology
ROI106	Operations Manager, Connected Healthcare non-profit	Non profit
ROI107	President, Connected Healthcare Non-profit	Non-profit
ROI108	Project Manager, Connected Healthcare Non-profit	Non-profit
ROI109	Head of Information & Communication Technology, Department of Health	Government
ROI110	Business Development Manager, National Development Agency	Government
ROI111	Advisor, E.U. Commission	Government
ROI112	Chief Information Officer, National Health Service	Healthcare
ROI113	Former CEO, Patient Representative Body	Patients/
ROI114	CEO, eHealth Research Center	Market Expert
ROI115	Vice President, Connected Health, technology development firm	Technology
ROI116	Research Lead, eHealth Research Center	Academia
ROI117	General Practitioner	Healthcare
ROI118	Head of Information Technology, National-level hospital	Healthcare

[4] New York eHealth Collaborative website, accessed 29/09/20.

might drive such processes. Interviews offer 'thick' descriptive data (Geertz, 2016), but they are also potentially vulnerable to retrospective sense-making by the informant (Eisenhardt & Graebner, 2007). To address this potential deficit, we combined our interviews with several other data collection points, including diverse archival data and observations (see Table 3 for an overview of data points).

Observations: The first author immersed herself as a participant observer in the physical communities of eHealth in Ireland and New York (Dewalt & Dewalt, 2010). She spent one month (October 2016) in New York attending events, meeting actors and observing their activities with time spent both pre- and post-visit observing virtual market activity through Twitter, mailing lists and webinars (see Table 4 for details). In Ireland, she was immersed in the eHealth market as Director of a university-connected health research program for four years. The second author was highly familiar with the eHealth dynamics in both geographies but remained somewhat removed from the direct field sites throughout the research and thus was able to act as a devil's advocate to ensure that the first author avoided the danger of 'going native' (Gioia, Corley, & Hamilton, 2013 p. 19).

Policy documents: We accessed eHealth-focused policy documentation, which included legislation, policy documents, and government-issued invitations to tender. We also examined documents that offered interpretations of policy by market actors such as the American Medical Association, the Office of the National Coordinator for Health Technology and political commentators such as Politico. In total, our database of documents ran to 546 pages (see Table 5 below).

E-mails and websites: The first author joined the mailing lists of the Republic of Ireland eHealth ecosystem and working group (48 e-mails from 1st November 2013 to 5th December 2017) as well as New York/U.S. based e-mailing lists from an eHealth research center, a health leaders' network, and the Office of National Coordinator for Health Technology (102 e-mails between 28th September 2016 and 5th December 2017). We also analysed relevant sections of the Office of the National Health Coordinator website that deal with governance issues (https://www.healthit.gov, 1060 out of a total of 22,000 pages) in the U.S. and the eHealth Ireland website in the Republic of Ireland (https://www.ehealthireland.ie, 24 out of a total 949 pages).

2.3. Data analysis

As described earlier in this paper, our study was initially triggered by an empirical puzzle. In the first instance, therefore, we ordered the material around the various actors in each experiment to create narrative accounts of the roles played by market actors in each territory, creating a "detailed story from the raw data" (Langley, 1999p. 695). We then inductively analyzed the data to investigate, in particular, the roles of each government in market innovation aided by NVivo qualitative analysis software. The first author organized and coded the whole body of data, while the second author repeated the process independently with a smaller portion of the data. Where our coding differed, we discussed and debated until we agreed. We then moved from sample quotes through inductive, data-driven themes to a second abductive stage, characterized by the systematic combination of the emerging data from the field with existing theory (see Fig. 1) (Dubois & Gadde, 2002; Magnani & Gioia, 2023). Over multiple coding revisits, we applied our knowledge of the markets, experimental governance, and institutional theory literatures to our informant data, focusing on the government's actions within each market innovation experiment.

3. Findings

Our comparative analysis highlights government's key roles in creating space for market innovation. We focused on government-led processes to innovate a market through a broadly experimental process, including triggering, prescribing and stabilizing the experiment and anointing market actors (see Table 6). We use these actions to define four roles for government in the shaping of markets. While each government performed some of these roles well, neither excelled in all elements. We use these differences to underline the complex intersections between government actions and market effects.

3.1. Government as trouble-maker

Our cases show each Government responding differently to the social and technological drivers and the associated innovation opportunities offered by eHealth. In both instances, however, the governments seek to disrupt the market status quo to create space for market innovation. In this context, creating 'space' is about making room for innovation – poking holes in the way things are currently done and challenging institutionalized representations of the market. The U.S. Government takes a strongly regulatory approach to trouble-making, in the form of the Health Information Technology for Economic and Clinical Health Act (HITECH Act, hereafter referred to as the 2009 Act), capitalizing on social and technological jolts to incentivize adoption and create the data spine on which innovators can build. New York State continues this trouble-making approach by translating the 2009 Act into the Delivery System Reform Incentive Payment Program, which aimed to financially incentivize care restructuring away from hospitals. As one interviewee commented: "it took the federal government with the HITECH act, also related legislation in New York, to really get things moving from an innovation perspective." (NY123). Over U.S.$7 billion of funding incentivized the disruption of existing care models based upon achieving predefined results in "system transformation, clinical management and population health."[5] Multiple agencies and entities[6] measured and tracked those healthcare standards that were linked to reimbursement through instruments such as the Delivery System Reform Incentive Payment. This market approach allowed for consumer-led entrepreneurial innovation that could not be achieved by government initiatives alone: "[governments] have to pacify anybody, everybody, and there's lobbying and so on. Whereas in a competitive marketplace it's the people who have really driven value … give a consumer technology choices that are easy to use, seamless, integrated, and make money for us, it gets there." (NY104).

The Irish government, on the other hand, largely eschews the role of trouble-maker with negative ramifications for its ability to innovate the market. The absence of a trouble-maker to instigate market experimentation is felt most keenly in Ireland two and a half years after the eHealth strategy, where red tape, bureaucracy, and the dominance of the medical profession all continue to make it virtually impossible for eHealth entrepreneurs to sell into the Irish healthcare system (strawpoll conducted at the May 2016 eHealth ecosystem event). As one interviewee commented, "One of the biggest challenges in Ireland … is to try and desperately find a way through the red tape and bureaucracy…the EHR [Electronic Health Record] for Ireland [will] not be a single one-size-fits-all EHR because the clinicians of Ireland will not accept one way of doing it." (ROI112). Even though clinicians were willing to innovate in care delivery, they were less willing to be bound by the standardized information-gathering structures necessary for eHealth (Head of Digital Transformation, quoted in Molony, Irish Independent, January 16th, 2023). By Spring 2023, Ireland still had no national EHR – a necessary infrastructural basis for eHealth innovation. Although the social and technological conditions were right and the policy framework in place, the Irish government could not legislate for the systemic change necessary to drive eHealth adoption. In short, they refused to make the trouble required to create space for market innovation.

Our cases demonstrate the difference between a situation where

[5] Medicaid Institute at United Hospital Fund, Delivery System Reform Incentive Payment Data Brief, January 2015.

[6] For example, the Agency for Healthcare Research and Quality and the National Committee for Quality Assurance.

Table 3
Overview of the data sources for each case.

Republic of Ireland
• 18 in-depth interviews with Healthcare (3), Government (3), Pharma (1), Technology firms (5), Non-profits (3), Academia (1), Field experts (1), Patient body (1)
• Observations at eHealth Ecosystem Meetings (6 – ranging from half-day to 2-day meetings)
• Documents (National eHealth strategy, Tender document for the delivery of an eHealth ecosystem, Call for proposals for a Health Innovation Hub)
• E-mailing lists (eHealth ecosystem, eHealth research center)
• Websites (e.g. eHealth Ireland)
U.S. (New York)
• 29 in-depth interviews with Healthcare (11), Government (5), Pharma (1), Technology firms (5), Non-profits (1), Academia (2), Field experts (4)
• Observations at Health Information Technology Workshop (1, 3 days)
• Relevant legislation (Affordable Care Act, HITECH Act, MACRA)
• E-mailing lists including: (eHealth research center, Health leaders, Office of National Coordinator)
• Websites (e.g. Office of the National Co-ordinator for Health I.T.

Table 4
Observations conducted.

Meeting Topic	Date	Duration
eHealth workshop (U.S.)	October 2016	2 days
Year 1 update (ROI)	June 2016	0.5 day
Project showcase (ROI)	March 2016	0.5 day
Electronic Health Records (ROI)	November 2015	0.5 day
E.U. Co-ordinators' meeting (E.U.)	October 2015	2 days
Engaging with clinicians (ROI)	September 2015	0.5 day
Pharmacy and eHealth (ROI)	June 2015	1 day

Table 5
Documents analyzed.

Republic of Ireland	Pages
Health Innovation Hub Tender Guide For Applicants	21
Health Innovation Hub Tender	12
Health Innovation Hub Tender Response Document	15
Applied Research for Connected Health (ARCH) Technology Centre Call	29
ARCH Detailed Description of Needs	24
eHealth Strategy	80
Knowledge and Information Plan	76
U.S. (New York)	**Pages**
Nationwide Interoperability Roadmap, Office of the National Coordinator for Health Technology	94
American Medical Association: Medicare Access and CHIP (Children's Health Insurance Program) Reauthorization Act (MACRA) Summary	6
Medicaid Delivery System Reform Incentive Payment (DISRIP) Data Brief	6
Politico October 2016 on N.Y. Hospitals Approach to Integration	11
Davis op-ed, Wall Street Journal, Hospital Mergers Can Lower Costs and Improve Medical Care, Sept 15th, 2014	2
George Washington University (Public Health), Department of Health Policy Consent Models by State	9
Onalytica, Digital Health Landscape 2015	12
2016 Quality Assurance Reporting Requirements, NY State Dept of Health	61
2015 Statewide Executive Summary of Managed Care in New York State	32
Office of the National Coordinator for Health Technology, Electronic Health Records (EHRs) Contracts Untangled	56
Total number of pages analyzed	546

government is willing to cause trouble and provoke a market experiment in response to social and technological jolts by deliberately adding a catalyzing regulatory jolt (New York); and one where government shies away from trouble and no such regulatory intervention is made (Ireland). In the U.S. case we see a catalytic effect of regulation on the technological set up of the market but less impact on the social structure. The non-regulatory social interventions of the Irish market experiment may have a more significant impact on this social structure. Still, there is little evidence of technology adoption as a result.

3.2. Government as king-maker

Both governments actively identified and inserted new market actors and provided them with moral and practical support – in effect 'anointing' them as future market innovators. They rearranged existing market hierarchies, demoted those who might thwart innovation and entrepreneurship, and sponsored market innovators who could create institutional space for new ways of doing things. In doing so, they actively disrupted existing market structures, including the actors involved and the relationships between them.

Ireland: A new Chief Information Officer was recruited into the Irish Health Service Executive from the U.K. to oversee change. A new advisory committee – eHealth Ireland – was created to support these efforts. The Chief Information Officer, in turn, hired multi-national consulting firms to access "the brains of the world in healthcare I.T." (ROI112). The role had no legislative basis, sat within the Health Services Executive, and resources were pre-existing ICT solutions staff who retained their original remit. Indeed, by January 2023, this Chief Information Officer's successor, the Head of Digital Transformation, resigned. A leading national newspaper quoted him as saying, *"It's normal to see resistance to new innovations being adopted, but the level of resistance … has been quite extreme…clinicians pulling for change, but the resistance is coming from administrators that do not have clinical backgrounds*." [Molony, Irish Independent, January 16th, 2023]. The Industrial Development Authority, a non-profit state-sponsored body, offered corporation tax incentives to build a more diverse and innovative healthcare market – including enterprise software players, life science, pharma and medical device industries, and the patient-centric elements provided by social networking and internet companies.

New York: Government in New York played a minimal role in king-making. At the federal level, some king-making was in evidence as the 2009 Act legislatively created the Office of the National Coordinator for Health Information Technology within the federal Department of Health and Human Services to promote a national health Information Technology infrastructure and manage its development. It also elevated and strengthened the position of the Center for Medicare and Medicaid Services, leveraging the purchasing power of federal (28.7 %) and local (17.1 %) governments to stabilize reward systems for providers and encourage innovative improvements, including telehealth and remote care. At the state level, however, rather than government inserting or sponsoring new market actors, existing actors began to consolidate and converge. As incentive programs delivered adoption rates near 100 % for EHRs, EHR providers converged into "data silos of Epic and AllScripts and Cerner, and they don't talk to each other" (NY114). Hospitals also consolidated: "There's kind of a merger and acquisition strategy within hospital groups where the big groups are buying out small local groups, there's a Wal-Mart approach to health." (NY116). Smaller technology innovations struggled to gain a foothold into this infrastructure: "The start-ups said…the number one problem is market access." (NY114). Government rarely brought patients into the mix (NY123) and there was a sense amongst healthcare practitioners of low

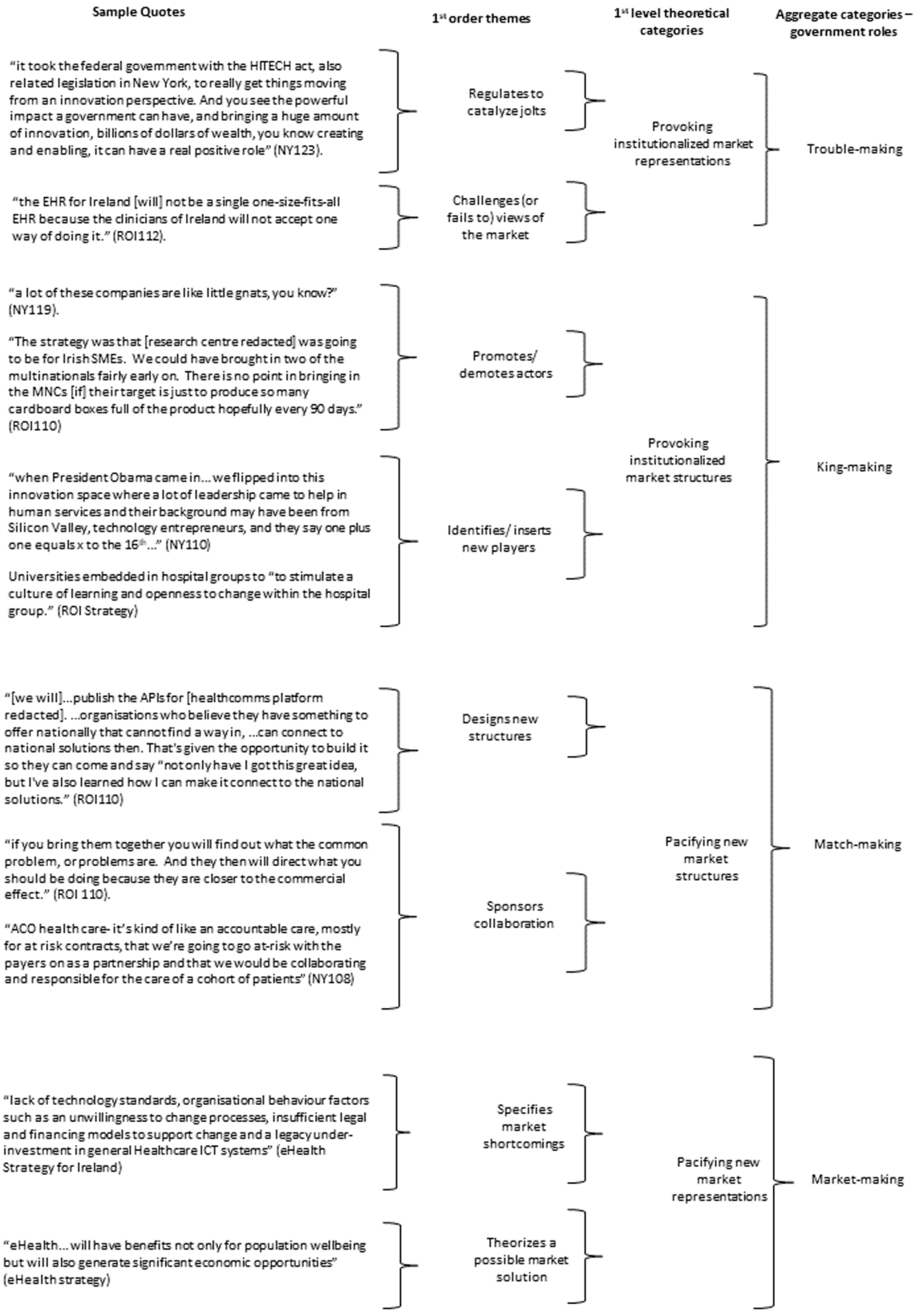

Fig. 1. Illustration of the coding process following Gioia et al., 2012, Corley and Gioia, 2004.

"adoption of technology on the patient side" (NY113).

Our findings indicate that governments-as-kingmakers play an active role in encouraging new players' emergence and actors' ascendance. In doing so, government disrupts existing market structures to create institutional space for market innovation. The government identifies and deliberately inserts new players into the market structure in both cases. Rather than waiting for new actors to emerge once an experiment has been provoked, both governments create new offices at the apex of

Table 6
Government roles in creating the institutional space for market innovation.

	Trouble-maker	King-maker	Match-maker	Market-maker
Market-innovating process	Triggering	Anointing	Stabilizing	Prescribing
Greenwood et al. Stage	Jolt; De-institutionalization	De-institutionalization	Pre-institutionalization	Theorization & Diffusion
Government Action	Regulates to catalyse jolts Challenges market perceptions	Identifies and inserts new players. Promotes and demotes actors.	Sponsors collaboration. Designs new structures.	Specifies failing. Theorizes solution.
Market effect	Disrupt taken-for-granted views of the market by challenging ways of doing and incentivizing innovation	Existing norms and market structures disrupted and de-institutionalized	Stabilizing market structures to establish new innovative norms and collaborations.	A new view of the market is established as market failings are made public with innovation represented as market solution

the market change process – the Office of the National Co-ordinator in the U.S. and the Chief Information Officer in Ireland. Our findings show that governments as king-makers play an active role in sponsoring, or 'anointing' institutional entrepreneurs during market experiments. Sponsoring suggests an upfront commitment to a cause – either through providing a financial contribution towards costs or through social and moral support.

Our experiments demonstrate distinct government approaches to king-making. The U.S. government provides retrospective financial support for change, rewarding outcomes rather than individual or organizational effort. The Irish government financially and morally supports organizations and individuals who hold the promise of market innovation. This distinction between ends- and means-based king-making of market innovators may link to differences in how technology is co-ordinated in the two markets. The U.S. government does not own the hospitals and clinics that provide care and, therefore, must outsource technology co-ordination. The Irish government owns the majority of the hospitals within the state. This greater control may mean that the Irish government is more concerned with the processes by which market change is achieved. The U.S. government's relative lack of control means that it would be difficult to measure and reward processes, and therefore, the focus is on market outcomes.

3.3. Government as match-maker

The abovementioned trouble-making and king-making approaches encouraged a more open and potentially innovative market. However, the disruption to market structures made it difficult for market actors, including innovators, to navigate this new environment. Governments, therefore, took on roles as match-makers, seeking to stabilize new market structures through the sponsorship and creation of new market collaborations and partnerships.

In May 2013, Irish hospitals were re-organized into six hospital groups, each with one associated university. At the time, the press release issued by the Department of Health explained that their goal was "to stimulate a culture of learning and openness to change within the hospital group." In early 2015 the Department of Health issued a request for tenders for the "Setup, Development and Management of an eHealth Ecosystem for the Republic of Ireland", with specific goals of breaking down silos and fostering innovation. A government-funded, university-led innovation and knowledge-transfer center opened in 2018 to spin out innovations emanating from the hospital staff. It also acts as an entry point for technology innovators who wish to access physicians. Ireland's enterprise development agency (Enterprise Ireland) insisted that collaboration was critical to legitimizing eHealth innovators, seeing collaboration as a stabilizer – de-risking engagement and managing unrealistic expectations. State investment in research and innovation centers formalized networks to facilitate structured conversations and partnerships between eHealth innovators and healthcare incumbents (ROI114) seeking to overcome the perception sometimes held by clinicians that eHealth tools were "trinkets" and "not up to clinical standards" (ROI110). The goal was to create an innovation-friendly market within which actors could collaboratively deliver the innovative products, services, and care models necessary for the Irish healthcare system.

The U.S. government focused its efforts on technology rather than networks as a market-structuring force – technically connecting actors while not actively matching them. By 2012, a unified standard for summary care records existed.[7] By 2021, 78 % of office-based physicians and 96 % of all non-federal acute care hospitals had a certified EHR compared to 34 % and 28 % respectively, just one decade earlier.[8] This would appear to connect patients and services across healthcare providers, opening the door to technology innovators. Technology innovation, however, required standardization: "Until a state like New York gets all those 22 million records connected, and the data can be exchanged and read across the state, you can't really innovate with all that data" (NY110). Compounding the issue, EHRs were typically sold by a handful of large system providers with a reputation for blocking access to ICT infrastructures – particularly for smaller eHealth vendors (NY103). Federal government did seek to re-structure vendor/provider relations by addressing information asymmetries through advisory documents such as their 2016 "EHR Contracts Untangled: Selecting Wisely, Negotiating Terms, And Understanding the Fine Print".

Match-making between the large hospital groups and eHealth start-ups was difficult and a role that the State government largely avoided. Many hospitals saw the start-ups as an irritation rather than a source of innovation: "A lot of these companies are like little gnats, you know?" (NY119). Efforts to innovate the market structure were largely led by private market actors. eHealth pilots were conducted in New York City utilizing a commercialization award from the New York City Economic Development Corporation, which funded ten projects to be run in partnership between an established healthcare organization and a start-up (NY114). The Economic Development Corporation connected eHealth buyers and sellers during twice-yearly matchmaking sessions. At the same time, privately funded health technology research and incubation centers brought together diverse people to work on innovation projects (NY101).

We see different approaches to match-making within both market experiments. The Irish government forces alliances and empowers neutral actors such as the eHealth ecosystem organizers. It funds ecosystems and research centers that link existing healthcare actors with new arrivals such as technology start-ups. The U.S. government, on the other hand, legislates to change competitive dynamics and provides information to level the market playing field for those purchasing EHRs. Its funding focus is on new organizations to manage the process of technical coordination— a king-making rather than a match-making

[7] the Consolidated Clinical Document Architecture.

[8] Office of the National Coordinator for Health Information Technology. 'National Trends in Hospital and Physician Adoption of Electronic Health Records,' Health IT Quick-Stat #61. Accessed 12 February 2023.

role.

3.4. Government as market-maker

Market-maker roles for government seek to innovate the market by creating new market norms and representations. This role involves, in the first instance, challenging existing market representations by exposing failures and then prescribing new representations in multiple formats. In both countries there were multiple diagnoses of general organizational failure in healthcare markets – from bureaucracy and red tape in Ireland to an unwillingness to share patients (and therefore data) in New York.

The Irish government spent time and effort theorizing a relatively abstract representation of a new eHealth market. The eHealth Strategy for Ireland portrayed eHealth as a possible solution to Ireland's health *and* economic challenges: "eHealth needs to be seen very much as an infrastructural investment that will have benefits not only for population wellbeing but will also generate significant economic opportunities." (eHealth Strategy for Ireland, p. 15). In January 2014, the Irish Government introduced a new model for funding public hospital care: 'Money Follows the Patient'. This model moved away from inefficient block grant budgets to "a new system where hospitals are paid for the actual level of activity undertaken. Hospitals will be funded based on the quantity and quality of the services they deliver to patients- money will follow the patient!". On the face of it, both moves diagnosed a market failing and painted a picture of a better eHealth market that innovative actors should be able to achieve. The eHealth Strategy for Ireland's policy goal was to facilitate information exchange and construct an innovation spine upon which innovative products and services could be built. The reality against which it had to work was reflected within the document itself: "lack of technology standards, organizational behavior factors such as an unwillingness to change processes, insufficient legal and financing models to support change and a legacy under-investment in general Healthcare ICT systems" (p.17). The verbal and written market representations lacked the material structures necessary to implement this potential market in terms of legislation and standardization that might support the required technological spine for health technology innovation. Would-be innovators remained unable to bankroll long public sector procurement processes, which remained despite the theorization of bureaucratic failing contained in the eHealth Strategy: "the new ideas are coming out of companies who haven't got money to pay themselves next month. So they can't wait nine months for the [public health system] to run a procurement process…" (ROI112).

The U.S. government and New York State, on the other hand, skipped the imagining of a new market representation and jumped straight to the physical shaping of a new market that lacked actor buy-in. They concentrated their efforts on legislation and standardization with relatively little evidence amongst our informants that this translated into innovative healthcare solutions. While EHRs and meaningful use did enhance potential technological capacity and, therefore, theoretically create a spine on which innovators could build, hospital staff now had less time to work with innovators as they spent more time outside the patient's room documenting their shift than inside the room improving patient treatment (NY117). Worse still, not all interviewees agreed that the EHR incentive program was conducive to innovation with one commenting that, despite meaningful use rhetoric, innovation was not an indicator or incentivized under the system as it was "an all or nothing sort of construct." (NY127). You either have an EHR or you don't – what you do with it is irrelevant. Never having bought into a different market representation, New York's eHealth market actors remained unconvinced by apparently large injections of finance and technology, dismissing meaningful use policy statements as 'rhetoric'.

Even though it is difficult to prescribe a resolution for a problem that has yet to be clearly defined (Tolbert & Zucker, 1996), both governments seem reluctant to expose preceding market failings fully. References are consistently made in both cases to the external social and technological jolts as if these are the problem. However, the regulatory and structural reform measures indicated that both governments considered an inability to share information and outdated revenue models to be key market issues. In Ireland, government-as-market-maker calls out the legacy underinvestment in I.T. infrastructure and the absence of technology standards and legal/finance models within the eHealth strategy. In New York, respondents dismiss government market-making attempts around meaningful use as 'rhetoric'. Despite much academic research that highlights the institutionalized nature of healthcare, and informant responses that indicate the blocking power of the medical profession, there is little or no government discussion of this as a general market failure. This indicates that in some markets there are holy cows of market norms that cannot be tackled, even by governments, without risking widespread resistance against market innovation efforts. In our case, criticizing those who sit at the top of the market pyramid may be too early a step for governments-as-market-makers who need to bring key market actors with them.

4. Discussion: Provoking and pacifying market structures and representations

We have outlined the four roles of government in market innovation processes. We now discuss how these roles can increase our theoretical and practical understanding of government's role in market innovation – and the complexity of such processes (see Fig. 2). In particular, we consider the dialectic relationship between 'heating up' or 'provoking' a market (Callon, 1998; Muniesa, 2014) – that is, opening it up to change – and 'cooling it down again' or pacifying its various elements (Çalışkan & Callon, 2010). From the five market subprocesses that Geiger and Kjellberg (2021) list – actors, offerings, modes of exchange, market representations, and market norms – we focus on two: market representations, which we take to include market norms; and market structures, which for our purpose includes actors, their relationships, and modes of exchange. This focus is more in line with Kjellberg and Helgesson (2006)'s original market practice model, which had three elements (normative, representational and exchange practices). It is also in keeping with our research question, where representational and normative issues appear as central concerns for 'experimental' public actors and exchange practices are often more directly controlled by public actors through policy interventions and 'hard' incentives. We discuss how public actors organize their experimental work across the different experimental stages, the actions used by government to coordinate these experiments, and the conflicts and paradoxes emerging within it.

4.1. Provoking the market into experimentation

Governments use multiple actions to innovate markets through experiments. To instigate change, the government-as-troublemaker must first 'provoke' the market out of its institutionalized ways of working.

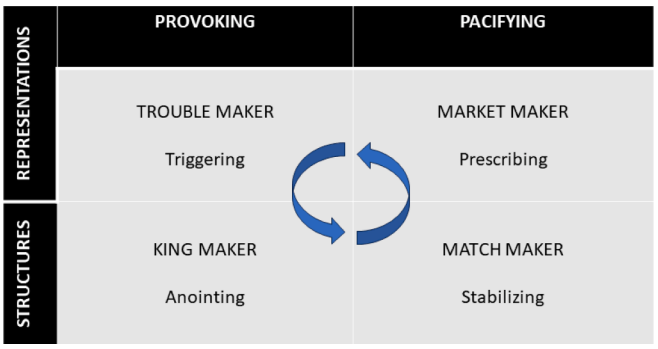

Fig. 2. Government roles in market experimentation.

Muniesa (2014)'s notion of provocation allows for a 'generative' experimentation process of iterative feedback loops between problem setting and the identification of potential solutions without the need to pre-specify them (Ansell & Bartenberger, 2016). Greenwood et al. (2002) describe three types of jolt that may assist in this task – social, technological and regulatory. Our findings suggest that regulatory jolts play a unique role when governments take on a trouble-making role. While technological and social jolts are unlikely to be created by government, a regulatory jolt often sits squarely within its remit. We suggest that market disruption begun by social and/or technological jolts can be amplified or muted by regulatory intervention. If social and technological developments contribute to a heating up of the market (Callon, 2009), a strong regulatory intervention can fuel this fire to bring the market to a melting point that allows innovation of market representations and market structures. In this way, the introduction of "new ideas and thus the possibility of change" (Greenwood et al., 2002) is both triggered and mediated by government. Government is responding to and amplifying an impetus for change, which is vital for market innovation.

4.2. Iterative and simultaneous roles to successfully innovate markets

While provocation may lead to the dissolution of current market structures and representations, if these are not channelled into new market certainties relatively quickly, it may also lead to the (stultifying) proliferation of mini-experiments, as in the case of the shared mobility market in Chimenti and Geiger (2023) study. However, given markets' agentic distribution it is also clear that a command-and-control approach to market innovation is unlikely to be successful, particularly if it happens through an experiment located 'in the wild' (Callon, 2009). We thus argue that once a market experiment is triggered, governments must adopt and adjust all four roles in an iterative cycle to innovate market representations (including market norms) and market structures (including actors and their relationships), all while taking care not to stabilize them prematurely.

Market representations institutionalize views of how a market works. Where governments seek to innovate markets, they must first challenge and shift such representations before shaping new representations – often in a co-construction process with market actors. Flaig and Ottosson (2022) have focused on this particular aspect of market innovation, seeing what they call market visions as the driving force for market innovation. Market structures may, however, mitigate against actors who diagnose market failings and propose alternative representations. To successfully institute new market representations, governments may use a different lever: they could start with disrupting market structures by identifying and inserting new actors and challenging entrenched market positions – our 'king making' role. These new 'kings' may not only provoke changes in the market's agentic distribution but may also act as 'market missionaries', promulgating new market norms and representations. At the same time, the market needs some clarity around market structure to facilitate the productive construction of new market representations. Government must, therefore, sponsor and continue to support the market missionaries to ensure that they build strong relationships and are positioned well within new market hierarchies – king-making and match-making thus need to go hand in hand.

Institutional theory indicates that theorization follows de-institutionalization (Greenwood et al.). In our proposed typology of roles, while there is no direct equivalent, this would likely mean that roles focused on market representation – particularly prescribing – would be preceded by those focused on market structures. Our cases do not unfold this way. Instead, we see governments attempting to disrupt and innovate market representations in advance of, and alongside, market structure changes. The Irish government, in particular, appears to merge the theorization of failings and solutions into de-institutionalizing professional and bureaucratic norms. Market innovators' role in providing the prescribed solutions may, however, fall foul of the institutional wars that take place in what should be a completed step. Governments in both jurisdictions, therefore, evaluated the failings they saw within the system, prescribed abstract possible solutions, and sought legitimacy for these solutions so that they could propagate widely. They also, however, also took practical steps toward inserting powerful actors into the market structures that disrupted incumbent power, drove new representations, and pacified these structures through what we call match-making practices.

Therefore, we contend that diagnosis and prescription (or theorizing failings and solutions) rely on drawing actors into a 'civilizing,' deliberative process (Callon, 2009). Our case thus supports Webb and Hawkey (2017)'s conclusions, drawn from a failed market experiment, that theorizing market failings must be a collaborative process – made more difficult by the unwillingness or inability of some actors to engage in these processes. This recourse to further 'provoking' actions – through king-making and other ways of causing trouble – may coax actors to join the market experiment. That this process is likely to be a conflictual one is evident, and we turn to this question now.

4.3. Coping with conflicts

As Flaig and Ottosson (2022) observed, taking on the role of 'market driver' to establish new market representations is unlikely to go unchallenged by market rivals or detractors, including in cases where government acts as a market driver, such as the one described by Webb and Hawkey (2017). Where Flaig and Ottosson see roles of market supporters and missionaries as ancillary yet essential to the market driving role, we detected the market experimenting public actor as deliberately inserting champions to occupy these roles. Interestingly, this can be a pre-emptive rather than reactive move. The government identifies and inserts new actors, sponsors market innovators, and promotes/demotes actors until it gets to a point where it is safer to theorize market failure as involving more powerful market figures. At the same time, as we saw in the case of New York's emphasis on technological connectivity, government may also seek to 'pacify' market structures through technological or infrastructural innovation; in that case, the public actor hopes that conflicts are de facto quelled through creating new infrastructural givens. Yet, as Webb and Hawkey (2017)'s case suggests, even this type of material match-making may be ripe with conflict; only that the conflict may materialize through contests over technical models and specifications rather than more 'overt' institutional-level power plays. In their case, conflicts were so intense that the experiment failed to innovate the market.

We suggest that king-making in this context may have a second but equally important purpose towards provoking market structures: government may devolve pacifying efforts to proxy actors who shield government from any experiments that might misfire; safeguarding their reputation and the ability to trigger future market experiments (Mountford, 2019). Our Irish case had a predecessor in the form of a failed public procurement experiment of a large-scale government information technology infrastructure in the early 2000s. As they did not at the time have a proxy to devolve responsibility to, informants frequently mentioned this case as a reason for the widespread mistrust of the government's ability to succeed in this current market experiment – 15 years after the first. This insight chimes with Beunza and Ferraro (2019)'s finding that peripheral actors may sometimes be better placed to forge the regulatory and normative networks required for market change than more central ones.

At the same time, as Chimenti and Geiger (2023) indicated, a premature closure of contests and conflicts in market experiments too is likely to backfire, particularly in later stages of the market innovation process as more and more actors get drawn into the innovated market and may destabilize it again. Where they recommended iterating between 'opening' and 'closing' experiments to balance provocation and pacification, we see this as a parallel process where pacifying actions alternate with provoking ones.

5. Managerial/practical implications

Our findings highlight the importance for public actors of a deep awareness of the societal context of the market experiment. Our U.S. case saw government using regulatory change to pragmatically legitimize and reward those who embrace new ways of working. The Irish government instead created market microcosms where new norms facilitated moral legitimacy for innovators who would not find it in the wider healthcare market. Overall, public actors acting as market experimenters must balance conceptions of problem and solution and pave the way through structural changes so that they travel, gain acceptance, and become self-reinforcing. We suggest that a one-sided emphasis may lead to inadequate policy-making, a likely failed market experiment, and continued difficulties in governing future public goods markets.

We suggest governments and their agencies refrain from casting themselves in only one role when seeking to innovate markets. A flexible outlook that allows them to transition between roles as necessary is more likely to result in success. Governments should pay close attention to the adage that one should never waste a good crisis. Our research indicates that governments must quickly follow 'natural' triggers with a regulatory intervention to fully exploit markets' innovative potential and direct them in the public interest.

6. Conclusion

Governments play critical roles in innovating the types of markets that can continue to balance market efficiencies with societal needs all while healthcare needs and associated resource demands continue to change. We suggest that market experiments by public actors might be used to innovate more equitable future market societies. We move beyond views of government as primarily confined to a regulatory role in market change and build on the market innovation literature to identify particular government roles at each stage of the market experiment, to rattle the institutional iron cage and pave the way for market innovation.

Historicity matters in market experiments as it always does in markets (Mountford & Geiger, 2020; Geiger & Bourgeron, 2023); no market is a tabula rasa and neither are market experiments. Competition and market forces are traditionally considered essential to control costs in the U.S. healthcare market. Government, therefore, assumes that market innovation requires that they incentivize new market versions. In Ireland, on the other hand, social solidarity and means-based payment are essential. Many of those involved in healthcare would not consider themselves to be actors in a market. Financial incentivization in this context may not accomplish the same agenda. Government focus, therefore, is on actors and relationships rather than market exchanges. We close, thus, by emphasizing that the broader contexts in which market experiments take place affect what roles public actors can legitimately occupy and how successful they may be.

Funding

The US element of this work was kindly supported by a Fulbright Irish Scholar Award for Nicola Mountford.

Susi Geiger gratefully acknowledge the financial support of the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement No 771217).

CRediT authorship contribution statement

Nicola Mountford: Writing – review & editing, Writing – original draft, Visualization, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Susi Geiger:** Writing – review & editing, Writing – original draft, Supervision, Resources, Methodology, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

Ansell, C. K., & Bartenberger, M. (2016). Varieties of experimentalism. *Ecological Economics, 130*, 64–73.
Baker, J. J., Storbacka, K., & Brodie, R. J. (2019). Markets changing, changing markets: Institutional work as market shaping. *Marketing Theory, 19*(3), 301–328.
Beunza, D., & Ferraro, F. (2019). Performative work: Bridging performativity and institutional theory in the responsible investment field. *Organization Studies, 40*(4), 515–543.
Bitzer, V., Francken, M., & Glasbergen, P. (2008). Intersectoral partnerships for a sustainable coffee chain: Really addressing sustainability or just picking (coffee) cherries? *Global Environmental Change, 18*, 13.
Busenitz, L. W., Gomez, C., & Spencer, J. W. (2000). Country institutional profiles: Unlocking entrepreneurial phenomena. *Academy of Management Journal, 43*, 994–1003.
Çalışkan, K., & Callon, M. (2010). Economization, part 2: A research programme for the study of markets. *Economy and society, 39*(1), 1–32.
Callon, M. (1998). *The laws of the markets*. London: Blackwell.
Callon, M. (2009). Civilizing markets: Carbon trading between in vitro and in vivo experiments. *Accounting, Organizations and Society, 34*(3–4), 535–548.
Cherrier, H., & Türe, M. (2022). Blame work and the scapegoating mechanism in market status-quo. *Journal of Business Research, 144*, 1207–1217.
Chimenti, G., & Geiger, S. (2023). Organizing the sharing economy through experiments: Framing and taming as onto-epistemological work. *Organization Studies, 44*(3), 377–400.
Cochoy, F., Trompette, P., & Araujo, L. (2016). From market agencements to market agencing: An introduction. *Consumption Markets & Culture, 19*(1), 3–16.
Cozzolino, A., & Geiger, S. (2024). Ecosystem disruption and regulatory positioning: Entry strategies of digital health startup orchestrators and complementors. *Research Policy, 53*(2), Article 104913.
Dewalt, K., & Dewalt, B. R. (2010). *Participant observation: A guide for fieldworkers*. Rowman Altamira.
Dimaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*, 147.
Dobbin, F. (2011). Why the economy reflects the polity: Early rail policy in Britain, France, and the United States. In M. Granovetter, & R. Swedberg (Eds.), *The sociology of economic life*. Boulder, CO: Westview.
Doganova, L., & Karnøe, P. (2015). Building markets for clean technologies: Controversies, environmental concerns and economic worth. *Industrial Marketing Management, 44*, 22–31.
Doganova, L., & Laurent, B. (2019). Carving out a domain for the market: Boundary making in European environmental markets. *Economy and Society, 48*(2), 221–242.
Dolbec, P. Y., & Fischer, E. (2015). Refashioning a field? Connected consumers and institutional dynamics in markets. *Journal of Consumer Research, 41*(6), 1447–1468.
Dubois, A., & Gadde, L. E. (2002). Systematic combining: An abductive approach to case research. *Journal of Business Research, 55*(7), 553–560.
Dubuisson-Quellier, S. (2013). A market mediation strategy: How social movements seek to change firms' practices by promoting new principles of product valuation. *Organization Studies, 34*(5–6), 683–703.
Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *The Academy of Management Journal, 50*, 25–32.
Finch, J., Geiger, S., & Reid, E. (2017). Captured by technology? How material agency sustains interaction between regulators and industry actors. *Research Policy, 46*(1), 160–170.
Flaig, A., & Ottosson, M. (2022). Exploring market-shaping roles: The case of liquified gas for transports in sweden. *Industrial Markeing Management, 104*, 66–84.
Fulton, B. D. (2017). Health care market concentration trends in the United States: Evidence and policy responses. *Health Affairs, 36*, 1530–1538.
Garbuio, M., & Wilden, R. (2018). Entrepreneurship in healthcare: Past contributions and future opportunities. In R. Wilden, M. Garbuio, F. Angeli, & D. Mascia (Eds.), *Entrepreneurship in Healthcare* (1st ed.). Routledge.
Geertz, C. (2016). *The Interpretation of Cultures (Text Only)*. HarperCollins Publishers.
Geiger, S., & Bourgeron, T. (2023). In the name of transparency: Organizing European pharmaceutical markets through struggles over transparency devices. *Organization Studies*.
Geiger, S., & Gross, N. (2018). Market failures and market framings: Can a market be transformed from the inside? *Organization Studies, 39*(10), 1357–1376.
Geiger, S., & Kjellberg, H. (2021). Market mash ups: The process of combinatorial market innovation. *Journal of Business Research, 124*, 445–457.
Geiger, S., & Stendahl, E. (2023). Breaching, bridging, and bonding: Interweaving pathways of social-symbolic work in a flanked healthcare movement. *Journal of Management Studies*. in press.
Giesler, M. (2012). How doppelgänger brand images influence the market creation process: Longitudinal insights from the rise of botox cosmetic. *Journal of Marketing, 76*(6), 55–68.

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational research methods, 16*, 15–31.
Glied, S. A., & Altman, S. H. (2017). Beyond antitrust: Health care and health insurance market trends and the future of competition. *Health Affairs, 36*, 1572–1577.
Greenwood, R., Suddaby, R., & Hinings, C. R. (2002). Theorizing change: The role of professional associations in the transformation of institutionalized fields. *The Academy of Management Journal, 45*, 58–80.
Harrison, D., & Kjellberg, H. (2016). How users shape markets. *Marketing Theory, 16*(4), 445–468.
Hawa, J., Baker, J., & Plewa, C. (2020). Composing markets: A framework of intentionality in market-shaping. *Journal of Business Research, 121*, 47–57.
Huff, A. D., Humphreys, A., & Wilner, S. J. (2021). The politicization of objects: Meaning and materiality in the U.S. cannabis market. *Journal of Consumer Research, 48*(1), 22–50.
Humphreys, A. (2010). Megamarketing: The creation of markets as a social process. *Journal of Marketing, 74*(2), 1–19.
Kaartemo, V., Nenonen, S., & Windahl, C. (2020). Institutional work by market-shaping public actors. *Journal of Service Theory and Practice, 30*(4/5), 401–435.
Kjellberg, H., Azimont, F., & Reid, E. (2015). Market innovation processes: Balancing stability and change. *Industrial Marketing Management, 44*, 4–12.
Kjellberg, H., & Helgesson, C. F. (2006). Multiple versions of markets: Multiplicity and performativity in market practice. *Industrial Marketing Management, 35*(7), 839–855.
Kjellberg, H., & Olson, D. (2017). Joint markets: How adjacent markets influence the formation of regulated markets. *Marketing Theory, 17*(1), 95–123.
Klein, P. G., Mahoney, J. T., Mcgahan, A. M., & Pitelis, C. N. (2013). Capabilities and strategic entrepreneurship in public organizations. *Strategic Entrepreneurship Journal, 7*, 70–91.
Kraus, S., Schiavone, F., Pluzhnikova, A., & Invernizzi, A. C. (2021). Digital transformation in healthcare: Analyzing the current state-of-research. *Journal of Business Research, 123*, 557–567.
Kringos, D., Boerma, W., Bourgueil, Y., Cartier, T., Dedeu, T., Hasvold, T., Hutchinson, A., Lember, M., Oleszczyk, M., Pavlic, D. R., & Svab, I. (2013). The strength of primary care in Europe: An international comparative study. *British Journal of General Practice, 63*, e742–e750.
Lander, B. (2016). Boundary-spanning in academic healthcare organisations. *Research Policy, 45*, 1524–1533.
Langley, A. (1999). Strategies for theorizing from process data. *The Academy of Management Review, 24*, 691–710.
Laugesen, M. J., & Glied, S. A. (2011). Higher fees paid to U.S. physicians drive higher spending for physician services compared to other countries. *Health Affairs, 30*, 1647–1656.
Lee, C. H., & Hsieh, M. H. (2023). Market innovation as an institutional reconciliation process: Two individual-level case studies. *Journal of Business Research, 169*, Article 114258.
Lolich, L., Riccò, I., Deusdad, B., & Timonen, V. (2019). Embracing technology? Health and Social Care professionals' attitudes to the deployment of e-Health initiatives in elder care services in Catalonia and Ireland. *Technological Forecasting and Social Change, 147*, 63–71.
Mazzucato, M. (2022). Collective value creation: A new approach to stakeholder value. *International Review of Applied Economics*, 1–15.
Miller, F. A., & French, M. (2016). Organizing the entrepreneurial hospital: Hybridizing the logics of healthcare and innovation. *Research Policy, 45*, 1534–1544.
Magnani, G., & Gioia, D. (2023). Using the Gioia Methodology in international business and entrepreneurship research. *International Business Review, 32*(2), Article 102097.
Mimoun, L., Trujillo-Torres, L., & Sobande, F. (2022). Social emotions and the legitimation of the fertility technology market. *Journal of Consumer Research, 48*(6), 1073–1095.
Mountford, N. (2019). Managing by proxy: Organizational networks as institutional levers in evolving public good markets. *Journal of Business Research, 98*, 92–104.
Mountford, N., & Cai, Y. (2023). Towards a flatter ontology of institutional logics: How logics relate in situations of institutional complexity. *International Journal of Management Reviews, 25*(2), 363–383.
Mountford, N., & Geiger, S. (2020). Duos and duels in field evolution: How governments and interorganizational networks relate. *Organization Studies, 41*(4), 499–522.
Muniesa, F. (2014). *The provoked economy: Economic reality and the performative turn.* Routledge.
Munir, K. A. (2005). The social construction of events: A study of institutional change in the photographic field. *Organization Studies, 26*, 93–112.
Nenonen, S., & Storbacka, K. (2021). Market-shaping: Navigating multiple theoretical perspectives. *AMS Review, 11*(3–4), 336–353.
Neyland, D., Ehrenstein, V., & Milyaeva, S. (2019). *Can markets solve problems?: An empirical inquiry into neoliberalism in action*. London: Goldsmiths Press.
O'Sullivan, T. J., & Butler, M. (2002). *Current Issues in Irish health management: A comparative review*. Dublin, Ireland: Institute of Public Administration.
Puffer, S. M., McCarthy, D. J., & Boisot, M. (2010). Entrepreneurship in Russia and China: The impact of formal institutional voids. *Entrepreneurship theory and practice, 34*, 441–467.
Sabel, C. F., & Zeitlin, J. (2008). Learning from difference: The new architecture of experimentalist governance in the E.U. *European Law Journal, 14*(3), 271–327.
Scaraboto, D., & Fischer, E. (2013). Frustrated fatshionistas: An institutional theory perspective on consumer quests for greater choice in mainstream markets. *Journal of Consumer Research, 39*(6), 1234–1257.
Sine, W. D., & David, R. J. (2003). Environmental jolts, institutional change, and the creation of entrepreneurial opportunity in the U.S. electric power industry. *Research Policy, 32*, 185–207.
Smith, S., & Normand, C. (2011). Equity in health care: The Irish perspective. *Health Economic Policy and Law, 6*.
Sprong, N., Driessen, P. H., Hillebrand, B., & Molner, S. (2021). Market innovation: A literature review and new research directions. *Journal of Business Research, 123*, 450–462.
Storbacka, K., Nenonen, S., Peters, L. D., & Brodie, R. J. (2022). Taking stock of shaping strategies: From firms driving markets for business performance to diverse actors shaping systems for sustainability. *Industrial Marketing Management.*
Strang, D., & Meyer, J. W. (1993). Institutional conditions for diffusion. *Theory and Society, 22*, 487–511.
Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *The Academy of Management Review, 20*, 571–610.
Tolbert, P. S., & Zucker, L. G. (1996). Institutionalization of institutional theory. In S. Clegg, C. Hardy, & W. Nord (Eds.), *The handbook of organization studies*. Thousand Oaks, CA: Sage.
Torain, J. M., Davitt, J., Bright, C. L., Miller, N., Chard, S., & Orwig, D. (2019). Changes in the medicare home health care market: The impact of ACA reimbursement policy. *Innovation in Aging, 3*.
Webb, J., & Hawkey, D. (2017). On (not) assembling a market for sustainable energy: Heat network infrastructure and British cities. *Journal of Cultural Economy, 10*(1), 8–20.
Wren, M. A., & Connolly, S. (2016). *Challenges in achieving universal healthcare in Ireland.* Dublin, Ireland: Economic and Social Research Institute.
Zucker, L. G. (1986). Production of trust: Institutional sources of economic structure, 1840–1920. *Research in Organizational Behavior*.

NicolaMountford is Associate Professor and PhD Director at Maynooth University's School of Business. Her research interests lie in how governments and other market actors can together find an optimum balance between the efficiency of a market and the social responsibilities of a state. Nicola held a Fulbright TechImpact Scholar Award in 2016-17 in the area of eHealth and has published papers in journals such as Organization Studies, Journal of Business Research, Studies in Higher Education, and the International Journal of Management Reviews.

Susi Geiger is a Full Professor of Marketing and Market Studies in the College of Business, University College Dublin, and holder of a European Research Council Consolidator Grant, "MISFIRES and Market Innovation," which studies activism in healthcare markets. Her research focuses on how complex markets are organized, with specific interests in digital and healthcare markets in the context of social justice concerns. She has published numerous journal articles on these issues and co-edited the volume *Concerned Markets* (2014). Susi is also a member of Access to Medicines Ireland, a non-profit group campaigning for equitable access to medicines and medical technologies.