

Fight, Flight, Fit or Follow? An evaluation of potential survival strategies for energy incumbents in a changing world

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Abstract: The energy industry is in transition. Some of the transition is due to competitive changes, more is due to technological and regulatory changes. The energy incumbents have a number of advantages and disadvantages when it comes to dealing with this challenge. In this paper we will consider how those features, and how the types of changes, impacts the firms strategic options. We will consider four options: fight, flight, fit or follow. In each case we will introduce the strategy, apply the theory behind the strategy to the case of the energy incumbents, and conclude as to the appropriateness of that particular strategy. In doing so, we aim to paint a picture of the energy industry, in terms of opportunities and threats for the incumbent energy firms.

Energy in Transition

An Existential threat

The climate is changing. Carbon dioxide (CO₂) levels today are at their highest in as much as 20 million years (IPCC, 2001), and the climate is warming as a result. The global average surface temperature increased by 0.85 °C between 1880 and 2012, and it is forecast to increase by as much as 4°C more by 2100 (IPCC, 2013). The result poses an existential challenge and, despite any supposed uncertainty, 97-100% of climate scientists agree that this is a challenge of our mankind's own making (NRC, 2008).

In 2015, therefore, 195 countries agreed, in Paris, to arrest this process. Signatories to the United Nations Framework Convention on Climate Change (UNFCCC) agreed to reduce their greenhouse gas emissions, to limit future global warming to 2°C, and to "pursue efforts to" limit the any temperature increase to as little as 1.5 °C¹. The agreement establishes a "global stock-take" which revisits the national goals to "update and enhance" them every five years beginning 2023. The French Foreign Minister called the outcome a "historic turning point" in the goal of reducing global warming.²

The Low Hanging Fruit

Given that the energy industry is a largely carbon-based industry, and given that it is responsible for more than 30% of all greenhouse gas emissions according to US estimates³, the energy industry, unsurprisingly, has been singled out for significant attention by regulators looking to meet their international climate change goals.

The German *Energiewende* (*Energy Transition*) is a perhaps the most ambitious example of the challenges faced by the energy industry. The term *Energiewende* refers to a set of documents aimed at transitioning Germany's energy industry from demand driven to supply driven, from coal-fueled to renewable-based, and from centralized generation to distributed generation (Jurca, 2015). The *Energiewende* is built upon three pillars:

1. The *Stromeinspeisungsgesetz* (Electricity Feed-In Law) of 1990 was designed to promote small-scale electricity generation, by offering a fixed feed-in tariff to all energy producers, and by requiring network operators to feed this into the grid preferentially. In doing so, it aimed to encourage an investment in decentralised renewable energy production by positively altered the economic attractiveness renewables. The *Erneuerbare-Energien-Gesetz* ("EEG") (Renewable Energy Law) of 2000 (revised in 2004 and amended in 2008, 2012, and 2014) updated and

¹ <http://edition.cnn.com/2015/12/12/world/global-climate-change-conference-vote/>

² <http://www.reuters.com/article/us-climatechange-summit-idUSKBN0TV04L20151212#gVKudBATCDOEGdxL97>

³ <https://www3.epa.gov/climatechange/ghgemissions/sources/electricity.html>

refined the original *Stromeinspeisungsgesetz*. These instruments have increased the share of renewables in the energy mix from 3% in 1990 to 52% in 2015.

2. The *Energiekonzept* (Energy Concept, 2010) is a policy document, in which the Government committed to: (1) reduce greenhouse gasses by 40% by 2020, by 55% by 2030, by 70% by 2040, and by 80-95% by 2050 compared to 1990; (2) increase the share of renewables in gross energy consumption to 40-45% by 2025 to 55-60% in 2035 and to 80% by 2050; (3) reduce the use of primary energy per unit of product by 20% by 2020 and by 50% by 2050 compared to 2008; (4) reduce the gross electricity consumption by 10% in 2020 and by 25% by 2050; (5) increase the share of electricity generation from combined heat and power (CHP) plants to 25% by 2020; and (6) reduce energy use in transport sector by 10% in 2020 and by 40% in 2050 compared to 2005.

3. The *Atomausstieg* (Nuclear Phase-Out, 2011) is a policy document, in which the Government committed to closing all of Germany's 17 nuclear reactors by 2022. In 2002, the *Atomausstiegsgesetz* (Nuclear Energy Phase-Out Act, 2002) prohibited the construction of new nuclear power plants, but in 2010 nuclear was still seen to be an important 'bridging technology' in achieving the goals of the *Energiekonzept*. After the Fukushima nuclear disaster, however, the government issued a moratorium on the 8 oldest nuclear plants, withdrew licenses that were extended just 4 months earlier, and ordered that the plants be taken off the grid, despite accounting for 17.2% of Germany's energy needs. Today, 9 of Germany's 17 nuclear reactors have already been shut

The result has been "the greatest political and economic challenge Germany has faced since reconstruction after the Second World War", according to a former German Environment Minister, and one which Weber and Kisesl (2014) estimate will cost €27 billion a year until 2050 or, according to the *Wall Street Journal*, about €1 trillion in total.

Table 1 – The German Big 4 Energy Incumbents
From Sühlsen, M. Hisschemöller (2014)

Name	Description	Revenue (2011)	Employees (2011)
E.ON	Investor-owned electric utility	112.954	83,097
RWE	German electric utility	49.153	74,919
EnBW	Publicly traded German electric utility	13.000	20,500
Vattenfall	Electric utility (principal shareholder: Swedish holding company Vattenfall)	1.269	9,400

Of course, the energy incumbents have had to bear many of the costs of these changes. Prior to the *Energiewende*, the German market was a classic oligopoly, dominated by four firms: *EnBW*, or *Energie Baden-Württemberg AG* (founded 1997), a public company, controlled by its largest shareholder, the State of Baden-Württemberg, has an installed capacity of 13.7 Giga-Watts; *E.On* (2000) and *RWE*, or *Rheinisch-Westfälisches Elektrizitätswerk AG* (1898), two independent stock listed companies, have installed capacities of 18 and 26.5 Giga-Watts respectively; and *Vattenfall* (1909), a Swedish state-owned company, has an installed capacity in Germany of 15 Giga-Watts. In 1990, these four owned and controlled 80% of Germany's installed energy capacity. Since the *Energiewende*, however, these so-called Big 4 have had to deal with: (1) the uncompensated loss of their nuclear reactors; (2) the introduction of a subsidy that brought new entrants to the market, and changed the nature of the market; and (3) an expansion in the supply of energy, reducing the price, which, in turn, reduced the ability of the incumbents to create value with their non-nuclear non-renewable energy sources. Today, renewables account for 52% of the installed capacity, and for as much as 25% of German energy needs. Germany has installed 39 Giga-Watts of capacity in photovoltaics (2015), up from 0.3 in 2002, 41 Giga-Watts of capacity in on-shore wind (2015), up from 11.9 in 2002, 2.7 Giga-Watts in off-shore wind (2015), up from 0 in 2002, 8.6 Giga-Watts of capacity in biomass (2015), up from 1.6 in 2002, and 5.5 Giga-Watts of capacity in hydropower (2015), up from 4.9 in 2002, or a total of 98 Giga-Watts in renewables ⁴. Importantly, less than 5% of this capacity is controlled by the Big 4 (RAP, 2015). Atomistic producers – mostly private citizens and farmers – control more than 46% of the installed renewable capacity, and banks and investment funds, searching for rents, account for more than 50% of renewable investments (RAP, 2015). As more players have entered the market, as production has been increasingly decentralised, and as consumers have become 'prosumers' – both producing and consuming energy – the level of dependence of consumers on the Big 4 centralized producers has declined. The impact on the Big 4 -- who have been slow to adjust to this new reality -- has been nothing short of catastrophic: E.On and RWE, for example, the two stock listed firms, have seen their market values in Germany drop more than 70% between 2007 and 2014, from €92 billion and €53.5 billion to €25.6 billion and €15.5 billion respectively.

Keep Calm and...

So what can the energy incumbents, in Germany, but in other countries too facing similar changes, do to deal with the transition? The strategy literature identifies a number of possible responses. These we term 'fight', 'flight', 'follow' and 'fit', and in this paper we will describe each strategy, apply them to the energy incumbents, and conclude as to their appropriateness for an industry dealing with these challenges.

⁴ https://www.energy-charts.de/power_inst.htm

Possible Strategies for Energy Incumbents

Strategy 1: Fight – Just Bob and Weave

Porter (1980) explained firm performance in terms of industry attractiveness. His famous five forces model suggests that the level of rivalry, the threat of entrants and substitutes, and the level of buyer or supplier power defines industry profitability.

In 1994, Oster added government, as a 'sixth force', arguing that "government actions affect the competitive advantage of firms and industries, and can therefore increase or decrease industry profitability" (Vining, et al., 2005, p.150). Baron (1995) explains, however, that there are important differences between 'market' and 'non-market' players; to begin with, the firm can 'choose' to interact with market players, such as suppliers and consumers, but has no choice but to interact with non-market players, such as the government. To build a competitive position, therefore, Baron suggests that the firm must develop a market strategy, which positions the firm against Porter's five forces, and a non-market strategy, which positions the firm against the regulatory environment in which it is embedded. By developing a non-market strategy, and by engaging with non-market forces, such as the government, non-market strategists suggest that opportunities can be created, and threats can be disarmed (Hillman and Hitt, 1999, Baron, 2001; Post et al., 2002; Spar et al., 2003; Hillman et al., 2004)

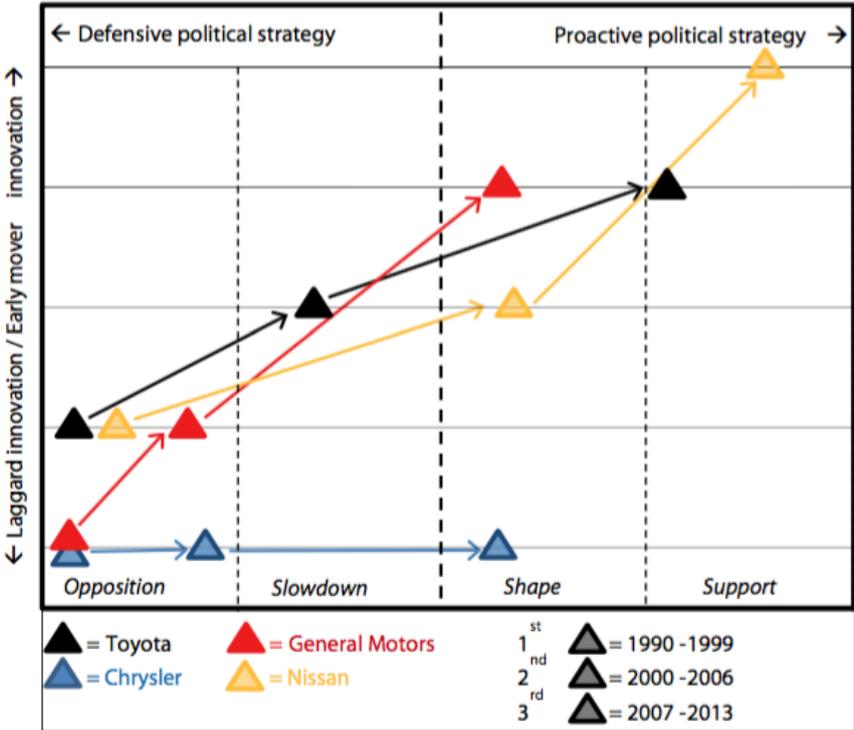
Practically speaking, Hillman and Hitt (1999) propose three ways in which the firm can influence its regulatory environment: information, financial incentive and constituency building. 'Information strategy' focuses on giving policy makers the information that they need to develop their plans. Lobbying, special studies and reports fall under this heading. 'Financial incentives' target political decision makers by giving them financial resources through contributions to candidates or political parties, and by providing them with volunteers (Schuler et al. 2002, Austen-Smith, 1993). Finally, 'constituency building' strategies seek to create awareness amongst interested groups -- such as activists, the media, and industry coalitions -- in an attempt to increase the firm's political influence on regulators (Baysinger et al., 1985; Lord, 2003). Not only is there ample evidence to suggest that firms engage in non-market strategy -- Holburn and van den Bergh (2013), for example, show that acquiring firms in the US utilities industry increase their contributions to political parties the year before announcing controversial acquisitions -- but there is ample evidence to suggest too that non-market strategies work -- Stratmann (1991), for example, shows how in 1985, a contribution of \$3,000 to the US Congress led to the survival of a sugar subsidy, worth \$465 million annually.

There are, however, many different non-market objectives. Oliver and Holzinger (2008) differentiate between the 'value maintaining' and 'value creating' non-market strategies, or objectives. Value maintaining strategies are 'defensive strategies', they explain, aimed at preserving the firm's assets and competencies and position in the market. Tobacco

companies are the classic case here; as Philip Morris explained in 1991, with an internal memo, the company would use “direct lobbying, the media, and industry allies to minimize state and local tax increases, promote accommodation in public places and preserve the industry’s freedom to advertise and promote cigarettes to adult smokers” (reported in Givel and Glantz, 2001). ‘Value creating’ strategies, by contrast, are ‘proactive’ strategies, aimed at creating new assets or competencies and new market positions. As an example, Bach and Allen (2010) describe how Toyota took advantage of regulation in California, to grant its low-emissions hybrid Prius model access to the state’s carpool lanes, even with only a single occupant. In doing so, and with minimal financial investment, Toyota was able to give its product a competitive advantage.

There is little research, to the best of our knowledge, considering the long-term viability of these two strategic options. The anecdotal evidence, however, seems to suggest that value maintaining strategies cannot be used in the face of changing social preferences. The tobacco industry, for example spends hundreds of millions annually on ‘massive lobbying and misinformation campaigns’ (Palazzo and Richter, 2005). The result seems only to delay the inevitable, and the industry today is more regulated than ever before. The telecommunications industry too spent hundreds of millions attempting to prevent European regulators from scrapping roaming charges (Bach and Allen, 2010), but the result was only to delay the inevitable, and roaming charges are to be scrapped.

Figure 1 – Changing strategies.
 Reproduced from Wesseling et al (2015)



Wesseling et al (2015) hint, however, that in the face of changing social preferences, a 'value creating' strategy may be more useful. Wesseling et al (2015) study the way in which car manufacturers responded to regulation in the US, over a twenty-year period, which they divide into three periods (Figure 1). In the first period, (1990-1999), and when the manufacturers were first presented with the proposed zero-emissions legislation (ZEV) in 1990, Wesseling et al (2015) reports that the four major car manufacturers adopted defensive strategies to oppose the legislation. In the second period (2000-2006), three of the four maintained a defensive position, but Nissan invested in innovation to meet the change, moved to a 'proactive' position, and began to help shape the legislation. Finally, in the third period (2007-2013) three of the four had invested in the necessary innovation to meet the change, but all four had moved to a proactive position. Nissan, however, emerged as the winner, with early mover advantages that gave its products a competitive advantage over the laggards.

We can draw three conclusions when applying this literature to the energy incumbents. Firstly, it is clear that the energy incumbents should have a non-market strategy; as Holburn and Vanden Bergh (2006) explain, firm performance depends as much on the ability of the manager to shape their regulatory framework, as it does on their ability to succeed directly in the market place. Secondly, it appears that 'value maintaining' non-market strategies are only useful in delaying regulations that reflect changing social preferences; the tobacco industry has, after 50 years of 'denying [the] risks and manipulating [the] information', 'lost all credibility', and is today 'confronted with massive distrust from their relevant publics' (Palazzo and Richter, 2005, p388). Finally, it appears that those firms that work with the change, and adopt an active position, perform better to those that take only a defensive position; as Wesseling et al (2015) show, there are first mover advantages to be had for the firm that break ranks.

Our advice to the energy incumbents, therefore, would be to work with the regulators, to adopt 'active' rather than a 'defensive' position when it comes to shaping the regulation which society is demanding, and to avoid the becoming the new tobacco industry.

Strategy 2: Flight – Far Away Fields are Greener

'Flight' describes a strategy in which the firm exits the market. The purpose of a 'flight' strategy is to avoid changes in the market environment, but exiting the market.

'Exit' can mean one of two things. Firstly, it can mean 'geographic market diversification'; German energy suppliers, for example, might look to Austria to escape German regulation. Secondly, it can mean 'product market diversification'; energy firms, for example, might look to diversify into health care, to avoid energy regulation. Neither option, according to the 'theory of competitive advantage', is a serious option for the incumbent firms in the energy industry looking to deal with the transition.

'Competitive advantage' is an advantage that a firm has over its competitors, which allow it to generate greater sales or margins and/or retain more customers than its competition. Porter (1985) suggests that competitive advantage originates in 'all the moves and approaches a firm has taken and is taking to attract buyers, withstand competitive pressures, and improve its market position'. Helpfully, Porter (1985) also identifies a number of generic strategies for gaining competitive advantage⁵.

Resource-based scholars, by contrast, suggest that competitive advantage originates not in the firms actions, but the 'bundle of resources' that it owns and controls (Barney, 1986; Wernerfelt, 1984, Rumelt, 1984; Penrose, 1959). 'Resources' include tangible resources -- such as machinery and building -- and intangible resources -- such as patents and trademarks. De Beers, for example, built its competitive advantage on a tangible recourse, in that it controlled 90% of the world's diamond producing mines in 1902, while Coca-Cola built its competitive advantage on a intangible recourse, in that it two-thirds of Coca-Cola's value is derived from its brand name and image.

Resources can also, however, include what Amit and Schoemaker (1993) call 'capabilities'; these are " organizationally embedded non-transferable firm-specific resource whose purpose is to improve the productivity of the other resources possessed by the firm" (Makadok, 2001, p389). Capabilities are what the firm can do with what it owns, and includes, for example, marketing capabilities, or customer relations. Amazon, for example, has a competitive advantage, for example, in its distribution network, while Google's competitive advantage lies in its human resource policies. In all cases, resource based scholars suggest that to be 'sustainable' -- that is, for a competitive advantage to persist despite efforts by competitors or entrants to duplicate or neutralise it - the firms resources must be "heterogeneous in nature and not perfectly mobile" (Peteraf, 1993, p180); that is, the firms resources need to be 'valuable', 'rare', 'inimitable', and 'non-substitutable' or, in the language of the resource-based view, 'VRIN' compliant.

Two additional streams of literature are necessary to translate this idea of competitive advantages of the case of energy incumbents looking to exit their existing market.

The first - the literature on organizational behavior - warns that diversification is rarely a value-creating strategy. This suggests that whether firms create value with their strategic choices, a-la-Porter, or with the value-adding resources and capabilities that they bundle, according to the resource based scholar, firms 'shape' themselves and optimize their operations for the specific needs of their industry. Consequently firms that diversify into another industry never quit 'fit' the needs of the new market.

⁵ Porter identifies three generic strategies: the 'low-cost leadership', the 'differentiation', and 'focus' or 'niche strategy'. The low cost strategy adopted by, for example, Ryanair, see firms enact strategic decisions aimed at driving down costs, which allows the firm to charge low prices. The differentiation strategy adopted by, for example, Apple, see firms enact strategic decisions aimed at adding value, which allows the firm to charge higher price. And the focus strategy adopted by, for example, Body&Fit, see firms enact strategic decisions aimed at satisfying the needs of a specific market segment, with high or low prices.

Just because De Beers, for example, owned 90% of the world's diamond producing mines in 1902 (a tangible resource), just because Coca-Cola earns 60% more than its competitors using the same inputs, because of its brand name (an intangible resource), and just because Amazon has revolutionized the book market, due to its capabilities in distribution, it doesn't necessarily follow that De Beers, Coca-Cola, or Amazon would be successful in the automotive industry. De Beers, Coca-Cola, and Amazon are successful, because they have made strategic decisions, and have 'bundled' the resources and capabilities necessary to create value in their respective industries, and by diversifying out of their industries, these companies would, therefore, damage their value.

Diversification was once thought to be a value-generating strategy (Martynova and Renneboog, 2008), because diversified firms had fewer risks in any one market (Lewellen, 1971; Higgins and Schall, 1975; Shleifer and Vishny, 1992). Today, however, it is recognized that diversification creates severe inefficiencies (Jones and Hill, 1988; Rajan et al., 2000; Shin and Stulz, 1998; Lancaster, 1990; Grant et al., 1988). These inefficiencies increase with the level of diversification (Hitt et al., 1994), and destroy firm value, to the point that the costs of diversification are typically found to outweigh the benefits (Lichtenberg, 1992; Liebeskind and Opler, 1993). Of course, there are many cases of successful diversifications. Virgin, for example, was founded as Virgin Record, a music record shop, but through ambitious diversifications, Virgin Group now includes 400 companies in the travel, entertainment, lifestyle, financial services, transport, healthcare, food and drink, media and telecommunications industries. Still, *ceteris paribus*, the evidence is that firms that diversify into a new market incur a 'discount', due to the operational and managerial costs, but also due to the misfit between their resources and capabilities and those that are needed in the market. For this reason, diversification, and product-market exit, tend to be frowned upon.

The second stream of literature – the international business literature – warns that internationalization is also a difficult strategy with which to create value. Again, whether firms create value with their strategic choices, *a-la-Porter*, or with the value-adding resources and capabilities that they bundle, according to the resource based scholar, firms 'shape' themselves and optimize their operations for the specific needs of their home country. Consequently firms that diversify into another country face what has been termed this 'liability of foreignness' (Hymer, 1976). This is the set of costs "based on a particular company's unfamiliarity with and lack of roots in a local environment, the costs resulting from the host country environment, such as the lack of legitimacy of foreign firms and economic nationalism, and the costs from the home country environment, such as the restrictions [in terms of with whom the firm can do business]" (Zaheer, 1995, p.342). Eden and Miller (2001) use the metaphor of a "stranger in a strange land" (p. 4) to summarise: the "stranger", they suggest, is someone that the locals do not know or understand, leading to a discrimination hazard, and the "strange land", they suggest, leads to a unfamiliarity hazard, with respect to the local cultural, political, economic and regulatory environments. In the context of cross-border

acquisitions, this sort of 'foreignness' suggests that, even in the absence of cultural and institutional differences, cross-border firms are at a disadvantage when it comes to accessing and to understanding their market. The existence of this liability has been the fundamental assumption driving theories of the multinational enterprise (Buckley and Casson, 1976; Dunning, 1977; Caves, 1982; Hennart, 1982) and empirically, foreignness is known to impact both firm performance and firm survival rates (Zaheer, 1995; Young and Nolle, 1996; Zaheer and Mosakowski, 1997; Miller and Parkhe, 2002; Mezias, 2002).

International business scholars also warn, however, that many competitive advantages are 'location bound' (Verbeke, 2009). 'Location bound' advantages are advantages which are embedded in the home environment, meaning that they lose value when they are transferred or applied to other geographical contexts (Cuervo-Cazurra *et al.*, 2007; Jensen & Szulanski, 2004; Kostova, 1999; Simonin, 2004). Albert Heijn (AH), for example, is a Dutch supermarket chain with location bound advantages. Founded in 1887, AH is the largest and oldest supermarket chain in the Netherlands. It is widely seen to be a Dutch institution and, in a densely populated, bike-friendly country, its strategy has been to ensure that its shops are within biking distance of as many people as possible. AH therefore, has enjoyed quite some success in the Netherlands. Suppose, however, that AH transferred its business model to a sparsely populated, car-friendly country, like the United States. In the United States, the strategy of having a shop within biking distance of everyone clearly would not work, and without its history, and its label as a Dutch 'institution', it is likely that AH would struggle to survive. AH is successful, in other words, because it has fit itself to the needs of the Dutch market, and the resources and capabilities that it has accumulated over years, would leave it ill prepared to compete in the US market. AH's competitive advantages, in other words, are location bound. This reasoning has been used to explain why many international expansions fail. Target, for example, a large US retailer with a 100+ years of experience and 1,800 shops in the US, was said to have failed in Canada (2015) due to its inability to transfer its reputation (an intangible resource) as a low-cost retailer across the border; it lost \$2.1 billion in 4 years as a result, and eventually exited the Canadian market (2015). Again, there are, of course, exceptions, and there are, of course, many cases of firms that expanding into new markets, only to outperform their previous position. For example, Primark, an Irish company, only has 35 (12%) of its 290 stores in Ireland, and IKEA, a Swedish company, only has 20 (5%) of its 384 stores in Sweden. On average, however, research shows that, all else equal, firms that expand across borders, tend to underperform, and for this reason, internationalization, and geographic-market exit, tends to raise questions.

The literature on organizational behavior therefore leads us to conclude that product market exit would only be an option for the energy incumbents if: (1) they were willing to incur significant losses in the value of their current (energy) market-specific resources and capabilities, which would be less relevant in a new industry; and (2) if they had the financial resources, and the managerial abilities, to acquire new resources and capabilities necessary, which were more relevant to that industry. And the

international business literature leads us to conclude that geographic market exit would only be an option for the energy incumbents if: (1) they were willing to incur losses in the value of their current (home-country) market-specific resources and capabilities, which would be less relevant in a new country; (2) if they had the financial resources, and the managerial abilities, to acquire or to develop the new resources and capabilities necessary, which were more relevant to that country. It should be noted, however, that geographic market exit only makes sense if the sorts of regulations that the incumbent was seeking to avoid in the home country would not follow it to the host. If they do, which is highly likely because 190 countries are part of the current climate discussion, the costs of geographic exit, in terms of the 'liability of foreignness' and the effort to develop non-location bound competitive advantages, or to develop new location boulder competitive advantages for the host country, will have to be incurred again.

In sum, therefore, our advice to the energy incumbents would not be to adopt a 'flight' strategy, either in terms of looking to new markets, or to new product markets, because doing so, in either case, would devalue the firms existing competitive advantages.

Strategy 3: Follow – If you Can't Beat em'...

'Follow' describes a strategy in which the firm follows the trends, mimics the new entrants and attempt to match it's offering to the changing needs of the market. The purpose of a 'follow' strategy is to match the firm to the new market environment. Two literatures suggest, however, that a 'follow' strategy is unlikely to be a value-creating strategy for energy incumbents. The first is the literature on innovation.

This suggests, again, that whether firms create value with their strategic choices, a-la-Porter, or with the value-adding resources and capabilities that they bundle, according to the resource based scholar, firms 'shape' themselves to the needs of their market. The market, however, is not stationary (Schumpeter, 1942), and as the market's needs change, so too do the value of the firm's competitive advantage. Take, for example, the case of Blockbuster. Founded in 1984, Blockbuster employed 60,000, and operated 9,000 video rental stores at its peak in 2004. In the off-line era, location mattered, and Blockbuster's real-estate seems to be an insurmountable competitive advantage. As the technology changed, however, so too did the consumers preferences. Netflix saw an opportunity; it entered the market, and began streaming movies online in 2007. By 2016, Netflix served customers in 190 countries, and enjoyed revenues of \$6,7 billion, while Blockbuster, saddled with huge volumes unproductive real-estate, shrank to 51 franchise stores, in one country. As the market and its needs changed, the same resource which once protected Blockbuster became a millstone around Blockbusters neck.

This process, known as Schumpeter' (1942) 'gale', or the process of 'creative destruction', means that as market evolve, the value of the firms competitive advantages change. Quiet periods, dominated by one type of firm, end with 'shocks', or

'discontinuities', that destroy the old firm and the old market, and create new firms and new opportunities with new competitive advantages. This logic has been used to explain why day giants, like Nokia and Blackberry lost out in their core businesses, to Apple, a new entrant, and why Apple is, itself, destined to be overtaken in the future.

So why did Blockbuster lose the battle? The standard explanation is that smaller firms are smarter, and more 'nimble', while larger firms are bureaucratic and 'myopic' (Besanko et al., 2009). An extensive literature argues that incumbents have organizational difficulties dealing with new technologies (Anderson and Tushman, 1997; Henderson and Clark, 1990; Christensen, 1997). Foster (1986) talks about the "attacker's advantage" and Christensen (1997) describes the "innovator's dilemma," and detail many instances of incumbents over-allocating resources to incrementally improve their existing businesses, at the neglect of paradigm-shifting innovation needed to survive technological discontinuities. Two arguments are put forward to explain why incumbent firms refrain from investing in the right innovations. Firstly, the 'sunk cost' argument suggests that there are asymmetries between a firm that has already committed to a given technology – and has already invested in resources and organizational capabilities – and another that is planning a commitment (Kaplan et al, 2003). It would be more expensive, this reasoning suggests, for Blockbuster to change, from the franchising strategy to online-streaming, due to the sunk costs that it has already incurred, than it was for Netflix to incur the costs of investing in online-streaming upfront. Secondly, the 'replacement effort' argument suggests that, assuming equal innovation capabilities, an entrant has higher incentives to invest in radical innovation than an incumbent (Arrow, 1962). The incumbent, the reasoning goes, is already in the market, and in the case of Blockbuster, was already dominant in the market. It, therefore, had far less to gain by 'disrupting' the market that it is winning. The entrant, by contrast, has a world to win from investing in disruptive innovation. Together, therefore, this literature suggests that Blockbuster lost the race with Netflix, because Blockbuster 'shaped' itself to meet the needs of its market, incurred costs in the process and then, as the market changed, underinvested in the innovation that was necessary to re-shape itself to meet the new needs of the new market. Once Blockbuster realized the threat, followed Netflix and invested in online options, it was too late.

Applying this logic to the energy incumbents, the suggestion is that the incumbents are, by definition, likely to lose any innovation race. The energy incumbents shaped themselves to meet the needs of the old market, and re-orientating themselves to meet the new needs of the market will be costly, time consuming and, in the end, ineffectual.

The second literature to raise questions regarding the follow strategy, the literature on first mover advantages (Lieberman and Montgomery, 1988), can also be used to explain the case of Blockbuster. First mover advantages are the advantages gained by the initial ("first-moving") firm to occupy a specific market segment. This literature suggests that firms that build first-movers advantages can shape the market to the firm's competitive

advantage, and can limit competition by blocking additional market entry. First mover advantages arise from three sources (Lieberman and Montgomery, 1988).

Firstly, technological leadership is a first mover advantage that comes from 'learning' (Wright, 1936) or 'experience' curve effects (Henderson, 1984), which reduce production times and costs (Spence, 1981; Shaw and Shaw, 1984; Mansfield, 1985; Lieberman, 1987), and /or from 'R&D races' (Bright, 1949; Mansfield et al., 1981; Gilbert and Newbery, 1982; Reinganum, 1983; Fudenberg et al., 1983; Levin et al., 1984; Robinson, 1988), which create barriers to entry. Xerox, for example, was famous not only for extensively patenting in its own technological domain, but by patenting in a number of complimentary technological domains too, to prevent the emergence of substitutes. Next, 'preemption of assets' is a first mover advantage that comes from making preemptive investments to control critical assets. By preemptively acquiring production inputs, such as access to natural resources (Main, 1955), by preemptively acquiring geographic or product characteristic space (Prescott and Visscher, 1977; Schmalensee, 1978; Roa and Rutenber, 1979; Eaton and Lipsey, 1979, 1981), or by preemptively investing in plants or equipment (Spence, 1977; Dixit, 1980; Gilbert and Harris, 1981; Eaton and Ware, 1987), firms, this literature suggests, can construct unassailable positions, and in doing so deter entry. Pepsi and Coke, for example, preempted future new entrants to the soda business by taking up most of the shelf space for soda in stores, while Walmart preempted future new entrants in the retail market, in the south western US, by saturating contiguous town with stores. Finally, 'switching costs' are a first mover advantage that makes it more expensive for later entrants to attract consumers (Afuah, 2009). There are three types of switching costs: (1) switching costs that the buyer incurs in terms of learning to use a new product; (2) switching costs that the buyer incurs by adapting to the characteristics of the product; and (3) switching costs that buyer incurs due to the intentional efforts of the seller to lock-in their consumers (Wernerfelt, 1985, 1988; Klemperer, 1986). Microsoft is perhaps the classic example. Despite the fact that there are dozens of alternatives, hundreds of which are free, Microsoft Office, remains the industry standard. The implication, therefore, is that consumers still prefer to pay \$1,000 for the software that they know, rather than incur the switching costs of having to learn a new system, even if that system were for free.

Of course, there are many examples of second-movers winning markets; second-moving Nintendo won the home video gaming market created by first-moving Atari, Facebook beat MySpace in the social networking market, Google beat Yahoo in the market for online search engines, and Apple beat Blackberry in the smartphone market⁶. Still, the suggestion is that first movers have significant, and often insurmountable, advantages.

Applying the logic of the switching cost literature to the energy incumbents, the suggestion is that the incumbents will find it hard to 'follow' the new entrants in supplying the new markets needs. The energy incumbents are have first mover advantages in the

⁶ Often, however, second movers tend to be 'fast followers' (Kerin et al., 1992)

traditional energy segment, but the new entrants to the alternative energy segment are likely to capture the first mover advantages in this market. It is likely, for example, that the new entrants have 'technological leadership' advantages, in terms of market access and intellectual property, 'preemption of asset' advantages, in terms of product characteristics, and 'switching cost' advantages, in terms of consumers that are unwilling to switch to the incumbents in search of their alternative energy needs.

Together, therefore, the innovation literature suggests that the incumbent is likely to lose any innovation race with the entrants, and the first-mover literature suggests that the incumbents are already disadvantaged relative to the entrants when it comes to serving this market. In sum, therefore, our advice to the energy incumbents would not be to adopt a 'follow' strategy. Any attempts to 'mimic' the entrants, this literature suggests, would relegate the incumbent to, at best, a second place position in the market.

Strategy 4: Fit – Rebuilding from the Roots Up

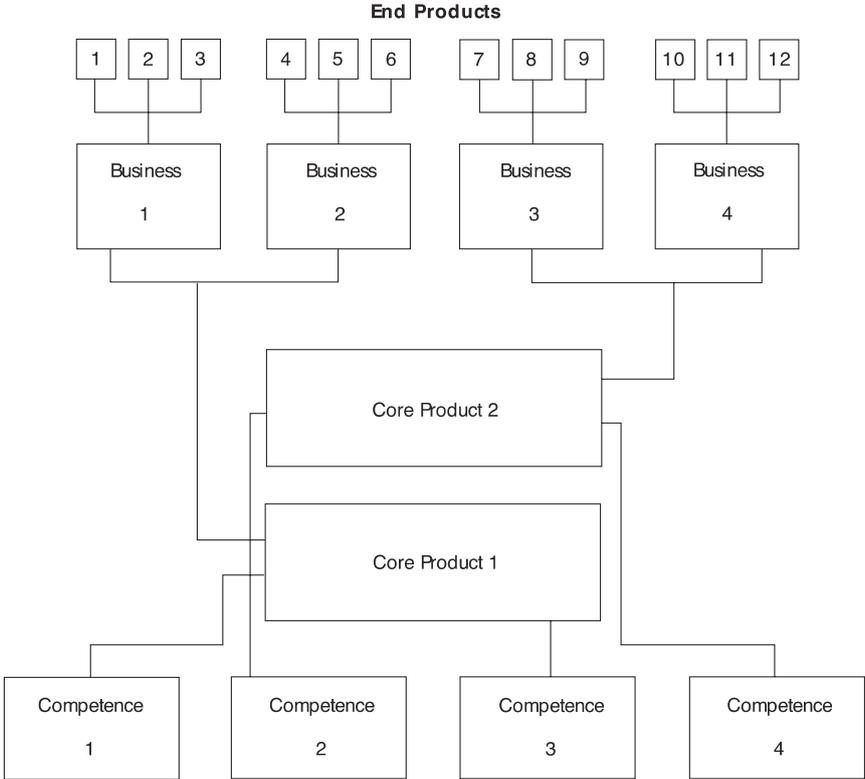
'Fit' is the final strategy. Fit describes a strategy in which the firm accepts the trends, and looks to its 'core competencies' to redefine its position within the new market.

The concept of 'core competency' was introduced by Prahalad and Hamel. In 1990, they observed that, while Western firms tended to conceive of themselves as 'a portfolio of businesses' -- that is, they were built around 'core businesses' or 'strategic business units' -- Japanese firms tended to conceive of themselves as 'a portfolio of competencies' -- that is, they were built around skills. For example, Xerox conceived of itself as a photocopy company, Philips conceived of itself as a consumer products firm, and Chrysler conceived of itself as a car company. Meanwhile, Canon conceived of itself as a specialist in optics, Sony as a specialist in miniaturization, and Honda as a specialist in engines. This, seemingly moot distinction, meant that many of the 'largest and best managed firms of the 1970s and early 1980s, such as IBM, General Motors, Caterpillar, Xerox, Sears and DEC' lost the battle when pitted against their Japanese rivals in the mid- to late-1980s (Prahalad and Hamel, 1994, p.6). Because when the car market stalled, Chrysler, the 'car company', ran into problems, but Honda, the engine company, grew by 200%, by creating markets for its engines in motorbikes, off-road buggies, and boats. Chrysler focused on its 'core business', while Honda focused on its 'core competency'.

A core competency, according to Prahalad and Hamel (1990) is more than a single resource; it is the "harmonized combination of multiple resources and skills" (p.12). Prahalad and Hamel (1990) use the tree as a metaphor (see Figure 1): the trunk and the major limbs, they suggest, are the core products, the smaller branches are the business units, the leaves, flowers and fruit are the end product. The strength of the tree, they explain, is not in the flowers, as Western firms seemed to suggest, but in the roots that provides stability, sustenance and nourishment, as illustrated by the Japanese. This is the core competency of the firm, and firms that conceive of themselves in terms of their

core competencies, according to this literature, develop core products, and core businesses around these “key building blocks of specialized expertise” (Schilling, 2005). To successfully leverage its competency in miniaturization, for example, Sony, for example, must ensure that its technologists, engineers and marketers have a shared understanding of customer needs and of technological possibilities. In doing so, the firm “empower[s] individual businesses to adapt quickly to changing opportunities”. To do so is important, because, while in the short run, “a company’s competitiveness derives from the price/performance attributes of current products”, “in the long run, competitiveness derives from an ability to build, at lower cost and more speedily than competitors, the core competencies that spawn unanticipated products”. (p.4). Helpfully, the authors also introduce a three step test for identifying the firms’ core competencies⁷

Figure 2 – Core Competencies. Reproduced from Prahalad and Hamel (1990)



The core competency perspective is helpful when guiding the firm in its strategic decision making processes. The core competency perspective is especially helpful, however, when dealing with change. Here, Wilkinson Sword is perhaps the gold standard. Founded in 1772, as a musket maker, Wilkinson Sword added bayonets, as complimentary products to its battle muskets, to its portfolio in the 1820s. In 1844, they

⁷ According to Prahalad and Hamel (1990) a core competency: (1) should be valuable across multiple market; (2) should add consumer value; (3) should be difficult to imitate by competitors.

developed and patented a new technology -- a machine called the Eprouvette -- for testing swords, and with this they developed a reputation for quality, and Wilkinson Sword became Queen Victoria's 'Sword and Gun Maker'. During the First World War, Wilkinson Sword was engaged in producing over two million bayonets, but in the much bigger Second World War, Wilkinson Sword was only given contracts to manufacture more than 10,000 bayonets. Wilkinson Sword's managers realized: (1) that waiting for war was not a sustainable business model; and (2) that future wars were less and less likely to make use of bayonets. In the early 20th century, therefore, they looked into new growth in the razors, garden sheers, and scissors markets. It soon settled on razors as the largest market, and over time it transitioned its offering over time from cut-throat razors, to safety razors and, as the technology changed, to electrical razors too. In doing so, Wilkinson Sword adopted a 'core competency' based perspective of what it is that it did, defining itself as a producer of blades, as opposed to a 'core business' based perspective, defining itself as a producer of bayonets. In doing so, when its 'core business' collapsed, Wilkinson Sword was able to redeploy its 'core competency' to create new growth markets. In 2001, Wilkinson Sword was the world's number two in the razor market, with an 18 percent share, and sales of more than \$620 million.

Applying this logic to the energy incumbents, the suggestion is that energy incumbents should change the way in which they view themselves. By not viewing itself as a 'car maker' but as an 'engine maker', Honda freed itself to move beyond cars, while Wilkinson Sword's, by not viewing itself as a 'sword maker' but as a 'blade maker', freed itself to explore beyond the sword market. The energy incumbents could do this. A simple starting point would be to stop viewing themselves as 'energy' incumbents, and to begin exploring what it is, at the most fundamental level, that each firm does. By doing so, the 'fit' strategy offers the 'energy' incumbents at least a route to creating value.

Conclusions

Table 2 summaries the pros and cons of the four strategies described above. From this, and from the wider discussion, we can draw a number of conclusions.

Firstly, we can conclude that 'fight' is part of the solution. The 'fight' literature tells us that energy incumbents should have a non-market strategy, it suggests that 'value maintaining' non-market strategies are only useful in delaying regulations that reflect changing social preferences, and suggests that those firms that work with the change, and adopt an active position, perform better. What this means is that an energy incumbent would be ill-advised to rely exclusively on a defensive non-market strategy, but that they should use a 'value-creating' strategy to work with the regulators, to shape the regulation, and to ensure that their competitive advantages aren't devaluated.

Secondly, we can conclude that 'flight' is the nuclear option. The 'flight' literature tells us exit would significantly erode the value of the firms current (product / geographic) market-specific resources and capabilities, and in its new (product / geographic)

market, the firm would require significant resources to acquire new resources and capabilities to compete in that market. Geographic market exit, furthermore, assumes that the sorts of regulations that the incumbent was seeking to avoid in the home country would not follow it to the host; a strong assumption. Because the energy incumbents are financially struggling, it is unlikely that would be able to acquire the resources and capabilities necessary to compete in a new market, and therefore any move to devalue their current competitive advantages would seem unwise.

Thirdly, we can conclude that ‘follow’ is unlikely to lead to be effective. The innovation literature tells us that the incumbents are likely to lose any innovation race, as they try to re-orientate themselves to meet the new needs of the market, and the literature on first mover advantages tells us that the new energy providers will likely have created entry barriers, that will disadvantage the incumbents should the incumbents attempt to re-orientate themselves to meet the new needs of the market. A ‘follow’ strategy, therefore, is an option, but it’s one that would relegate the incumbent, at best, to a second place position in the market. ‘Follow’, therefore, is not the preferred strategy.

Table 2 – Flight, Flight, Follow or Fit

Strategy	Cost	Short Term Impact	Long Term Impact	Impact on Current Competitive Advantage
Fight	Medium	Positive	Neutral	Neutral
Flight	High	Positive	Negative	Negative
Follow	Medium	Negative	Negative	Negative
Fit	Low	Positive	Positive	Positive

Finally, the ‘fit’ literature provides us with the most promising ideas on how the energy incumbents can deal with the challenge. This literature suggests that, by focusing on the firms ‘core competencies’, the energy incumbent can change the way in which they seem themselves. Doing so, can open new markets. By not viewing itself as a ‘sword maker’, for example, but instead as a ‘blade’ maker, Wilkinson Sword changed itself from a producer of weapons, dependent on exogenous factors, such as war, to a producer of personal care products, dependent on endogenous factors, such as innovation. In doing so, Wilkinson Sword took controls of its market, and became a global leader. We suggest that there are lessons in here for the energy incumbents, and that in focusing on their ‘core competencies’, the energy incumbents could emerge from the transition stronger.

In sum, therefore, we believe that the answer to what the energy incumbents should do to deal with the transition is a simple recipe: 1 part a value-creating non-market strategy, to 2 parts a reimagining of the firm in terms of ‘core competencies’. The art, of course, and the challenge for the energy incumbents, is to turn this theory into practice.

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