

**“CASE STUDY, DYNAMIC CAPABILITIES AND UPSTREAM STRATEGY:
SUPERMAJOR EXP”**

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ABSTRACT

This case study explicates the dynamic capabilities framework and shows its relevance for the worldwide Exploration Division of a significant IOC, Supermajor EXP. Three characteristics of dynamic capabilities are described: (1) how they differ from ordinary capabilities; (2) how they're identified, built and strengthened through managerial processes; and (3) how they function throughout the strategy development and execution process (sensing, seizing and transforming). Over a one-year period, EXP implemented key organizational and business model innovations to spot and start to manage 10 dynamic capabilities. The case demonstrates how EXP identified and prioritized their dynamic capabilities through a strategic assessment, built, strengthened and evolved them through dialogical, collaborative and iterative processes that were informed by learning, sustained them by establishing new organizational structures, and reinforced them through cultural initiatives. Three of EXP's dynamic capabilities are described in detail: (1) accuracy in volume and risk predictions in investment proposals (the degree to which the subsurface reality is exposed when the well is drilled); (2) strategic deployment of talent into the ventures and projects with the best measure (right people, within the right seats, doing the proper thing, with the correct people, at the proper time), and (3) effective management of the centralized–decentralized polarity.

Keywords

Dynamic capabilities Strategy process Upstream strategy Oil and gas exploration Fracking Shale Portfolio investment decisions Multinational Oil and gas companies Centralized–decentralized Transformational change

1. Introduction

As defined by Teece et al. [1], [2], [3], [4], a dynamic capability may be a meta-process

that orchestrates variety of processes, best practices or competencies to manage comprehensively and systemically, something that's strategically imperative, including the strategy development and execution process itself. "Dynamic capability" is vital concept within the strategy literature [3], [4], [5], [6], [7], because it describes how leading firms integrate, build and reconfigure internal and external competencies into "learned patterns of collective activity" [6] to achieve and maintain competitive advantage in rapidly changing and highly complex environments.

In Dynamic Capabilities within the Upstream Oil and Gas Sector [4], Shuen, Feiler and Teece argue that dynamic capabilities are particularly important for the upstream oil and gas business environment. Here, operational and general managers with key strategic decision-making responsibilities confront significant challenges that accelerate velocity (particularly in Unconventionals) and increase complexity. These factors include the growing demand for energy resources, new technologies that have opened unconventional plays, increased competition, shrinking global geoscience and engineering talent pools, and therefore the reality and perception of environmental risks. Together these factors create an inflection point, which needs a replacement approach to strategy management.

Most treatments of dynamic capabilities within the strategy literature discuss dynamic capabilities generally terms, only some are specific about the role of dynamic capabilities in oil and gas, and none to our knowledge provide insight into how dynamic capabilities are literally selected and developed by firms. This case study seeks to fill this gap by describing the method by which Supermajor EXP identified and developed the dynamic capabilities it considered essential for strategy execution.¹

2. Elements of the dynamic capabilities framework

As a meta-process, a dynamic capability differs from a normal capability. a standard capability, best practice or competence usually focuses on the performance of a selected delineated task [3], [8], [9]. A firm might develop, for instance, a best practice in

recruiting, to surpass hiring top talent. That ordinary capability alone won't usually create value; its power to contribute to value creation resides within the role it plays among a managed cluster of activities (e.g., recruitment, on-boarding learning, deployment, management, leadership, culture). The effective orchestration of this cluster of activities by managers with strategic and/or operational oversight does create value when it leads to getting the most effective people motivated, putting them into the proper seats, and ensuring that they're doing the proper things, at the proper time. This dynamic capability involves a well-managed cluster of activities – what some call a “people strategy.”

In Oil and Gas Exploration, for one more example, accurately predicting volume and risk (the degree to which the subsurface reality is exposed when the well is drilled) in investment proposals might be a dynamic capability built upon effective management that coordinates a cluster of ordinary competences and supportive skills, like volumetrics and uncertainty analysis, seismic interpretation, sequence stratigraphy, building structural depth models or property models from well correlation data, managing and processing subsurface data, and evaluating data to get maps. Skills alone don't usually create value; what does could be a dynamic capability that involves the effective orchestration of a cluster of activities directed toward achieving something that's strategically imperative.

2.2. Dynamic capabilities are identified, built and strengthened by managers who focus intentionally on strategic routines that make value

Dynamic capabilities don't just emerge and are quite something that firms had best. Zollo and Winter [6] raise and answer the relevant question: “How do dynamic capabilities acquire existence and evolve over time?” They argue that “dynamic capabilities should be developed ‘in-house’ through a collection of activities and cognitive processes focused on the organization's own routines” (p. 11). Building on it idea, this case study demonstrates that for one organization, Supermajor EXP, relevant dynamic capabilities were identified and prioritized through a strategic assessment, were built through dialogical, collaborative and iterative processes that were informed by learning, were

sustained through the establishment of organizational structures and leadership that provided systematic oversight and training, and were reinforced by executive communications and culture.

2.3. Dynamic capabilities support all phases of strategy development and execution.

The Dynamic Capabilities Framework are often wont to organize strategic oversight around three clusters of activity: sensing, seizing and reworking [3]. These proceed during a sequential manner and are relevant for corporate strategy (portfolio strategy, M&A strategy, ecosystem combining/partnering strategy), business strategy (whole or single business unit), functional or department strategy, or project strategy.

2.3.1. Sensing

Sensing involves gaining knowledge about the external and internal environment and making decisions about strategic direction. Sensing's scan is comprehensive – outside and inside the organization [3]. Outside the organization, Sensing is an inherently entrepreneurial set of dynamic capabilities that involves gaining knowledge about competitors, exploring technological opportunities, probing markets, being attentive to customers or suppliers, distilling new product and repair opportunities (“idea-tion”), together with scanning and exploring other elements of the business ecosystem (partners, joint ventures, government regulators, etc.). It requires management to create models and test scenarios, and in certain markets to establish latent demand. Sensing benefits from the applying of information analytics and from experimentation. there's also a requirement for individual insight, as Jack Welch observed, “leaders must develop a insight, a capability to determine around corners” [10]. Sensing capabilities involve activities that make a culture of open communication, and knowledge about the organization's readiness to capture value. this can be particularly relevant for oil and gas companies who, when making investment decisions, must assess not only which opportunities create the very best potential value, but which of them are “doable” given the resources at hand or easily procured. during this sense, “gap filling” might not just strengthen ordinary capabilities; the act of doing it may be seen as a dynamic capability.

2.3.2. Seizing

Seizing involves mobilizing and galvanizing the organization and its complementors to develop organizational and ecosystem readiness to capture the chance. Seizing deploys a group of capabilities focused on capturing opportunity and mitigating risk. As just mentioned, gap filling (strengthening ordinary capabilities and establishing best practices) can strengthen readiness. Capabilities around eliminating irrelevant processes or selling off non-strategic assets are important. In oil and gas this implies getting control over organizational capabilities that are or might become bottlenecks [11]. Core seizing activities include developing the business case, communicating it, aligning stakeholders, raising capital, attending to execute the strategy and also the implementation of organizational or business model innovations, which offer structures for action.

2.3.3. Transforming

Transformational capabilities are the routines designed to sustain strategic relevance in changing markets through continuous alignment and realignment of tangible and intangible assets. Teece [3] uses the term “reconfiguration” to talk over with adaptation and repurposing capabilities (sometimes achieved through recombining existing resources) as external or organizational realities change. Also essential within the transformation process are the “words and deeds” of leaders that mobilize, motivate and encourage people to alter [12].

To summarize, “Dynamic Capabilities” are the orchestrated and managed clusters of activity that empower and help guide decisions about direction (sensing), that prepare, plan and align stakeholders, engendering organizational readiness for change (seizing), which actually change the organization in order that it can capture opportunities and make value through efforts to mitigate risks (transformation). Given this understanding, dynamic capabilities is understood to empower strategy execution,2 helping inform and make precise decisions about what to try to to (direction and vision) and in-

creasing the organization's readiness and skill to realize it.

3. Dynamic capabilities and upstream strategy:

supermajor EXP

Though a dialogical and iterative process focused on building routines that make value, EXP managers identified 10 dynamic capabilities, which support both strategy development and execution. During this section we describe EXP's purpose for that specialize in dynamic capabilities, the dialogical and iterative process they went to identify and develop them, how they organized institutionally to manage and sustain/evolve them, and the way leaders established "capability" as an ongoing cultural imperative.

After EXP developed its energy demand scenarios bent on 2050, it had been quick to appreciate that to satisfy its growth objectives, a strategic target developing and managing both ordinary and dynamic capabilities was required. EXP was careful about resource allocation: every year regional managers submitted detailed proposals to the worldwide Exploration Leadership Team (GXLT) with relevancy which ventures to fund. Historically, the factors utilized by top management to pick and prioritize ventures were purely economic: that's, projects with the very best amount or highest potential value were those funded.

Recognizing a replacement upstream reality, and awake to the prices and risks related to some high-priority ventures (e.g., frontier ventures, Unconventionals), EXP leaders decided to incorporate within the investment decision process an analysis of all current and proposed projects that focused on project "doability," that is, the strength and availability of capability for venture execution. To deliver venture objectives, leaders required a sufficient number of Geoscientists (capacity), with strong technical skills. These experts needed to be deployed strategically, to be armed with the newest technology and to be managed and led in ways in which increase morale and encourage a commitment to technical careers.

In the language of the Dynamic Capabilities Framework, this decision established a sensing capability – a coordinated cluster of activities that led to more complete executive knowledge about project “doability” (capacity to seize). This intelligence was then included within the investment decision process.

The process accustomed identify and develop EXP's dynamic capabilities began with a strategic assessment. Led by the Chief Global Geoscientist, a world capability assessment (The Global Capability Health Check) was conducted in over 55 global ventures (the Gulf of Mexico is one venture). the potential analysis evaluated 8 core technical capabilities (which joined over 50 ordinary competences or skills), capacity (key positions filled), deployment associated with the priority of projects, leadership and managerial effectiveness, HSSE, the supply and management of resources from the ecosystem, rapid technology deployment, knowledge networks and learning, partnerships (internal and external) and other capabilities associated with the particular geology of the projects.

After the “paper” assessment was completed and analyzed, individual interviews with the leaders of 10 global regions, select area managers and team leaders were conducted to deepen the analysis, to start to spot strengths and remedial actions to shut ordinary capability gaps relevant for dynamic capabilities, and to start to spot the clusters of activities that needed to be coordinated to enhance performance and make value.

To develop and sustain their dynamic capabilities, EXP executives established a permanent Global Capability Team led by the Chief Global Geoscientist. The team included the leaders of nine global regions, the VP of world Exploration Strategy, the world Manager of Technological Innovation, the leaders of functions that provide Capability (HR, Learning and Development, Recruitment, Managed Open Resources), technical subject material experts, and ecosystem partners.

This organizational innovation ensures that an annual cycle of capability identification and strengthening is conducted which strategic routines are reinforced. The cycle includes four face-to-face workshops each year where the world team meets to assess the present state of capability and discuss and define optimal ways to orchestrate or evolve capabilities. Both ordinary and dynamic capabilities are discussed, as gaps in ordinary capabilities undermine the effectiveness of dynamic capabilities. Additionally, annually the aptitude Team authors the annual Global Capability Improvement Strategic Plan and develops action plans and teams to raised manage dynamic capabilities, to shut gaps and to focus management attention on major dynamic capabilities that need ongoing oversight. Teams chargeable for executing action plans that support global and regional capability improvement meet on a bi-weekly basis to review progress. Representatives of the regions (Regional Chiefs) also write capability improvement plans that focus regional and area managers on capability oversight. The Chiefs also participate in their own weekly phone call, led by the Chief Global Geoscientist, to share best practices and collaborate on resolving capability issues.

The establishment of the potential Team and its sub-groups represents a seizing capability, establishing an organizational entity, roles and responsibilities to manage capability on an ongoing basis. The team make-up, inclusive of members at the middle of the organization and within the regions, also establishes an organizational entity ready to better manage the centralized–decentralized polarity.

On a quarterly basis, the Chief Global Geoscientist develops and presents to the EVP of worldwide Exploration a capability scorecard consisting of 10 key capability measures. Then at the summer meeting of the worldwide Exploration Leadership Team, when investment proposals are evaluated and portfolio decisions are made, the Chief Global Geoscientist presents the aptitude Report that represents the joint conclusions of the aptitude Team about the “doability” of the proposals.

Over the course of a year, through a structured series of workshops and ongoing lead-

ership dialogue described above, the subsequent 10 dynamic capabilities evolved and were prioritized by the worldwide Capability team; action plans were written and dispensed to strengthen these capabilities.

1.The provision of relevant and timely information about the present state of organizational capability to leaders as they create strategic portfolio decisions.

2.Accurate volume and risk predictions (the degree to which the subsurface reality is exposed when the well is drilled) in investment proposals.

3.Strategic orchestration of human resources: to recruit, train and deploy talent during a timely and efficient manner, into the ventures and projects with the best quantity (right people, within the right seats, doing the proper thing, with the proper people, at the correct time).

4.Effective management of non-technical risks across the business ecosystem: including the safe deployment of resources into energy-rich geographies that are that political-ly unstable or environmentally fragile.

5.Rapid deployment of technical and process innovations into ventures with high value.

6.Effective management of the centralized–decentralized polarity; to entrust managers within the ventures with managerial and operational decisions associated with the specificities of the venture, while also protecting the necessity at the middle of the organization for communication, cross-venture collaboration, HSSE, quality, efficiency and effectiveness.

7.Restructuring of worldwide Exploration, which created a separate division focused on Unconventional ventures, including new leadership and management structures, with dedicated financial, human and technological resources and synergistic linkages back

to Global Exploration.

8. Timely learning throughout the organization, but particularly in Unconventionals; the event of cross-border, cross-organizational and cross-generational knowledge networks.

9. The orchestration of external and internal partnerships required to complete the work and make value.

10. The establishment of Capability as a strategic and cultural imperative throughout Exploration.

Several factors sustained this effort (transformation): the commitment of leaders who supported the potential initiative through regular communications and attendance at capability meetings and events; managers who reinforced with staff the importance of developing capability and personally worked to boost the aptitude of younger staff through cross-generational mentoring; an interior marketing campaign that featured capability in concert of the pillars of EXP's strategy, on EXPs website and thru posters placed in every work area; and accountability systems that included (1) measures and reporting structures that identified priorities and ensured that deliverables were completed well and on time, and (2) individual development plans (IDPs) that raised awareness about the importance of capability development and provided incentives for improvement.

4. Supermajor EXP's dynamic capabilities

While progress was made in strengthening all 10 dynamic capabilities listed above, in year one, EXP prioritized three that were considered vital, given current gaps and strategic imperatives. During this section, we describe the efforts of EXP leaders and managers to orchestrate and build these three dynamic capabilities.

4.1. Dynamic capability: accurate volume and risk predictions (the degree to which the

subsurface reality is exposed when the well is drilled) in investment proposals

The goal of exploration activities is to accurately predict the presence of hydrocarbons within a subsurface formation, the extent of those deposits (volume), the quantity of hydrocarbons recoverable (probability), and therefore the subsurface reality (risk). Explorers conduct geological and seismic investigations; their findings are presented in proposals that Exploration leaders use to create investment decisions about what wells to drill.³ Once exploration wells are drilled and also the size of the sector is confirmed, the project is sanctioned and therefore the field are often developed.

Other more systemic factors can prevent the company's top talent from moving into high potential ventures/projects.

- Sometimes at the top, leadership either fails to prioritize the portfolio or fails to set up and manage processes that communicate the strategic priority of particular ventures/projects down the line to regional managers and those responsible for deployment. Regional managers do not know where their projects stand in relation to others.
- High-priority ventures are sometimes understaffed because the best people are already busy on other high-priority projects. There are not enough highly competent experts to go around.
- An increasing challenge for corporations who require mobile talents surfaces with employees who are married or in partnerships and must manage dual careers.
- Poor global IT infrastructure prevents talented people from working or collaborating on high potential projects. With a globally integrated IT infrastructure and databases shared across borders, it is not always necessary to deploy a talented expert to a new location; rather that person can work on projects around the world from her/his desktop (or from home). In some global companies, however, cultures that emphasize decentralization have allowed each region to have its own infrastructure, software and databases, militating against technical collaboration across borders.

External barriers to deployment of top talent into high-priority ventures or projects include: (1) foreign government regulations that prohibit or make difficult the employment within their borders of experts from particular countries or ethnic-religious backgrounds; and (2) political instability or geographic inaccessibility, which make certain assignments undesirable for experts and their families.

Super major EXP's leadership team recognized that as the need for increased production rises, as the geology becomes more complex, as strong technical competencies are stretched, as competition for top talent increases and as the autonomy of decentralized managers becomes crucial, the process of deploying highly competent people into the ventures with the highest economic value becomes a strategic imperative. They now manage a dynamic capability to deploy the strongest teams into the ventures where the economic stakes are highest.

- Executive processes regularly assess the economic value or potential economic value of the portfolio of ventures to determine priority. Answers to the question, "What counts as evidence in the calculation of economic value?" extend beyond pure financial analysis to matters related to the technical and organizational capability of operations to deliver the venture.
- Communication linkages and protocols that align executive decisions about portfolio priorities and those responsible for staffing (recruiting and deployment) were established and are managed to ensure that clear instructions related to deployment of talent are received and executed in a timely manner.
- A process to develop capacity forecasts is updated on a quarterly basis. The process is managed by the Global Capability Team to anticipate vacancies well in advance and is coordinated with succession planning and efficient deployment management.
- EXP managers continuously scan the business ecosystem for technical capabilities. At the core of managing this (human resource based) dynamic capability is organizational agility in identifying, on-boarding and managing contractors, delegating through contrac-

tual relationships projects or parts of projects to services companies, and entering into joint ventures.

- The strategy, structure and operating priorities of the Capability Providers (Recruitment, Contracting, Learning & Development, and Deployment) are focused on meeting the requirements of the ventures. Organizational structures that create dialogue and contexts for negotiation are vital. Compromises that make HR processes more efficient and data-informed are being implemented and managed.

- A Global IT infrastructure that reaches with acceptable speed to the most remote locations in the world, and common software across regions enables cross-border collaboration on technical innovations, the contributions of teams worldwide to particularly important projects, centralized quality control of top experts on well designs and increased dialogue between the center of the organization and its parts.

- EXP regional leaders developed and implemented “informal markets,” where, in regularly scheduled meetings, regional leaders or their delegates propose trades, in a manner similar to the general managers of baseball teams. If a particular region has an excess of volumetric experts, for example, but needs a stratigrapher, exchanges of talent can be arranged. Such negotiations are conducted with the knowledge and participation of HR. Like baseball players with “no-trade” clauses in their contracts, experts are encouraged and incentivized to make the move, but are free to refuse. Rules for derogations from established processes when triage is required to address a crisis, or to address a priority, can be established and managed by regional and national leaders and their designees.

- This dynamic capability also provides oversight of the company's legal and fiduciary responsibility to provide for the safety, security and health of all employees deployed into other countries (expatriates), and particularly expatriates working in hostile environments or politically unstable countries [19]. Adding to managerial complexity are (1) the long list of possible negative events to manage, including terrorism, lawlessness, crime, political instability, natural disasters, infectious diseases, travel-related sickness,

travel accidents, kidnapping and common travel problems (Claus [19] lists over 40 concerns); and (2) the fact that multinational companies must adhere to a myriad of laws, both supranational and country-specific, related to the care of employees [19].

4.3. The ability of leaders to manage the centralized–decentralized polarity; to entrust managers in the ventures with managerial and operational decisions related to the specificities of the venture, while also protecting the need at the center of the organization for communication, cross-venture collaboration, HSSE, quality, efficiency and effectiveness.

Management of the centralized–decentralized polarity is essential for effective strategic management of upstream multinational E&P companies. Interests at headquarters (policies and procedures related to quality, profitability, safety, compliance, etc.) often seem to conflict with the interests of the regions, where leaders and managers require flexibility and adaptability to achieve efficiencies given the specific geological, economic, legal and political exigencies they confront on a daily basis. Bringing the knowledge that resides in the regions, where the work is done, to the center of the organization, is crucial for making strong strategic decisions. Alternatively, some strategic decision-making must be decentralized. Many organizations experience these centralized–decentralized differences as “problems to solve.” We think that centralized–decentralized issues represent a polarity that must be managed dynamically, through strategic orchestration of a number of activities. Johnson [20] describes the polarity as a tension that is necessary for corporate systems to work efficiently. The conflicts between poles can never be solved, but must be well-managed to keep the organization from experiencing the downside of both: burdensome bureaucracy at the center and lack of accountability away from the center.

At MIT, Orlikowski and Hofman [21] developed a method for managing the centralized–decentralized polarity when organizations implement major IT transformations. The model has been tested and shown to be effective in a wide range of industries [22], including oil and gas. The model is based on jazz. Listen to a jazz combo and you hear a

lot of improvising. The clarinet, trumpet, trombone, string bass and piano players each take turns displaying their virtuosity with improvisations that they often create on the spot, based on their expertise as professional musicians. It all sounds very decentralized. However, while the individual soloists do not decide beforehand what notes to play, they do operate as a unit based on common agreement. At the center of the group, they make prior agreements on what musical composition will form the basis for their performance, a common rhythmic structure, a common tempo, and a shared understanding of the genre. Once the performance begins, each player is free to explore and innovate, within the agreed upon “rules” previously established. This “management” of centralized and decentralized interests creates great music! This concept is not unrelated to the concept of “Virtuoso Teams” [23].

Managing the polarity requires establishing ground rules at the center, but anticipates a series of changes, unpredictable at the start, that evolve from practical experience with “local” realities. This model encourages leaders of multinational companies to start with an objective at the center, not necessarily a plan, and based on that objective, allows decentralized entities to respond and adapt to conditions as they arise.

The dynamic capability that effectively manages centralized–decentralized polarity depends on four enabling factors [21]: (1) dedicated resources must be allocated and roles and responsibilities assigned to manage the polarity; (2) the culture of the organization must be adaptable; (3) decentralized input into all strategic technological, organizational, structural or business model innovations is essential; and (4) all innovations originating at the central the organization, must be open-ended (i.e., locally adaptable by “end-users,” with features that can be customized for relevance and efficiency). Essential here is the ability to link and leverage local knowledge, strategic decisions and managerial processes that encourage and constrain the ability to adapt to relevance processes that are standardized at the center [24].

This improvisational dynamic capability was managed effectively by Super major EXP related to several projects that involved the centralized–decentralized polarity. Early in the process, the Global Capability Team conducted a workshop which determined the initiatives to be centralized and those that could be developed by the regions. For the decentralized initiatives, primary objectives were communicated and a set of guidelines and best practices shared, but the regions were free to develop and modify their processes on an ongoing basis.

- Super major EXP employed the improvisational dynamic capability to achieve regional alignment with the basic exploration process (ORP), an audited series of steps that had to be completed by explorers from the beginning to the end of the exploration process. In the past the process had been rigidly enforced, creating inefficiencies since some of the steps were irrelevant for some ventures. Application of the improvisational dynamic capability created a derogation procedure, which allowed each regional leader to bypass certain steps under certain conditions agreed upon at the center.

- The improvisational approach was also used to manage centralized–decentralized issues related to Team Leader (TL) development. The process for developing the TLs is now left up to regional leaders; due to the variety of settings in which TLs work (deep water; onshore, Unconventional, etc.), different proficiencies are required. The center's objective however is clear – all TLs must have a specific development plan that tracks progress, and ongoing mentoring must be provided. In addition, the center sponsors and coordinates learning opportunities and regional team leader workshops to discuss best practices.

5. Conclusion

To our knowledge, no treatment of dynamic capabilities in the strategy literature provides insight into how dynamic capabilities are actually selected and developed by firms. This case study endeavors to fill this gap by describing the process by which Supermajor EXP identified and developed 10 dynamic capabilities it considered essential for strategy execution. The case demonstrates that dynamic capabilities do not simply emerge or represent what firms do well; rather they are identified and built through the

intentional effort of leaders and managers, who configure, orchestrate and sustain clusters of activity to gain and maintain competitive advantage in rapidly changing and highly complex business environments.

Over a one-year period, EXP introduced key organizational and business model innovations that helped them identify and begin to manage 10 dynamic capabilities vital to their strategy execution. The case demonstrates how the three characteristics of dynamic capabilities initially described in this article were present in the processes EXP used to identify, build and sustain their dynamic capabilities framework. First, their dynamic capabilities required managerial orchestration of clusters of ordinary capabilities, technical skills and best practices; these clusters of activity were essential for EXP to achieve its value creation objectives. Second, EXP's dynamic capabilities were identified and prioritized through strategic assessment, were built through dialogical, collaborative and iterative processes that were informed by learning, were sustained through the establishment of organizational structures and leadership that provided systematic oversight and training, and were reinforced by executive leadership and culture. Third, EXP's dynamic capabilities were relevant throughout the strategy development and execution process (sensing, seizing and transforming).

Given current capability gaps and strategic imperatives, EXP prioritized three of their dynamic capabilities; we described these in detail: (1) accuracy of volume and risk predictions in investment proposals (the degree to which the subsurface reality is exposed when the well is drilled); (2) strategic deployment of talent into the ventures and projects with the highest economic value (right people, in the right seats, doing the right thing, with the right people, at the right time), and (3) effective management of the centralized–decentralized polarity. These capabilities have not been perfected but are being continuously improved through iterative processes informed by learning.

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- The strategy, structure, and operating priorities of the potential Providers (Recruitment, Contracting, Learning & Development, and Deployment) are focused on meeting the wants of the ventures. Organizational structures that make dialogue and contexts for negotiation are vital. Compromises that make HR processes more efficient and data-informed are being implemented and managed.

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- EXP regional leaders developed and implemented “informal markets,” where, in regularly scheduled meetings, regional leaders or their delegates propose trades, just like the general managers of baseball teams. If a specific region has an way over volumetric experts, as an example, but needs a stratigrapher, exchanges of talent are often arranged. Such negotiations are conducted with the knowledge and participation of HR. Like baseball players with “no-trade” clauses in their contracts, experts are encouraged and incentivized to create the move but are unengaged to refuse. Rules for derogations from established processes when triage is required to handle a crisis or to handle a priority are often established and managed by regional and national leaders and their designees.
- This dynamic capability also provides oversight of the company's legal and fiduciary responsibility to supply for the protection, security, and health of all employees deployed into other countries (expatriates), and particularly expatriates working in hostile environments or politically unstable countries [19]. Adding to managerial complexity are (1) the long list of possible negative events to manage, including terrorism, lawlessness, crime, political instability, natural disasters, infectious diseases, travel-related sickness, travel accidents, kidnapping, and customary travel problems (Claus [19] lists over 40 concerns); and (2) the actual fact that multinational companies must adhere to a myriad of laws, both supranational and country-specific, associated with the care of employees [19].

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At MIT, Orlikowski and Hofman [21] developed a technique for managing the centralized–decentralized polarity when organizations implement major IT transformations. The model has been tested and shown to be effective in a very wide selection of industries [22], including oil and gas. The model is predicated on jazz. hear a jazz combo and you hear plenty of improvising. The clarinet, trumpet, trombone, contrabass and piano players each act displaying their virtuosity with improvisations that they often create on the spot, supported their expertise as professional musicians. It all sounds very decentralized. However, while the individual soloists don't decide beforehand what notes to play, they are doing operate as a unit supported common agreement. At the middle of the group, they create prior agreements on what composition will form the idea for his or

her performance, a typical rhythmic structure, a standard tempo, and a shared understanding of the genre. Once the performance begins, each player is liberal to explore and innovate, within the agreed-upon “rules” previously established. This “management” of centralized and decentralized interests creates great music! this idea isn't unrelated to the concept of “Virtuoso Teams” [23].

Managing the polarity requires establishing ground rules at the middle, but anticipates a series of changes, unpredictable at the beginning, that evolve from practical experience with “local” realities. This model encourages leaders of multinational companies to begin with an objective at the middle, not necessarily an inspiration, and supported that objective, allows decentralized entities to reply and adapt to conditions as they arise.

The dynamic capability that effectively manages centralized–decentralized polarity depends on four enabling factors [21]: (1) dedicated resources must be allocated and roles and responsibilities assigned to manage the polarity; (2) the culture of the organization must be adaptable; (3) decentralized input into all strategic technological, organizational, structural or business model innovations is essential; and (4) all innovations originating at the central the organization, must be open-ended (i.e., locally adaptable by “end-users,” with features which will be customized for relevance and efficiency). Essential here is that the ability to link and leverage local knowledge, strategic decisions, and managerial processes that encourage and constrain the flexibility to adapt to relevant processes that are standardized at the middle [24].

This improvisational dynamic capability was managed effectively by Supermajor EXP associated with several projects that involved centralized–decentralized polarity. Early within the process, the worldwide Capability Team conducted a workshop that determined the initiatives to be centralized and people that might be developed by the regions. For the decentralized initiatives, primary objectives were communicated and a group of guidelines and best practices shared, but the regions were absolute to develop and modify their processes on an ongoing basis.

•Super major EXP employed the improvisational dynamic capability to attain regional alignment with the essential exploration process (ORP) and audited a series of steps that had to be completed by explorers from the start to the top of the exploration process. within the past the method had been rigidly enforced, creating inefficiencies since a number of the steps were irrelevant for a few ventures. Application of the improvisational dynamic capability created a derogation procedure, which allowed each regional leader to bypass certain steps under certain conditions prearranged at the middle.

•The improvisational approach was also wont to manage centralized–decentralized issues associated with Team Leader (TL) development. the method for developing the TLs is now left up to regional leaders; thanks to the variability of settings within which TLs work (deep water; onshore, Unconventional, etc.), different proficiencies are required. The center's objective however is obvious – all TLs must have a particular development plan that tracks progress, and ongoing mentoring must be provided. Also, the middle sponsors and coordinates learning opportunities and regional team leader workshops to debate best practices.

5. Conclusion

To our knowledge, no treatment of dynamic capabilities within the strategy literature provides insight into how dynamic capabilities are literally selected and developed by firms. This case study endeavors to fill this gap by describing the method by which Supermajor EXP identified and developed 10 dynamic capabilities it considered essential for strategy execution. The case demonstrates that dynamic capabilities don't simply emerge or represent what firms do well; rather they're identified and built through the intentional effort of leaders and managers, who configure, orchestrate, and sustain clusters of activity to achieve and maintain a competitive advantage in rapidly changing and highly complex business environments.

Over a one-year period, EXP introduced key organizational and business model innovations that helped them identify and start to manage 10 dynamic capabilities vital to their strategy execution. The case demonstrates how the three characteristics of dynamic capabilities initially described during this article were present within the processes EXP went to identify, build and sustain their dynamic capabilities framework. First, their dynamic capabilities required managerial orchestration of clusters of ordinary capabilities, technical skills, and best practices; these clusters of activity were essential for EXP to realize its value creation objectives. Second, EXP's dynamic capabilities were identified and prioritized through strategic assessment, were built through dialogical, collaborative, and iterative processes that were informed by learning, were sustained through the establishment of organizational structures and leadership that provided systematic oversight and training, and were reinforced by executive leadership and culture. Third, EXP's dynamic capabilities were relevant throughout the strategy development and execution process (sensing, seizing, and transforming).

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