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The Impact of Cloud

A Primer for the Oil and Gas Executive

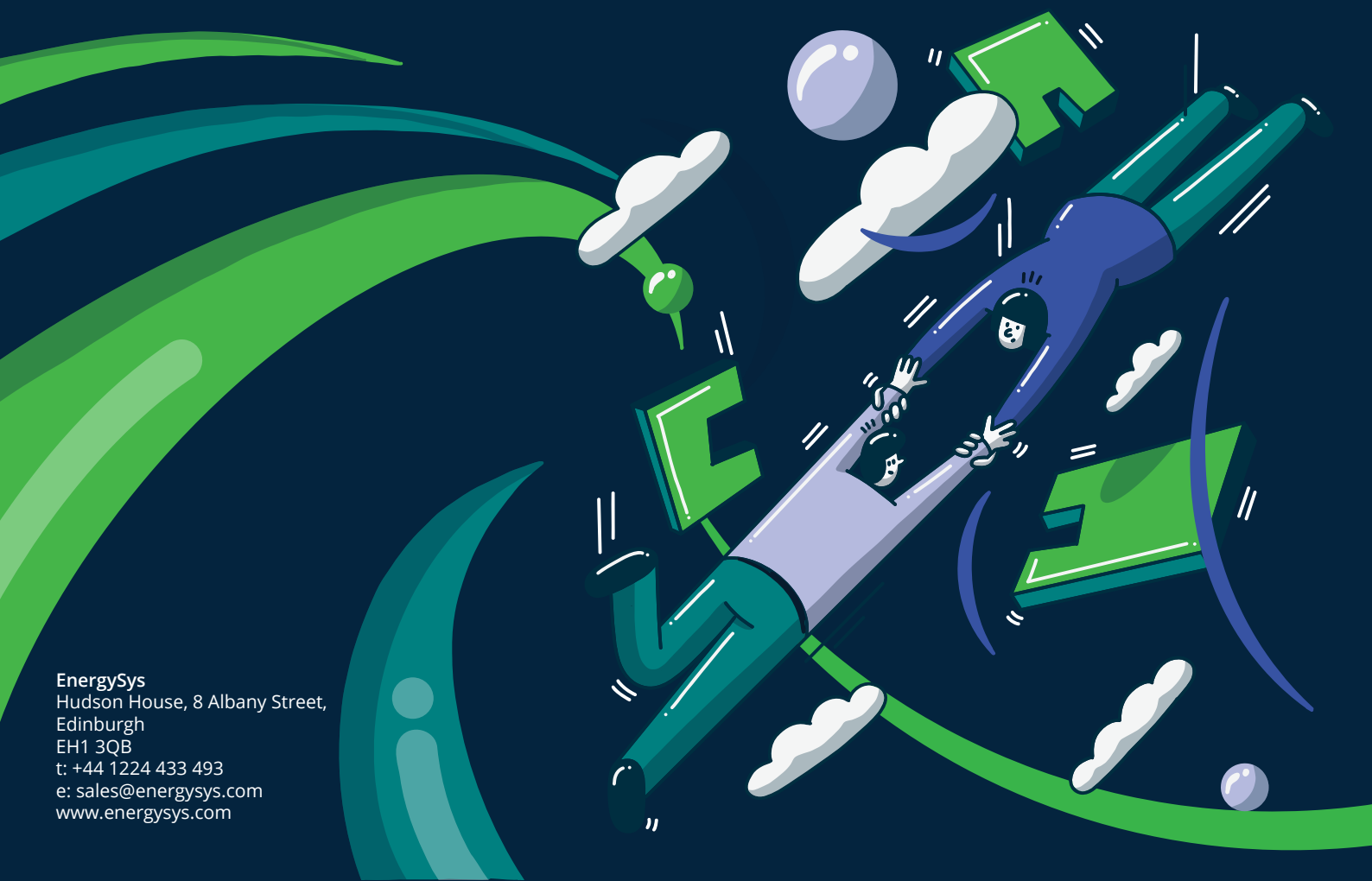

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Table of Contents

1 Executive Summary 2

2 The Need for Change 3

3 A New Approach 4

3.1 Thinking Differently
3.2 Services Not Software
3.3 Power to the People
3.4 The Future of Internal IT
3.5 Evolving Procurement
3.6 Mobile and Cloud

4 The Cloud in Action 8

1 Executive Summary

Within two years, services delivered from the public cloud are predicted to be an essential and significant component of IT delivery in the majority of oil and gas companies. In fact, Gartner have predicted that cloud computing will represent the bulk of new IT spend by 2016.

This will be a transformational change, disrupting the market and changing the way that applications are delivered and consumed. Oil and gas companies without a plan for movement to the cloud are already late in the adoption cycle, and their more agile competitors are likely to be significantly better placed to compete as a result. It will require dramatic changes to the internal IT teams, changing skill sets, focussing them less on the mechanics of IT and more on business needs. Traditional procurement models will not be fit for purpose, and both mind-sets and processes will require significant change.

The impact of the public cloud is often described and evaluated purely in terms of cost reduction, but this underestimates the breadth and depth of benefits that will be seen. Cloud adopters can expect substantially better value per dollar spent, a higher quality of service, increased flexibility, and higher security. Most importantly, they can expect dramatic increases in productivity through mobile technology and mobile working.

This last point is particularly important, as there is a fundamental connection between cloud services and mobile technology. Mobile applications gain value through interaction with cloud services, and the natural mechanism for interaction with cloud services is via the browser or the mobile app. Much as with universal access to email, every information worker will deliver more, in a shorter time, once they have universal access to the range of services that business needs and wants.

To see a clear vision of the future of business, it is only necessary to look at the current norms in the consumer market. There is a wide range of device choices, predominately mobile. There is a multiplicity of applications and vendors, competing to deliver the best possible user experience with seamless and secure sync of data across all devices. There is unparalleled interactivity through touch interfaces with immersive visualisation.

The future business will not want to see its information workers using technology that is vastly inferior to that available to an everyday user in the street. Further, flexible working will mean the need for secure access from anywhere at anytime is seen as normal, not exceptional. This is a different model, and traditional IT providers will struggle.

2 The Need for Change

Oil and gas IT is in crisis. Despite a booming market, there has been a pattern of prolonged underinvestment combined with a chronic lack of vision. This is unsustainable, particularly given the new realities of oil and gas economics in the twenty-first century. The era of easy oil has passed, and there is a need for significant increases in productivity to ensure the profitability of difficult or marginal fields.

In April 2014, PWC published a paper "Northern Lights. One vision, one strategy", that stated their belief that:

"... to survive and thrive in this environment, companies need decisive leadership combined with the courage to work collaboratively. Winners will display a nimble, flexible and entrepreneurial outlook, and the willingness to innovate and exploit new ways of working."

This is best captured as a need for agility, which is not simply the ability to cope with change, but to use change for competitive advantage. However, traditional on-premises IT solutions are cumbersome, expensive, slow to deliver, and difficult to change. They are focussed on the provision of man-time services, and represent a very real barrier to agility. It is not a coincidence that the tool of choice for many users is not a solution that is provisioned and governed by corporate IT, but Microsoft Excel.

Unfortunately, while spreadsheets provide much of the power and flexibility that users desire, they are often undocumented, insecure, prone to data loss, and problematic to share. Nonetheless, they are under the control of the business user, and this freedom for the individual is sufficiently appealing that the deficiencies are easy to ignore.

This cannot continue, and there is a need for a radically different approach that empowers end users while delivering the kind of scalability and security that is desired by corporate IT. Cloud services will deliver this transformation, but it will be a disruptive change that requires a fundamental change in attitudes and approach to IT.

3 A New Approach

3.1 Thinking Differently

Cloud is not about shifting on-premises infrastructure to a shared data centre, or moving costs from capital investment to operational expenditure. It embodies a completely different way of thinking about IT provision, and supports a vastly improved delivery model. This, in turn, demands a change to the way that business approaches issues such as procurement, internal IT, and the mechanisms for access to corporate IT.

Five major changes will be discussed in the rest of this paper:

- Users should buy services not software
- Power must increasingly rest in the hands of the business user
- Internal IT will not disappear, but it must evolve rapidly to survive
- Current procurement practices are not fit for purpose
- Mobile is fundamental

These are the five fundamental imperatives in the cloud era, and developing a coherent response to each of them will be the mark of the successful company in oil and gas.

3.2 Services Not Software

The adoption of the cloud by business has been dramatic. It has enabled a wide range of new businesses to emerge to challenge established players, and has allowed larger organisations to respond with the speed and flexibility of a smaller, more agile, company. In a 2013 report, “The Impact of Cloud on IT Consumption Models”, Cisco surveyed over 4,000 IT leaders. They found that spending on cloud, whether public, private or hybrid, now occupies 23% of total IT spending. Further, it is forecast to grow to 27% by 2016.

At Cloud World Forum in 2013, BP announced its intention to scale to around 100 cloud projects under way, growing from a relatively small start of around six in mid-2013. Statoil have declared their commitment to application deployment to the public cloud, implementing tools and standards for federated security encompassing public cloud and on-premises applications. However, it is small and medium-sized companies that have most keenly felt the benefits. The cloud allows them not simply to cut costs but to create a truly agile business that can compete effectively with larger, better-funded organisations.

Having said all that, there is frequently a lack of clarity about what exactly constitutes cloud, and how companies should approach it. Contrary to some popular misconceptions, cloud is not about outsourcing IT, or simply moving current workloads into a shared datacentre. It is actually about changing the fundamentals of software procurement and consumption, and paying for a service, not for spinning rust, silicon and software.

3.4 The Future of Internal IT

Cloud services represent an uncomfortable proposition for most internal IT groups, and the loss of control generates a not insignificant amount of fear. This fear is a rational one, as a failure to embrace cloud will ultimately mean a rapid descent to irrelevance. However, these groups should view the cloud as a positive advance, freeing them from routine and mundane infrastructure management activities and allowing them to deliver real business value.

This will definitely require a change of both mind-set and skills. Rather than honing expertise in arcane technology matters, internal IT can focus more on understanding and responding to the business needs. This will move them from being a cost centre to a source of competitive advantage. They will also need to take on the role of managing suppliers, defining SLAs for the services in use, migration strategies between services, and setting minimum standards for security. These are not insignificant challenges, and the skills involved might not currently be present, but forward-looking companies will invest in their teams to develop these capabilities.

A related concern is the relatively immature state of traditional software suppliers, many of whom are not well-placed to respond to the challenge of the cloud. An inappropriate cost-base, and a workforce who lack the skills and vision for the changed market, represent serious problems that will threaten the survival of even some of the largest software companies. Microsoft's problems in the phone and tablet market are an example of the speed with which agile competitors can threaten previously dominant companies. Oracle's technology is still highly regarded, but the need to compete for cloud services creates an obvious problem for their traditional licensing model.

All of this means that internal IT will potentially find themselves having to deal with new players offering compelling value built around a niche proposition. They will need to understand how to leverage the value of these niche providers to create opportunities for the business, and how to integrate them effectively with other cloud providers and legacy on-premises solutions.

3.5 Evolving Procurement

The procurement processes employed by many oil and gas companies are designed to address the acquisition of software and hardware requiring substantial up-front investment. Ahead of this investment it is unclear how the acquired systems will operate, and whether the solution will deliver the intended benefits. The processes are frequently time-consuming and expensive, involving requests for information and proposals based on a detailed specification. There is often the expectation that vendors will customise their solutions to best fit the stated requirements.

This process is inappropriate for the selection of cloud services, as risks are lower because of the reduced up-front investment and the ease of configurability. Indeed, the costs of implementing a cloud solution could actually be lower than the costs of tendering. It might also be necessary to accept a match to requirements that is approximate rather than exact, but this is not actually a disadvantage. Gaining the majority of the benefits of a new solution immediately is more important and substantially better value than relying on the uncertain outcome of a major investment in an on-premises solution.

Procurement processes will have to evolve to ensure that companies can more easily embrace powerful new cloud services, leveraging the benefits of a solution for as long as makes sense. With cloud services, there are no sunk costs, or long-term commitments, so change is something to be appreciated, not avoided.

Agility in procurement will demand that the emphasis shifts to establishing a set of criteria for providers, including service level agreements, security models, and data ownership. Business users can then establish their own general requirements, within an established procurement framework. Cloud providers can do what traditional on-premises solutions struggle to do, and can provide trials and short-term deployments that actually demonstrate what users will get. This is truly revolutionary, and represents a massive shift in expectations. Major investments in on-premises infrastructure that ultimately fails to deliver will increasingly be a thing of the past.

3.6 Mobile and Cloud

Advances in mobile technology have generated real gains in business productivity, but this is simply the beginning. Consumers have rapidly grown to want and demand a rich ecosystem of apps that enhance their life, and whose producers compete to deliver the best functionality and usability. These consumer trends will increasingly impact business, creating the expectation that business IT will deliver a similar quality of experience. Cloud services represent one of the main ways that these expectations can be met.

Combining mobile with cloud creates a platform with capabilities that can be deployed and upgraded almost at will. Apps can be delivered easily and securely, and used to link to powerful back-end services available in the cloud. The mobile device provides powerful facilities for visualisation and manipulation of data that is delivered via standards-based interfaces from feature-rich cloud services. Indeed, the capabilities of current tablet computers match or exceed those of recent mainstream graphics workstations.

The key benefit is agility, and cloud and mobile deliver something dramatically different from what was previously possible. The upgrade cycle for on-premises systems is dictated by many different constraints, and users are left struggling to address new requirements as they arise. Cloud services are regularly upgraded without any significant service interruption, and new versions of mobile apps can be pushed to approved devices as soon as they are available. The result is a cycle of innovation measured in weeks, compared to years with traditional systems.

By combining cloud and mobile, the productivity of every user is assured, no matter where they are or what work they are doing. There is absolutely no need to return to the office to check the impact of a change, or to call someone to get approval or check the availability of an engineer. Users will have the right tools to get the job done, right there in their hand. While it would undoubtedly be possible to construct on-premises tools with these capabilities, the difference is in the speed of delivery and updates. By the time the on-premises solution was tested and configured, the cloud and mobile service would be a hundred steps ahead, evolving and changing in response to user needs. Therein lies the real difference. .

4 The Cloud in Action

In an article for the MIT Sloan Management Review in 2005, Carr predicted the end of corporate computing, and asked whether "the way corporate computing is practiced today [would] appear fundamentally illogical – and inherently doomed" when viewed from one hundred years in the future. His prescient viewpoint is given dramatic force by the rapidity of the migration of workloads to the public cloud. Oil and gas companies cannot ignore these transitions without risking competitive disadvantage and potential obsolescence.

Many companies are already gaining competitive advantage from cloud services. For example, the EnergySys Cloud Platform is enabling small and medium oil and gas companies to compete effectively for new business, with the assurance that they can respond quickly and flexibly to change. There is no need for large up-front costs or expensive consultants, and users can be up and running with a costeffective solution in days not months or years. In essence, cloud is levelling the playing field, and enabling companies of all sizes to compete effectively in a global market.

From a standing start four years ago we now have a customer base that spans the UK, mainland Europe, Africa, and the US. More than that, we have seen the appetite for a wider and wider range of production data management services in the cloud, as companies see the benefits.

The speed of implementation is dramatically better than traditional solutions, and end users can make changes quickly and easily. The flexibility to add assets without adding infrastructure, to transfer systems and data to new owners following an acquisition, and the ability to implement or scale up systems immediately as they are needed, have all been use cases in which the benefits of our cloud platform have been apparent.

EnergySys customers are buying the ability to run their business securely from any place at any time, without any need to invest in legacy IT. Costs are clear, and even the smallest companies can take advantage of enterprise-class capabilities to build a truly agile business.

In the old world, implementing a human resources application, for example, might have involved the purchase of hardware and software, installation, configuration, and maintenance, with costs that are not in any way proportional to the value derived. In the event of significant expansion of the business, it might be necessary to procure more hardware and software, even if the growth in staff numbers is temporary, as might be the case for businesses with seasonal demand.

The modern equivalent would see you using a cloud service, and probably paying a monthly subscription per employee. There is no need to be concerned with licensing of software, or installation of storage or processing capacity, or maintenance of expert infrastructure staff. The subscription is the only cost, and the cloud provider will provide a secure environment that allows you to add or remove subscriptions as your staff numbers change.

This is a single trivial example, but it illustrates the important message that business users should be concerned only with the service and the service quality, and not with the details of how it is delivered. As with any utility, it should be available when you need it, delivering as much as you need, for as long as you want it. Once this distinction is appreciated, it becomes possible to see many more parts of the business that could benefit from cloud-based service provision. It also makes it clear why the siren voices of vendors that call for companies to build their own private clouds is simply the evolution of an outdated model, and should largely be ignored.

3.3 Power to the People

The general truism that cloud empowers users to get things done is actually quite fundamental. It is not simply that there are no real barriers to experimentation with cloud applications, but the fact that there is a natural assumption that users will have the power to do any configuration that's required. Taking hydrocarbon accounting as an example, IDC have made clear that the "needs of new entrants and new markets mean that novel solutions that place the power in the hands of users are going to be the way forward."

This is in stark contrast to the approach adopted by many companies in oil and gas, who still exhibit characteristics of the Command-and-Control Management Model. This is particularly true in IT, where centralisation of control, often aligned with efforts to standardise systems, limits the organisation's and the user's ability to respond quickly to change. The true value of the business, in the form of human capital, is under-utilised and ultimately wasted.

Bring-your-own-device (BYOD) is just one example of the ascendance of the business user, but even more dramatic changes will be increasingly evident. Users will want to choose their own tools to visualise and manage their data, and will expect to be able to do so without significant training and certainly without requiring IT skills. The prime example of the new order will be their experience of technology as a consumer, with Facebook, Google, and Twitter all offering the kind of user experience and ease of use that will be demanded of business applications.

It is widely recognised that there is a fundamental shortage of the right skills in oil and gas. The right tools delivered to the right people will be transformational in productivity terms, unlocking the potential of your team and allowing them to collaborate in ways that are not currently possible.