Introduction

This presentation explores the challenges and opportunities for start-ups in the oil and gas industry with particular focus on the experiences and lessons learnt starting our own company Petryx Ltd. Petryx was launched in July 2018, we are a new digital geoscience company on a mission to provide expert data and services to upstream oil and gas companies. We believe that the upstream oil and gas sector is ripe for positive disruption (Figure 1), and that technological and social advances of the last decade place us in the midst of a geoscience revolution. Disruption goes further than what we offer to our clients, it goes to the heart of our organisation as we change the way geoscientists live and work, and we strive to build a new breed of geoscience company.

Figure 1 Disruption level vs susceptibility. Energy and natural resources are regarded as volatile to disruption as emerging technologies and strategies emerge. Accenture Digital disruptability index (Abbosh et al. 2018).

The environment for start-ups

Today the number of young geoscientists with under 5 years’ experience has dropped in industry (Figure 2). Hard times in the industry has meant a squeeze on the living and working conditions of many geoscientists as organisations are forced to do ‘more with less’. At the same time we are undergoing a wider technological revolution (Figure 3), as the continued growth of fast computing and fast communication allow us to realise previously unimaginable innovations. As data itself is heralded as the ‘new oil’, data nonetheless remains essential in the pursuit of finding natural resources. Drowning in data becomes a greater hazard as volumes increase. Services companies and consultants can play an integral role in managing the transition from more traditional technologies to the industry’s emerging digital economy. At Petryx we bring standardised, organised, and useful datasets to exploration companies, along with the tools they need to utilise them; and we are constantly growing our portfolio of data products in order to place the relevant information in the hands of those that need it.
Figure 2 PESGB demographics, data sourced from PESGB annual salary surveys 2014-2018 (Pickering, 2014; Pickering and Skilliter, 2018). Note significant drop in 20-34 year old geoscientists of ~11%. Mid-career cohorts appear to remain relatively stable in this sample.

Figure 3 Normalized searches within the energy and utilities sector over the last 5 years. Data sourced from google.com/trends. Search terms are ‘topics’ incorporating related terms in statistical algorithms. Note the relative (if descending) stability of Geophysics, versus the explosion of searches for AI and Data Lake topics.

Data wars – an opportunity to disrupt

As observed by Cann (2018), at the end of 2017 the largest companies by market capitalisation were data merchants (Amazon, Apple, Alphabet, Facebook, Microsoft and Tencent), and service companies are increasingly awake to the value of being a data owner. A gradual move over the last few years towards subscription products instead of purchases has allowed value to be retained by service providers, licencing the data for operators to gain insights with less onerous ticket-prices. But what happens during an oil crash when you are stuck in a multi-year subscription agreement and your budget has been cut? It is obviously a seductive strategy for vendors, but we think that there is room for other more attractive options. As time goes by, vendors build products and interpretations on top of data, which allows them to set prices which no longer reflect the underlying resources required to build them, instead pricing in the ‘value’ of data acquired over several years; we start to see a divorce between the work done on a given project, and the price levied. A prevailing market dynamic like this is, we believe, ripe for disruption; and that is exactly what Petryx aims to do, by selling data to our customers in a manner which allows them to break free from injurious long-term subscription agreements and re-makes the link between the price of a product or service, and the work done to create it. At Petryx we offer
market-leading geoscience datasets and tools for fixed prices, with no commitment to pay year-on-year for already purchased data. Our goal is to provide competition to the market, and to disrupt the emerging trends of subscription purchasing and data hoarding.

**Working life in the oil & gas industry**

While digital developments are enabling new leaps in productivity and precision, pressures on teams are higher than ever. The ability for team-members to work at almost any part of the waking day, through remote desktops and mobile devices, has meant that increasingly work follows us home. Despite studies supporting the value of limiting working hours in order to increase productivity, many Anglophone organisations appear to be falling into the trap of working harder, not smarter. As observed in the Financial Times (2018), Germany, with the fewest hours per worker per year (1,356) produces $60.40 GDP per worker-hour, compared with the UK (1,681 hours) at $48.30 (Figure 4), or in other words, “A German or French worker could (in theory, and on average) go home for the week some time on Thursday afternoon and still produce as much as a Briton who kept working through Friday.”

![Figure 4 GDP per work hour of select western economies](image-url)

**Figure 4 GDP per work hour, source: OECD (‘Productivity - GDP per Hour Worked - OECD Data’ n.d.)**

At Petryx we always want to keep the emphasis on quality work, rather than clocking a quantity of hours. As such we have formed a strong set of values which guide the way our company works. We want to be a new kind of organisation (Figure 5) in which our team can make the most of numerous policies which we hope will lead to happier, healthier, and more fulfilling lives both inside and outside of work. Good people, good practices, good prospects.

**Conclusions**

Our experience has been that starting a new challenger company is an exhilarating and fulfilling thing to do. The first few years for any start-up are the most challenging, and many will inevitably fail (Marmer et al., 2012). Perhaps one of the most significant (Edelman et al. 2016), and we believe often under-reported, ingredients to successfully starting-up is that of family support.
Petryx is a family company and its short story so far has been improved greatly for the encouragement, advice, and support from both our work and home families. The oil industry is a welcoming place for innovative start-ups, and we have been very glad to be so warmly received by so many of our peers.

Figure 5 Chief Happiness Officers Juno, and Bran (based on a job-share). Image credit: Petryx Ltd. (CC BY-SA 4.0)

References


Pickering, S., [2014] PESGB Membership and Salary Survey. PESGB

Pickering, S., Skilliter, C., [2018] PESGB Membership and Salary Survey. PESGB
