

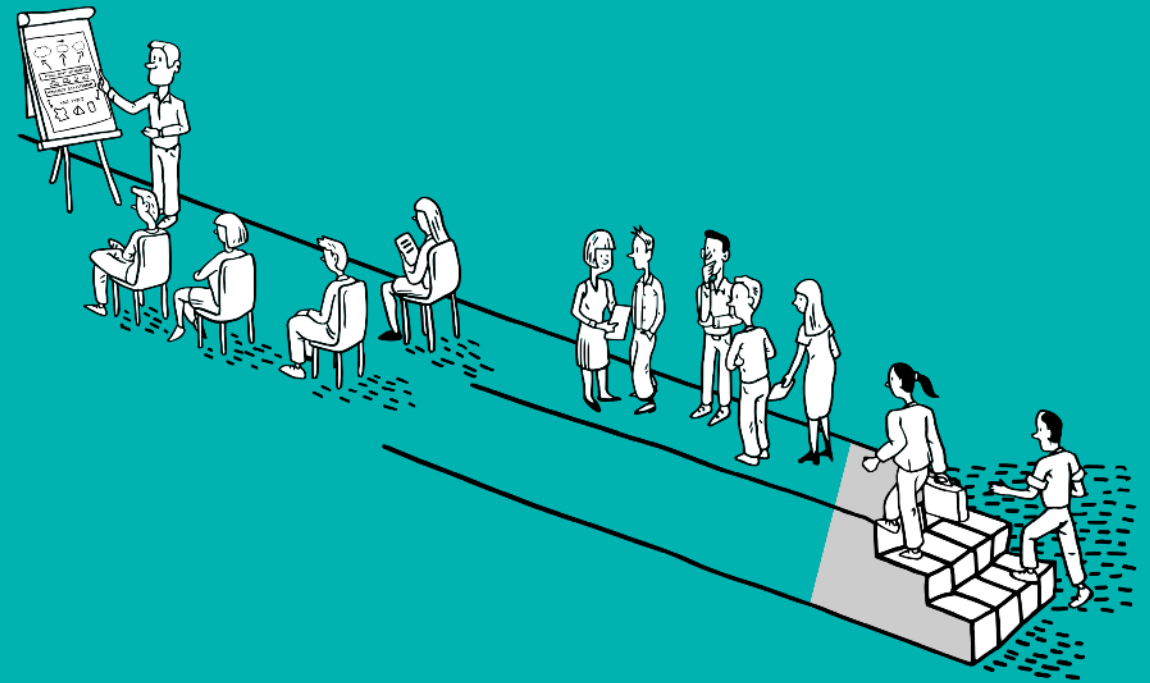
# Professions 2.0

Shamus Rae

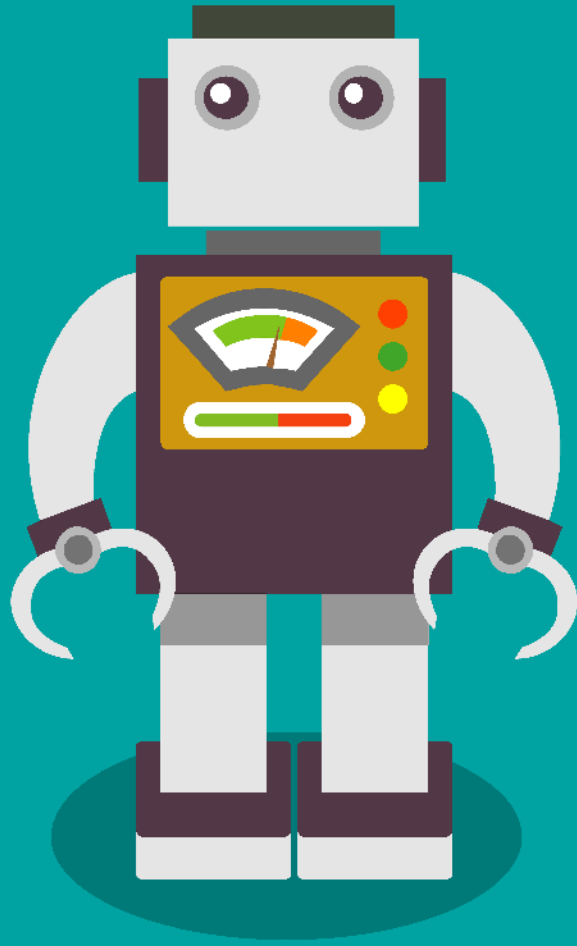
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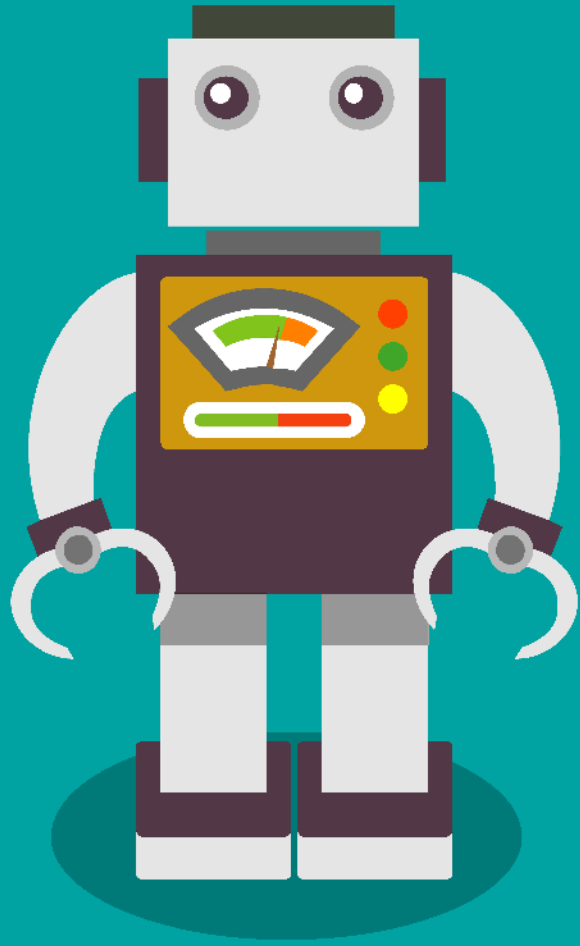
# Where are we now with AI



- Object detection in images or video
- Speech Recognition and speech generation
- NLP (Understanding and generation)
- Narrow based learning
- Alpha One, Reinforcement Learning



# What's next to solve?



- Deep Understanding of language
- Transfer learning
- Low data sets learning (one view)
- Common sense reasoning
- Imagination based planning

“

The conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it

”

**John McCarthy 1956**

“

If someone describes to you the world of the mid twenty-first century and it sounds like science fiction, it is probably false. But then if somebody describes to you a world of the mid twenty-first century and it doesn't sound like science fiction – it is certainly false

”

**Yuval Noah Harari 2018**

“

The embryo of an electronic computer that [the Navy] expects will be able to walk, talk, see, write, reproduce itself and be conscious of its existence

”

**New York Times 1957**

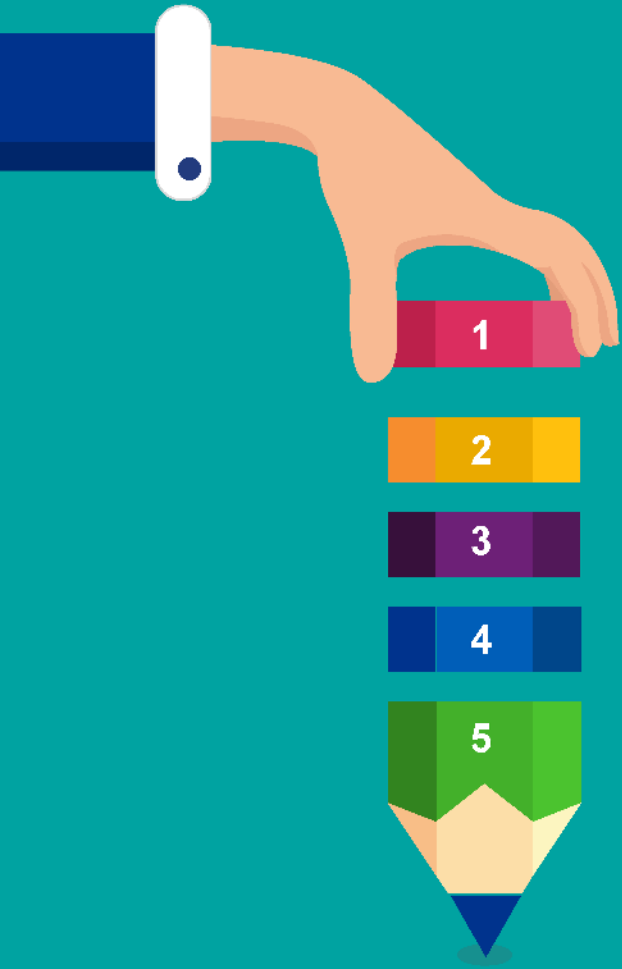
“

Everything that you have ever imagined or seen in a movie will happen in your life time.... AI is real and it's here... over next 15 to 20 years this is going to develop a computer that is much smarter than all us. We call that moment **SINGULARITY** – singularity is a moment beyond which we can no longer see we can no longer forecast

”

**Mo Gawdat 2018**

# Avoid the Kodak Moment



1

Awareness and c-suite

2

Play: Business starts to learn about AI, what's real and what is not

3

Operational Efficiency: Business starts to leverage on current operations

4

Inertia

5

Business Model Change: Re-think the business model front to back

# The problem for today's professional services firms

1

Innovation and cycles of technology are accelerating

2

The third wave of digitisation is focused on delivering frictionless services as close as possible to the user

3

Artificial intelligence and machine learning have huge potential but also need volumes of data in the right format

Whilst these points are true of all industries, the impact for professional services such as Audit, Tax, Legal and Insurance is the most severe. And there are other forces at work, conspiring to create a perfect storm.



Legal



Audit



Advisory



Tax

**Professional services is a \$1.3tr industry today forecast to grow to \$2.23tr by 2023.**

# Client Themes

## 1 Services

- Automation of audit seems like an obvious opportunity
- Focus on new client problems rather than just current problems
- Automated processes in three years may be different in 10 years
- Need to think differently about services that will be required – would blockchain remove need for audit altogether?

## 2 People

- Technology will never replace human intervention and expertise
- Type of skills KPMG need will be different
- KPMG plays important role in ecosystem of business in training graduates
- Skills retention is already an issue and will get worse

## 3 Technology

- Speed of new technology in other areas eg driverless cars shows it is coming quickly
- Exponential move towards automation and we must continue the acceleration – identifying the truly transformational technologies will be key

## 4 Data & Content

- Using data to understand customer preferences will create best customer experiences
- AI already being used in service industry to assess customer sentiment and deliver better service
- Ability to assimilate and use data will be a key differentiator

## 5 Emotion & Trust

- Emotional loyalty to dealing with people must not be overlooked
- Balance between privacy and honesty – biggest distrust is large corporates
- Trust in robots to provide services – could have more integrity than people
- KPMG brand would allow robots to do audit as it is trusted

## 6 Personalisation

- Bots already used in some industries but tend to be tailored for mass market – more personalised service will drive take up
- Nuance is important and difficult to see robots will understand this
- Automation must ensure personalisation in a service is not lost

## 7 Infrastructure

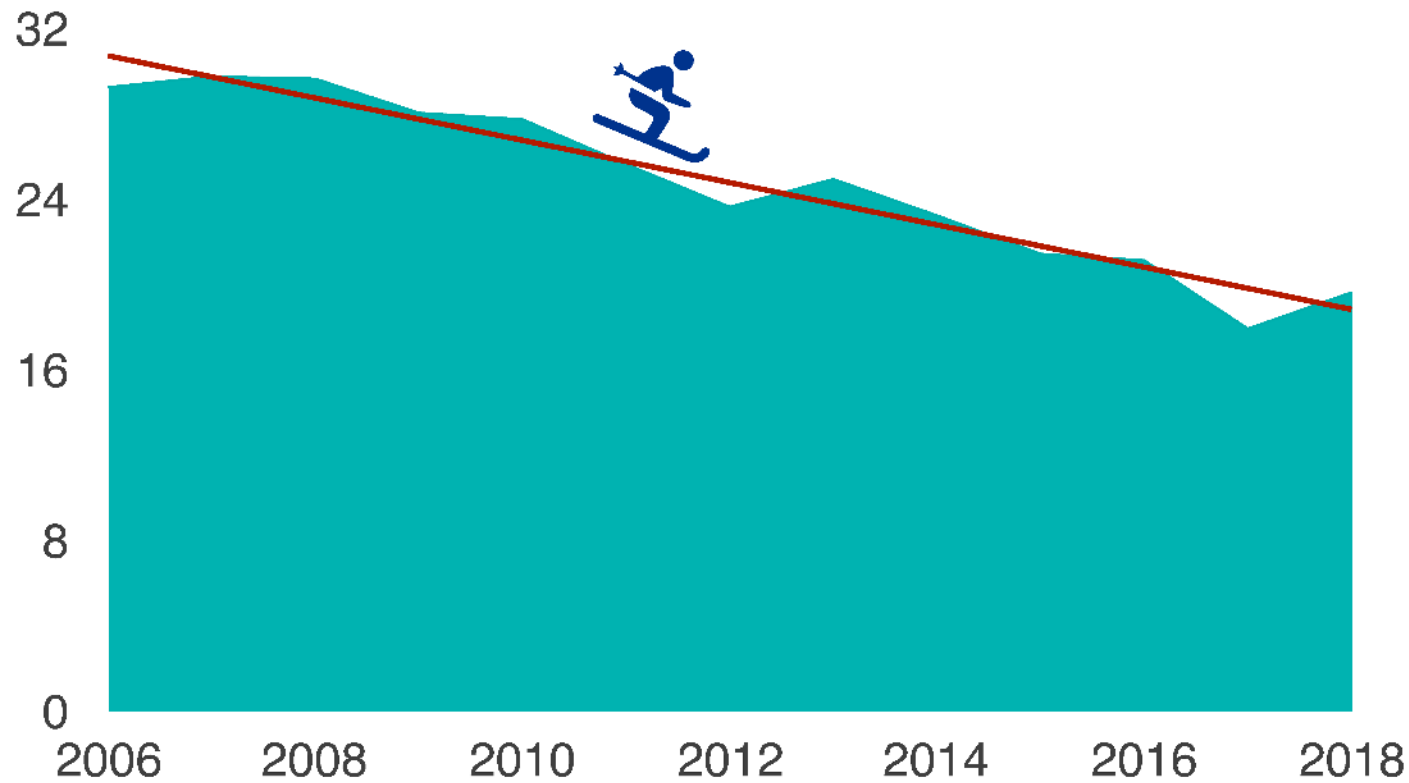
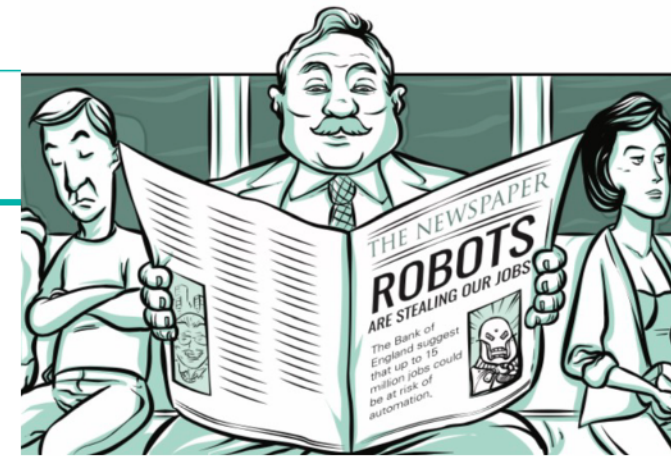
- Infrastructure to move into new technologies will be an issue for some – emerging markets far behind in infrastructure
- Multi-speed world may emerge, don't overlook those forced to adopt at slower pace

## 8 General

- Business models of many organisations and the services they provide today are questionable
- All industries will be here in 10 years but in what form?
- AI should not be feared, brings many positive benefits
- People have the ability to, and will, adapt and adjust



# The Big 4 accounting firms - legal is just behind



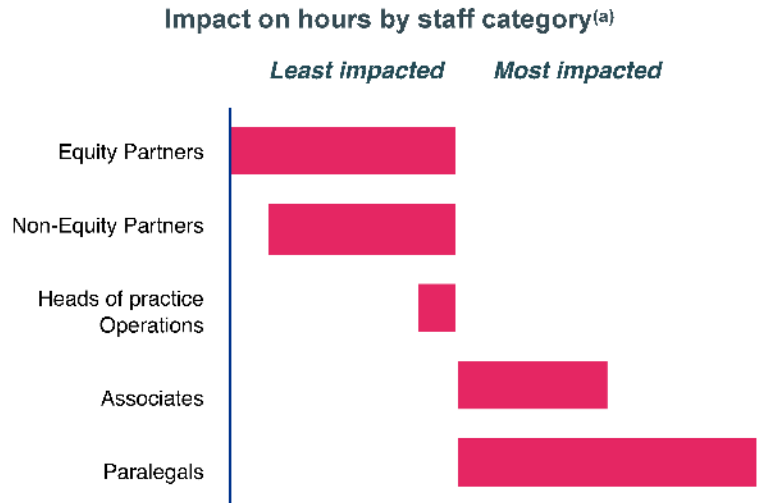
Big 4 Margin - No Tech Disruption	Percentage (%)
2006	30
2007	30
2008	30
2009	28
2010	28
2011	26
2012	24
2013	25
2014	23
2015	21
2016	21
2017	18
2018	19

Major technology disruption over the next 5-10 years will see the margin squeeze accelerate.



# US legal firms non-AI technology impact... wait for AI!

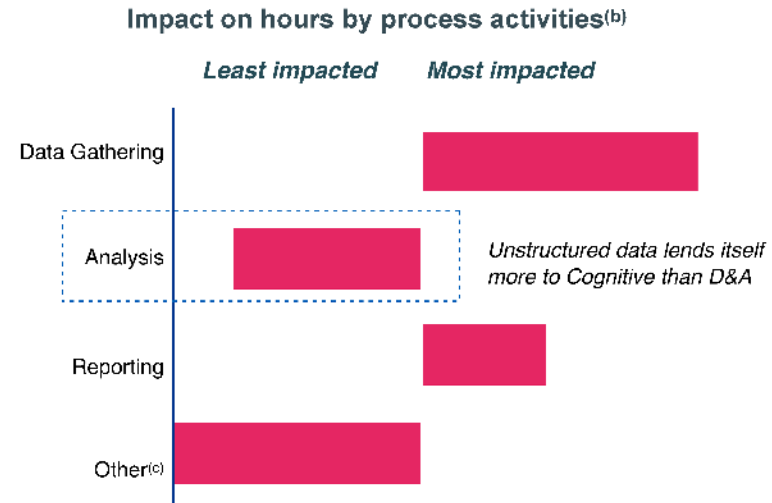
Survey indicates Paralegals and Associates are expected to be most impacted...



*“Associates are reduced significantly as Paralegals are taking over their work using technology. Therefore, we are hiring half of the Associates that we used to hire.”*

- Partner at top 50 US law firm, Board Member, India-based legal outsourcing firm

...especially in the data gathering and reporting space



*“Single biggest impact is in data gathering. The use of discovery tools enables a much lower cost and more effective way of sorting through lots of documents...”*

- Senior Partner, Top 50 US law firm

Notes: (a) Question is not exclusive; Survey question was ‘Please rank each staff level in terms of efficiencies (reduction in hours to complete tasks due to automation and analytics technologies, where 1 = minimal reduction in hours, and 10 = extensive reduction in hours’.

(b) Survey question was ‘Please rank each activity type in terms of efficiency (reduction in hours due to automation and analytics technologies) where 1 = minimal reduction in hours, and 10 = extensive reduction in hours’.

(c) Refers to litigation document review, billing and online databases, research time and long term evaluation.

Source: Legal market survey

# The perfect storm for professional services

- Profitability pressure as GCs mature in procurement skills
- AI and especially NLP will drive automation
- Lawyers don't have training data
- Other industry examples show a different road map to your assumed road map
- Legal Tech supply market selling direct to point of need and not GC but disorganised and still no data

10



The solution is clear, but the scope is pretty terrifying.

# The market dynamics are changing



2018  
Professional  
Services Market  
Size  
\$1.2 tr

2023  
Professional  
Services Market  
Size  
\$2.23 tr

60% of  
market<sub>1</sub> can be  
fully automated  
\$1.338tr

50% price  
reduction<sub>2</sub>  
\$669bn

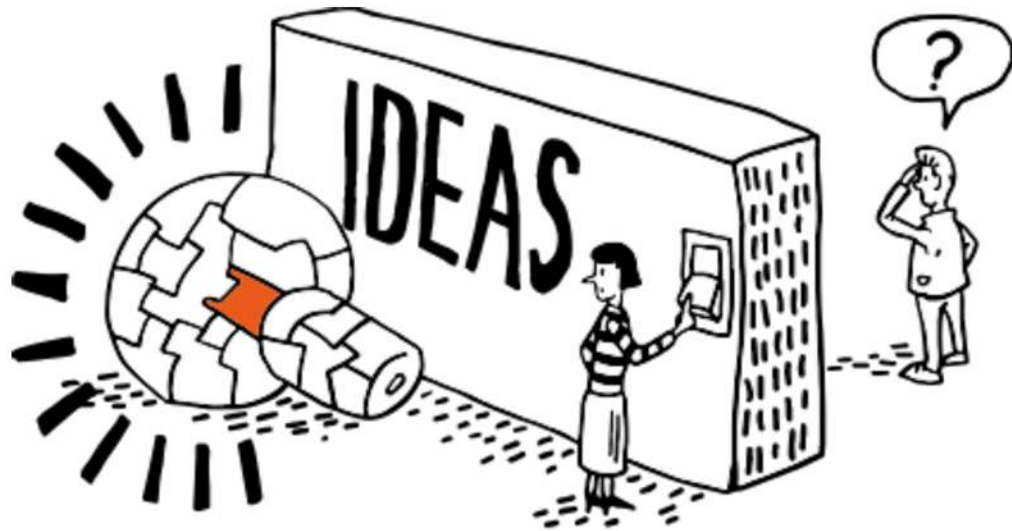
**Maximum market size for automated Professional Services going through Digital Market Places and calling APIs is \$669bn in 2023.**

Ref. 1 Imperial College research puts Audit automation at 69%, tax is higher and legal is 60%

2 Software commoditisation over 10 years was 50% over 10 years so assumption is Prof Service price reduction will be similar but faster

## Engine B is like Open Banking for professional services

Can you imagine a world where we have an open, innovative, vibrant and technology led professional services?

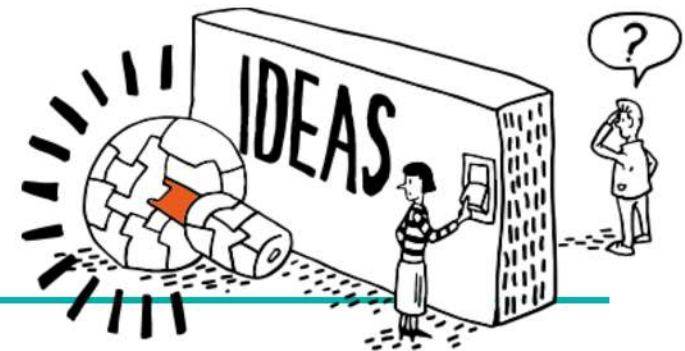


[Open Data Model \(Video\)](#)

# What the industry needs.... openness

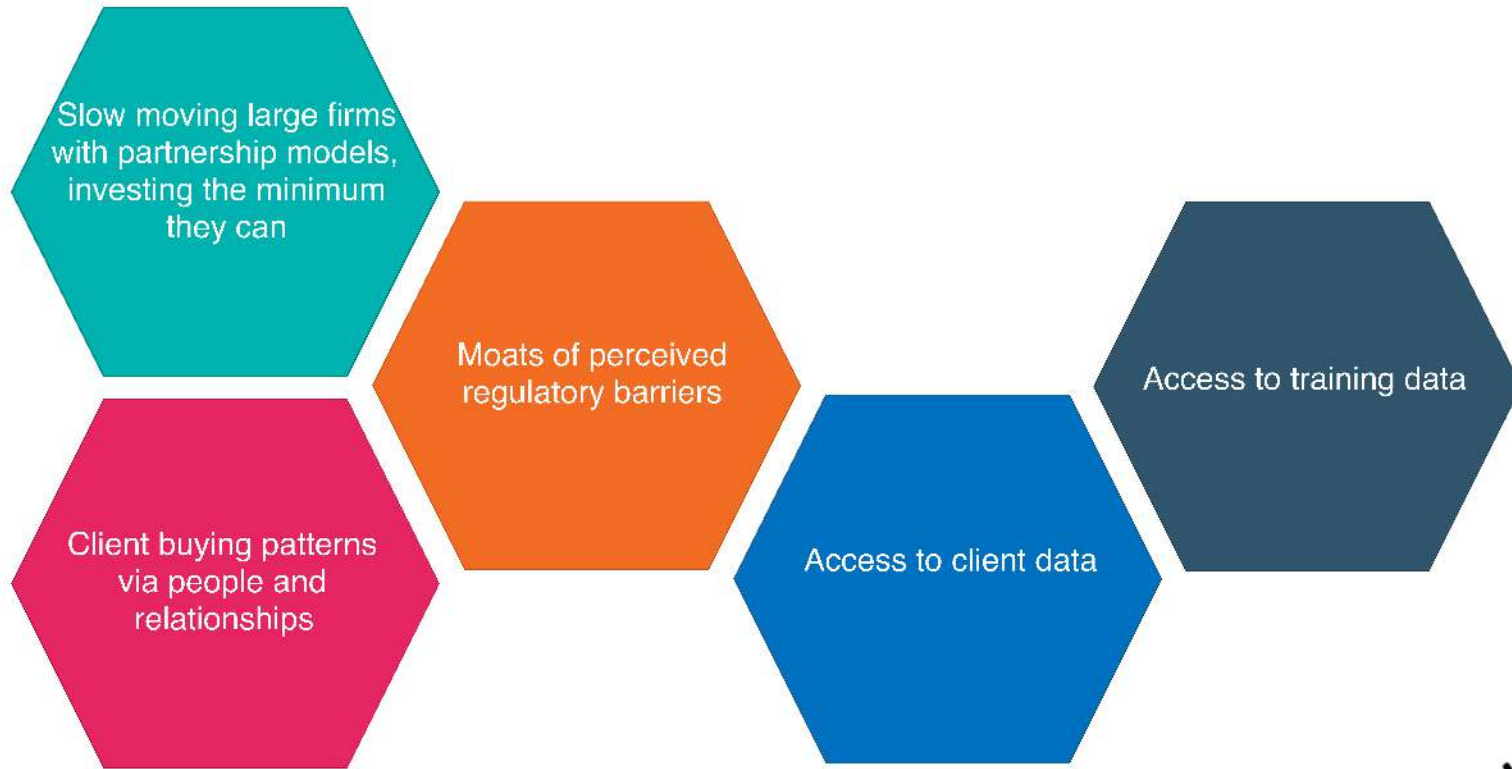
To address these challenges and remain fit for purpose in a digital economy, professional services needs four things:

1. Common Data Models across the industries that facilitate client switching
2. An open Data Exchange Platform that supports new market entrants
3. Identification of the primary use cases that are not being delivered
4. A Market Place that brings together the clients and the providers





# Blockers for change



The access to client data and training data is creating barriers to new competition.



# Drivers for change

## Audit

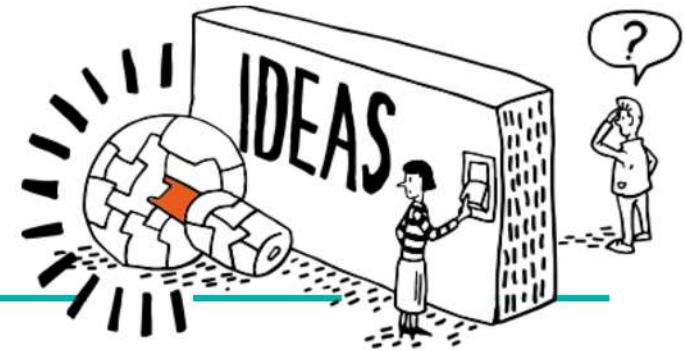
- Audit quality
- Switch from sampling to full audit
- Transition from backwards looking to always on

## Tax

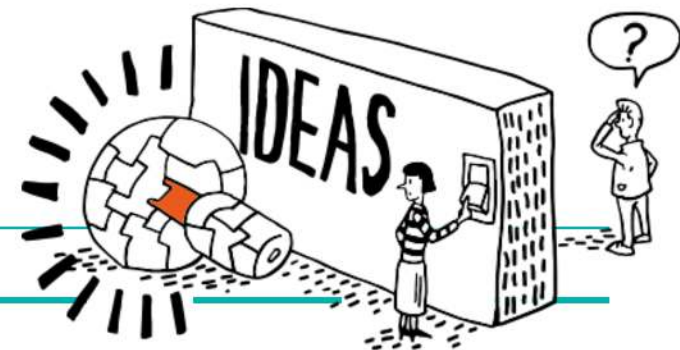
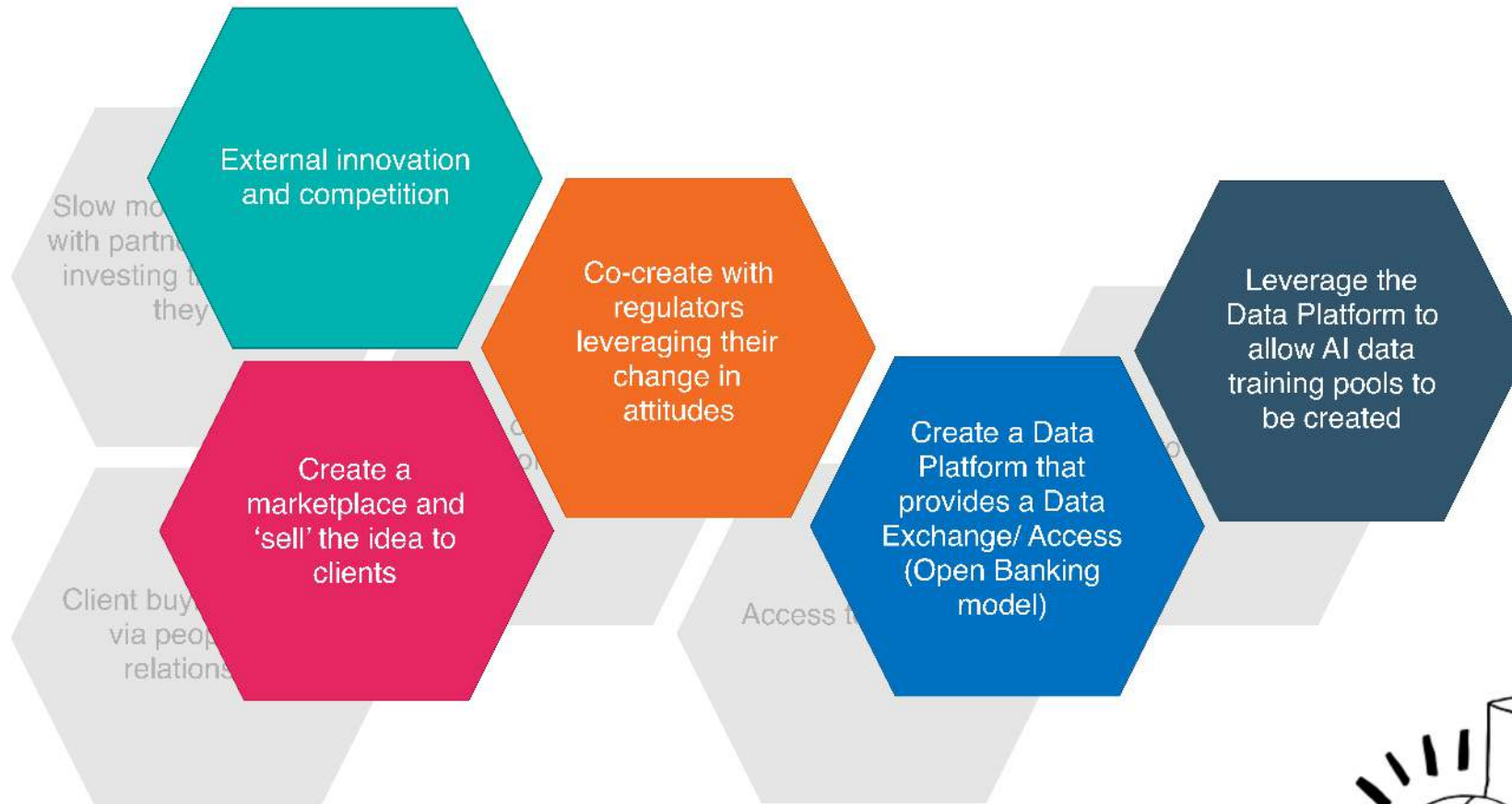
- The digitisation of tax driven by regulators with countries like Spain leading the way and the UK authority wanting to do away with the tax return

## Legal

- Increasing GC cost pressures
- Large number of niche LegalTech start-ups
- Margin has started the accounting industry decline



# Now we remove the blockers



Engine B has the potential to fundamentally transform the professional services industry.



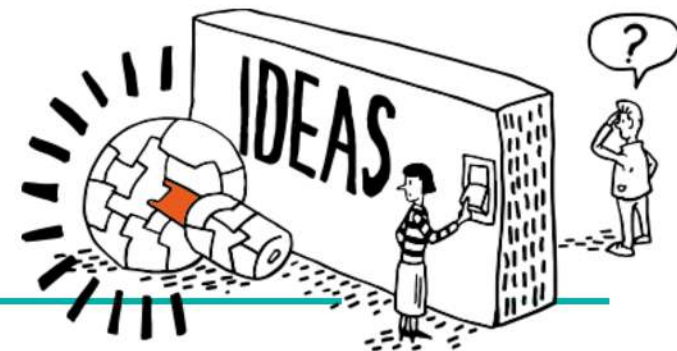
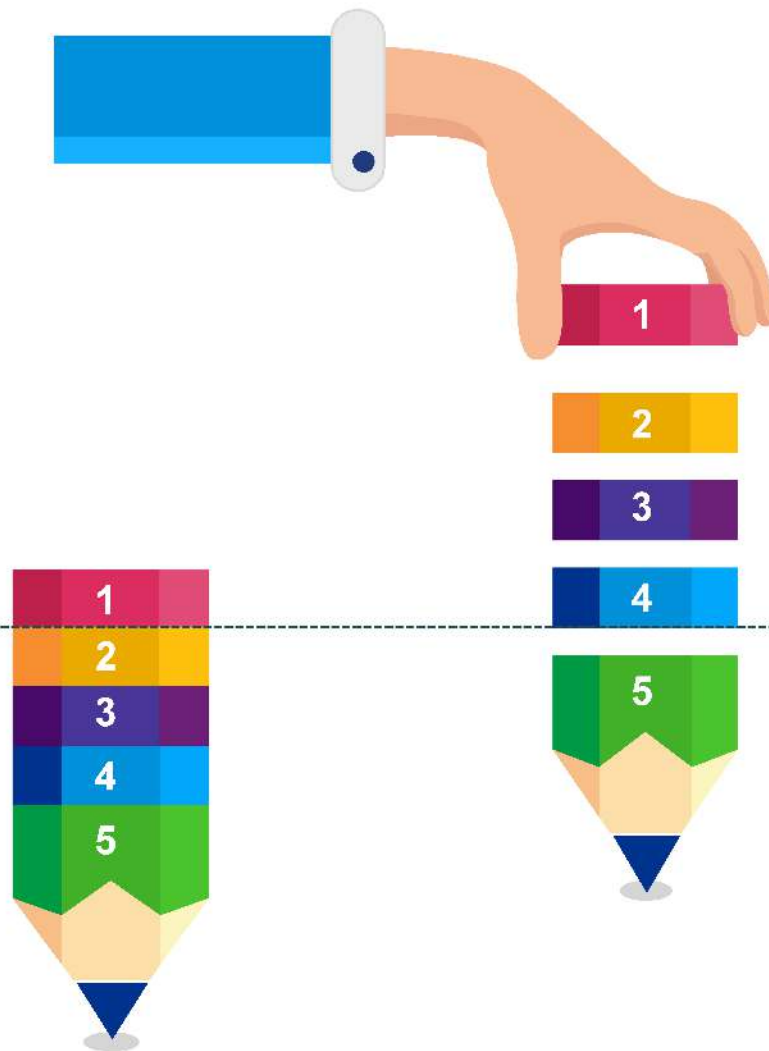
# Increased client data control and open standards

## Current Market

1	Client data stored across multiple systems
2	Proprietary ETL (data transferred to service provider)
3	Proprietary data model
4	Proprietary workflow with all data
5	Audit, tax and legal services

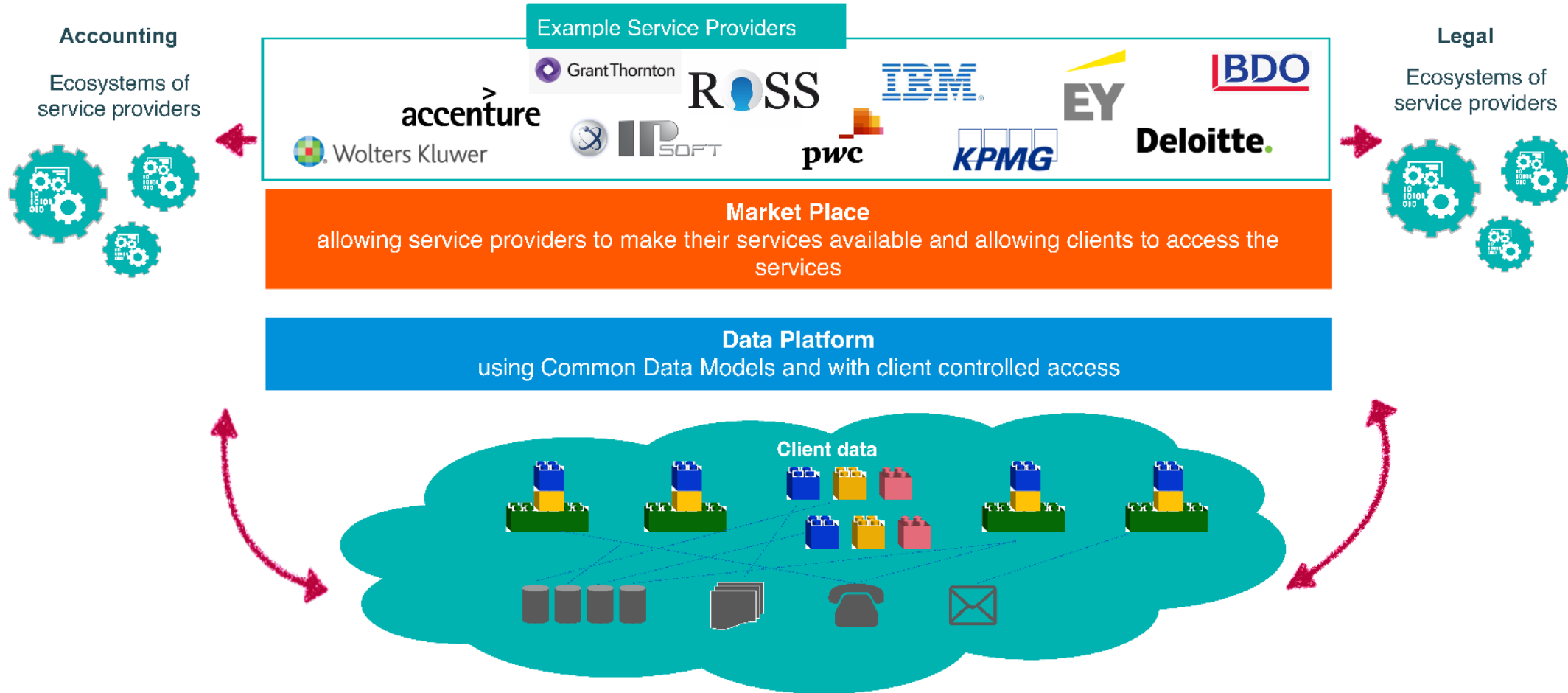
## Open Market

1	Client data stored across multiple systems
2	Data platform (open stack)
3	<a href="#">Open Data Model (Video)</a> and standard data access
4	Controlled data access (CFO video - see <a href="http://www.engineb.com">www.engineb.com</a> )
5	Audit, tax and legal services



# Introduction of a Market Place

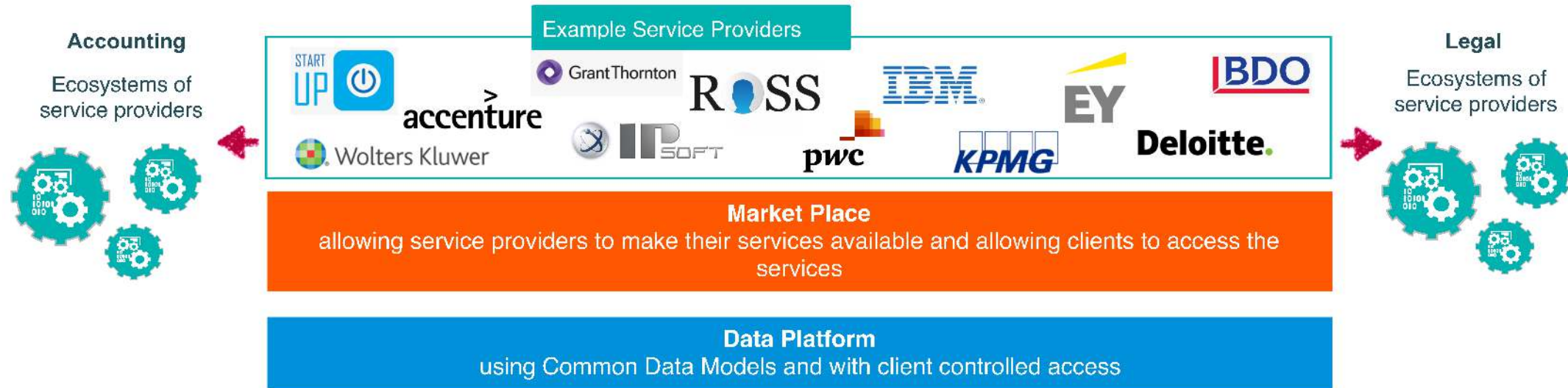
The market place will operate in a similar way to an 'App Store' with services **approved and certified by Engine B.**



# Activating the client side of the Market Place

**Audit** is the logical **entry point for Engine B** as all clients are being audited. The large audit firms are **spending vast sums of money** on developing and installing tools for data extraction **creating no value** and have inadvertently created a **blocker against new entrants**.

- Removing the cost for each audit firm of developing their own data extraction tools and outsourcing to a data platform has significant financial benefit to the audit firms and also to clients who have to install only one standard data platform.



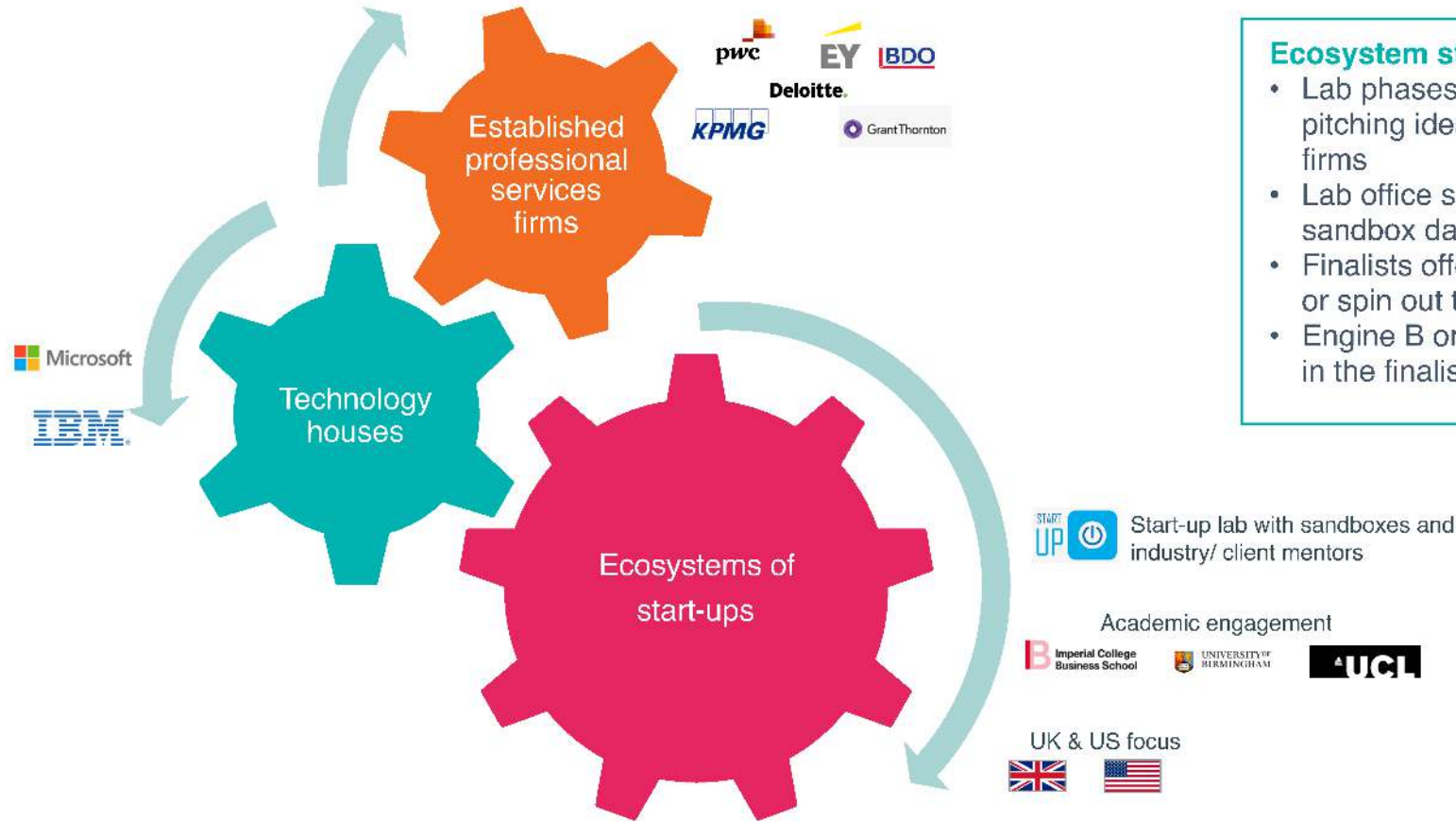
- Engine B then creates awareness with clients about the broader capability of the Data Platform beyond audit and the benefits of accessing services directly via the Market Place.
- The roll out of the Data Platform delivers market share across professional services and allows audit the last chance to 'extract value' from the data.





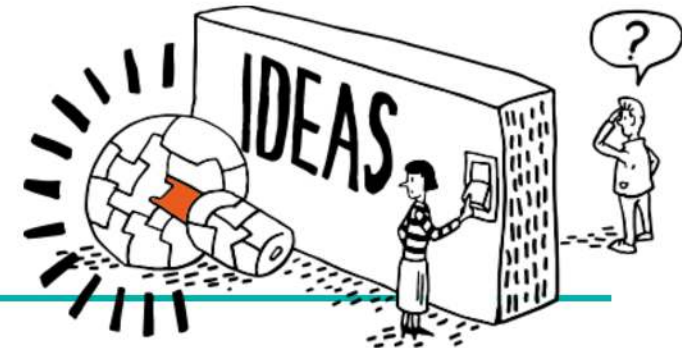
# Activating the service provider side of the Market Place

The service providers will be a combination of the current players in professional services right through to new entrants in the form of start ups and entrepreneurs who until now have had little or no access to the data they require to develop services.



## Ecosystem start-up lab based on the Lloyd's model:

- Lab phases run every 6 months with cohorts of teams pitching ideas to a panel of Engine B, academics and firms
- Lab office space and mentors provided along with sandbox data sets for development
- Finalists offered the opportunity to remain in the lab or spin out to their own offices
- Engine B or the firms have first opportunity to invest in the finalists



# Thank You

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