# An Analytic Community to Enable Data-Driven Transformation

# Executive summary

Data Science, Big Data and Advanced Analytics are no longer buzzwords but vital business tools.  In today's digital world, organisations are increasingly looking at analytics-led strategies to implement data-based decision-making and leverage insights for strategic business gain. Whether the business goals are client acquisition, a reduction in churn rate or the optimisation of store locations, a data-driven approach can deliver critical competitive advantage. Many companies, particularly those with roots in the pre-digital era, are struggling with a dual challenge: adopting and implementing data led strategies whilst retaining market share in the face of sleeker, disruptive and data-borne competitors.

A key conversation lies less around what organisations should be doing, but how they should be doing it. How do you carry out your process or project for maximum deliverable insight? How will the business capitalise on what was learned and maximise opportunities for wider organisational effect? What skills and team ethics are needed to build newer and bigger projects next time?

At Mango Solutions, we know a thing or two about the issues faced by the implementation of data analytics and the importance of building an effective analytics capability to meet those challenges; one step towards tackling these is through building an internal analytics community. Mango Solutions has been running external analytics communities for many years (including the LondonR user group, the Bristol Data Scientists meeting, ManchesterR user group and the EARL – Enterprise Applications of the R Language- Conference, amongst others). These are tightknit and inclusive groups, designed for information exchange through learning and sharing information and experiences. Whilst these are external groups, open to individuals from all industries, they share very similar aims and achievements of closed internal communities.

# Introduction

Becoming data-driven requires more than the purchase of a technical solution or the hiring of Data Scientists – it requires that data be put at the heart of an organisation's strategy: only this will enable the fundamental culture-shift required to realise the potential of the insights that data can generate and to create successful outcomes for the organisation. Mango's own experience, working as a data science consultancy, coupled with the experiences of some of our contacts and external community members has helped us to identify three key challenges that companies currently face in becoming data driven.

## Organisations don't understand what analytic skills they have

Analytics can encompass a wide range of practices, from expertise in Excel to the application of Data Science and Advanced Analytics. However, understanding where these skills exist can be difficult, particularly in large and complex organisations.

## Analytic skills are spread across an organisation, creating barriers for discussions around best practice

Without a sense of community, analytics processes and approaches can vary wildly across an organisation; this can lead to inefficiencies and the missing out of opportunities to improve skills and learnings which could have created better outputs for the business.

## Organisations may have aspirations for analytics, but the community is disconnected

Whilst 'analytics' is now a strategic initiative for many organisations, a lack of community means that disconnected talent cannot be seen as a 'whole'. This renders it incredibly difficult to set objectives across the community and discuss ways to achieve these objectives.

A recent survey conducted by Mango Solutions in conjunction with Women in Data UK and Datatech Analytics confirmed that more than half of all analytics professionals had no access to an analytic community in their workplace.

# The Importance of Building an Analytics Community

## Facilitating connections

As the well-known African proverb says: "If you want to go quickly, go alone. If you want to go far, go together". When it comes to data transformation then "going together" as a community provides many clear advantages.

Connecting siloed analytic teams or individuals is paramount if a company is to adopt data driven strategies. With analysts often using similar tools and techniques or approaching questions and problems in the same ways, it's a classic case of increased communication helping bring minds together to grow together.

Lloyds Banking Group Analytics Senior Manager Arlene Hewitson-Townley believes there is "an accepted truth in many organisations – particularly large ones such as Lloyds – that analytics has grown over time, often resulting in pockets of analytical expertise across the business that can be disconnected from each other".

"You don't know what you don't know, and this can be a real barrier to innovating, sharing best practice and exploring career options. The community is about breaking down these barriers by making it easier to know about analytics and analytical teams at Lloyds."

Sainsbury's Group is another organisation facing the challenge of connecting their analytics professionals, an enormous task for a company founded in 1869 which now encompasses Sainsbury's supermarkets, Sainsbury's Bank, Tu Clothing, Nectar, Argos and Habitat.

Helen Hunter, the Chief Data and Analytics Officer was a keynote speaker at the 2019 EARL Conference; she said "We have the UK's largest loyalty scheme, a really significant online operation, the 5th largest clothing business in the UK, a bank, hundreds of stores, thousands of colleagues, and millions of customers. We're sitting on the UK's preeminent data asset and we've made inroads into the hard yards to make this data available in a way that makes it useful and consumable by all rather than in the vertical siloes of our business."

The 2019 EARL Conference brought together data professionals from a wide range of industries; the community aspect of the event is hugely important and was cited in many responses from delegates, who were asked what they found most beneficial about attending the event:

> *"Hearing about others' experiences and reassurance that I'm not alone"*
>
> *"Meeting other Data Science professionals in a really collaborative and supportive environment"*
>
> *"Networking with other people in the field and sharing of best practice and approaches"*
>
> *"I got to have conversations with new people trying to do similar things / overcoming similar challenges"*

The private sector isn't alone in getting to grips with building an analytic community. When it comes to connecting siloed groups, the NHS faces a particularly daunting task. The UK's largest employer, the NHS has 207 clinical commissioning groups, 135 acute non-specialist trusts and 17 acute specialist trusts – and that's just in England.  The NHS is sitting on a wealth of data that could be used to improve the delivery of healthcare but the lack of commonality around analytic tools, methodologies and processes is a barrier to the open and transparent sharing of useful data analysis techniques. The creation of the NHS-R Community aims to address this issue and is now building strength, thanks to the initial efforts of Professor Mohammed A. Mohammed of the Strategy Unit (NHS Midlands and Lancashire Commissioning Support Unit) and his passionate team of R users.

The NHS R Community took off in March 2018 and comprises analysts and clinicians from a range of NHS and social care settings, including hospitals, commissioning groups, national NHS bodies, public health and local government organisations – all UK-based.

## Sharing Knowledge and Upskilling

The Women in Data UK Survey confirmed that the appetite for professional development and learning new skills is high in this quickly evolving data science industry. An important benefit of a connected analytics community is how it facilitates the sharing of knowledge and upskilling of individuals.

This is an approach that Lloyds Banking Group is adopting. "Through our community we are trying to connect these different areas to share learnings, knowledge and experience, making it easier for people to know what is going on outside their immediate area of responsibility as well as connecting like-minded people who are often passionate about analytics, to give them new perspectives and also to share what else is out there from a career perspective," Hewitson-Townley told us.

The NHS R initiative has also grasped the opportunity to share knowledge amongst its growing community.

Professor Mohammed advises, "We've delivered four three-day training workshops, have a dedicated website with 300+ subscribers, over 1,400 twitter followers, 45 blogs and 17 bloggers. In 2018 we held the first ever "Use R in the NHS" conference which was a sell-out - attended by 119 delegates. There is clearly an appetite; our 2019 NHS-R Conference was booked out in two-and-a-half hours and required a change of venue to accommodate over 300 delegates."

As part of their move to upskill their analytics community, Sainsbury's runs an annual LOVE DATA Conference to connect their data professionals and Mango Solutions was pleased to be invited to deliver a workshop at their inaugural 2018 event.

"We were delighted to have data science experts from Mango participating at our internal LOVE Data Conference for 800 data professionals across our Group," said Naomi Sayers, Sainsbury's Group Senior Manager of ADS Community and Capability Group Data.

"Mango supported our aim of inspiring and connecting our community."

Our experience of working with our own communities and participating in customer communities confirms the value of such events. By facilitating opportunities for their data professionals to meet, discuss their work, demonstrate and share new skills and processes, community events provide a forum to inspire, motivate and encourage their members to expand their skillsets.

In the Women in Data UK Survey, every single respondent confirmed their aspirations to upskill. Machine Learning and Deep Learning skills and expertise in Big Data analytic technologies such as Spark, Storm and Flink, were the topics highlighted as being of highest interest. However, respondents also reported on the barriers to learning new skills, which included time, money, managerial support and, tellingly, lack of access to an analytics community in their organisation.

The growth in the number of analytics communities' user group meetings and the number of people attending these is a clear indication of data science professionals' appetite to network with their peers and increase their own knowledge. Typically, Mango's user group meetings include a free workshop on a data science topic or methodology, followed by presentations from volunteers keen to share their own experiences and expertise. The variety of industries represented at the meetings is considerable, with members remarking that the cross pollination of ideas between industry sectors is what makes the community so interesting and the meetings so valuable.

"We see many effective professional relationships being made, advice freely given and ideas around innovative approaches and methodologies shared. Data science practitioners really want to showcase their achievements and share their knowledge - potentially more than any other profession," said Liz Matthews, Head of Community and Education at Mango.

## Find Opportunities for Creating Efficiencies

A connected community can provide many efficiencies within a business including streamlining effort, validating decision making and implementing best practice.

Lloyds have already seen the benefits of creating their own analytic community: "As an example, within our Group Analytics team we were recently piloting some tech we hadn't used before to help with traceability of code," said Hewitson-Townley. "By sharing this with the community, we got a lot of feedback from across our members who were either already using it or wanted to start using it. This enabled us to consider snags, solutions and uses that wouldn't have naturally come up as part of our testing, and ensured our process for rollout could be shared and executed by other teams across the business – without them needing to go through the same pain and time, so this was a really worthwhile exercise."

## Staff Retention and Career Development

Such is the demand for data science expertise that more companies than ever are hiring data skills. In an industry where the average time in role for a data scientist is less than 2 years and recruitment fees are high, employers are understandably keen to reduce churn rates and retain their highly skilled and knowledgeable data professionals. The creation of an inhouse analytics community is a clear indication that an employer values the skills and contributions of its analytics personnel and is committed to providing them with opportunities for professional development and growth.

Lloyds Banking Group's Hewitson-Townley is extremely enthusiastic about the impact of their internal analytics community initiative on career development. "We launched our Analytical Mentoring Scheme as a pilot in June 2018. The feedback has been great within our pilot group of around 35 people. The second part of the scheme commenced last September and we will continue to monitor outcomes from the mentoring scheme, but many of these people didn't have a mentor at all before, so we're really pleased that we are helping careers in analytics at Lloyds."

# Conclusion:

It's clear that for a business wishing to embed advanced analytics and adopt data driven strategies, the creation and support of an internal analytics community can prove enormously beneficial.

In this paper, we've identified the reasons why a business should have a data analytics community and we are happy to share six key steps to begin building and developing that community.

## Identify the analytics skills you already have

As we've found, many organisations have analytic experts spread across their business with robust processes, excellent project work and strong – if sometimes underground – communication networks already in play. If you can find them, you can begin to unify them.

Arlene Hewitson-Townley of Lloyds Banking Group notes: "With analysts often using similar tools and techniques or approaching questions and problems in the same ways, it's a classic case of wider communication helping bring minds together to grow together".

## Connect and align the members of an analytic community

Once you've found your experts or those who are already actively inspired, connect them. Opportunities to feedback and present great ideas to others, general education or practical comparison meetings are all great ways to start.

Professor Mohammed's advice for other organisations looking to develop their own communities is simple:

"Apart from the obvious things, such as 'It takes time - often more than first envisaged - and resources', my key advice would be to find passionate people, develop partnerships, have clear communication processes, manage expectations and even in this age of e-networking, recognise the importance of investing in developing relationships with people and other networks," he told us.

Sainsbury's internal LOVE Data Conference provides an opportunity for the analytics professionals from across the various parts of their business to see presentations, attend workshops and collaborate with colleagues separated either geographically or by business stream.

## Inspire the community to collaborate and create efficiencies

Build on those original meetings by keeping the spirit that's beginning to bind your people together with incentivised action. Organise hackathons, workshops, webinars, or conferences. Prioritise projects and reward actionable insight generated from them.

Lloyds Banking Group's Hewitson-Townley supports this approach: "We have a number of signature initiatives that we run directly from our team. These include initiatives such as a regular program of skills specific events and local meetups, an analytical mentoring scheme and documentations such as a "Hack Pack" to help other teams run their own. These are all aligned to our objectives to share knowledge, connect people and help support careers at Lloyds for analysts. We now have 100+ colleagues across the business attending community events for business intelligence and advanced analytics events, and 60+ at our Hackathons."

## Drive conversations about best practices, standardising processes

Make sure your data champions are able to review the results of projects and practice together, building process standards and best practice habits (and documentation) – this won't just keep quality high, it will provide an easier entry point for new people with new ideas.

## Leverage the talent in the community via internal and external messaging

Regular communication between the people and processes you already have will naturally begin to identify wider needs, and it's at this point you can begin to spread the net wider, recruiting a greater depth of talent inside the organisation to lend their own experiences to data practice, while recruiting from outside to fill the gaps you've now discovered. Encourage and support employees to attend external tech meetups and report back on practices, ideas and methodologies that could be adopted internally.

## Enable a possible conversation about the centralisation or upskilling of analytic talent

At this point, you can visualise your people and processes as their own academy. From the experience, results and best practices you've now achieved, you can form a fully functioning business centre to drive, execute and hugely expand your organisation's work.

Building an analytics community is not achieved overnight and takes time and patience. Arlene Hewitson-Townley's advice, based on her own experiences, reflects this:

"First, don't worry if things go slowly to start with. It takes time for people to warm up to something different - even if the benefits seem obvious to you. Often people feel comfortable about what they are doing without the need to be part of something bigger, and that's fine, you need to build momentum with your enthusiasts, the rest will follow. So, persistence and tenacity are needed to start with, alongside executive champions to ensure there is a continued focus in the team.

"Second, prioritise your signature projects, and what you will and won't do. There are so many options, ideas and things that could be done, focus is needed to ensure delivery of anything. You can soon get sucked into reactive work, so keep an eye on the ultimate goals you want to achieve."

Data is the most important tech trend since 1990, and implementing a data driven strategy has never been more important for companies wishing to retain market share in the face of tech-borne, agile competitors. Building a data analytics community which unifies talents across the business provides key benefits and quick wins towards embedding the right culture and building the required capability.

Combining nearly 20 years of consultancy experience, Mango has created our own SaaS (software-as-a-service) platform – Data Science Radar. Everything you need to assess skills and competency as a formula to Building a Winning Data Analytics Team.

## About Mango Solutions

Mango Solutions is a data science consultancy that specialises in enabling a data-driven culture within businesses, helping them derive value from data science and data analytics initiatives. It does this via a collection of products and services, delivered by Mango's team of data scientists and data engineers, which help companies use advanced analytics to create operational acumen that improves business performance.

Services include strategic advice that addresses fundamental business challenges to transform data into a business asset; data science solutions aligned to driving use case value; training and upskilling through educational programmes and capability assessments and data engineering and data platforms to create an analytic environment.

Mango also offers products for regulated open source development, including ValidR, ModSpace, Navigator Workbench and Data Science Radar to identify and build world-class data science talent. Visit www.mango-solutions.com or follow @MangoTheCat.