

Disrupting healthcare responsibly: applying design and insights to rethink the way we deliver care



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Now is the time to rethink the way we work in healthcare, designing experiences with people at the heart which are built on a foundation of trust, make sense of data and insights and adopt modern technology to deliver exceptional experiences to patients, staff and caregivers.

Executive Summary

The need to reinvent due to disruption has long been a priority for industry leaders, and healthcare is no different. Many organisations are not adapting fast enough to avoid the negative impacts of disruption. However, rapid changes in the world can also serve as a positive force for change, driving accelerated digitisation, new ways of working and an attitudinal shift in the use of data and evidence. We are seeing a cross-industry shift from speculation-based decision making to decisions based on meaningful insights.

Now is the time to further embrace a human-centred experience approach as we accelerate the adoption of digital capability into our care systems. To successfully transform through design, we need to consider the whole service pathway as experienced by an end user, both physical and digital. This is true whether they are a member of the public, carer, patient, clinician or member of staff. Now is the time to rethink work in healthcare and what that means for our models of care. In order to do this, we need to build on the foundations of trust and the use of data to drive actionable insights.

This is an exercise in redesign which starts with people and is based on the best available information.

We will share in this paper:

- [Our understanding of healthcare's challenges today](#)
- [Rethinking how work gets done](#)
- [Making sense of insights](#)
- [How we approach human experience design](#)
- [What we mean by the foundations of trust](#)

In each segment we share the definition, barriers to delivering, keys to success and where to get started.



Our understanding of healthcare's challenges today

The healthcare industry had consolidated around the 'Triple Aim': improving the experience of care, improving the health of populations, and reducing the per capita costs of healthcare. More recently, a fourth aim has been added: improving the experience of the staff working in the health and care system. This is fundamental as the quality and experience of care patients receive is significantly shaped by staff wellbeing and morale. The workforce typically represents up to 70% of the cost of any healthcare system¹. Empowering the workforce through technology can be a major determinant to the overall efficiency and effectiveness of the system.

The pandemic has not changed these four fundamental aims, but it has brought them into sharp relief. It has particularly highlighted the differences in health outcomes and experience in different segments of our communities. Such health inequalities can be responsible for up to 10 years difference in life expectancy and an even greater difference in the amount of time that the people remain well throughout their life².

The convergence of design, data and technology and the ability to rethink how work is done, has given us a dramatic opportunity to improve all human experience in healthcare.

When the human experience improves, so will the ability to improve across the Quadruple Aim. In IBM's 2022 CEO study, 63% of Healthcare and Life Sciences CEOs shared that their top priority over the next 2-3 years is to deliver a better experience.

Healthcare is experiencing a period of unprecedented challenges. On top of the usual pressures that the industry faces we have seen additional stress put on the system operationally, financially and on the workforce. In order to recover, care services require a level of innovation and digital transformation that has not been seen before in the industry. It is our belief that this transformation is only likely to realise the full benefits by an acute focus on the human experience, putting people at the centre of how technology and systems are designed to create change. The application of modern methods of automation and advanced analytics offers the opportunity to streamline and optimise working processes in a way that releases more time for reskilling of key stakeholders in the healthcare system.

In pursuit of the 'Quadruple Aim,' healthcare is being reshaped by changing demand, and supply.

There are well documented challenges that healthcare faces, an ageing population is one of the most pressing. According to the World Health Organization (WHO), between 2015 and 2050, the proportion of the world's population over 60 years will nearly double from 12% to 22%³. This has significant implications for the demand on health and social care. Almost all diseases become more common with age and the risk of requiring social care support becomes more likely. Ageing leads to increasing levels of co-morbidities and an increasing prevalence of long-term conditions.

In many parts of the world a backlog in elective procedures, exacerbated by the pandemic, are at an all-time high. There is a pressing need to recover normal healthcare system performance to address ever growing waiting lists. For example, in the UK it is estimated that there are approximately 6.5 million people currently on an elective waiting list.

The most significant change in the system's ability to deliver care is the global shortage in both healthcare practitioners and the morale of those currently working in the system. The WHO has estimated a gap of 18 million healthcare practitioners globally by 2030⁴. For many working on the frontline, the pandemic has been the most stressful time of their

professional careers, and they are now faced with the pressures of addressing the elective backlog. This has led to approximately 40% of healthcare professionals facing burnout⁵.

The other significant shift that we have seen is the rise of the empowered patient; we see an increasing adoption of a self-care model, where patients and care givers are now expecting to be equal partners in both planning and setting goals for their care and working towards better care outcomes. Patients and care givers are expecting to have more control over both their records and their own care experience, a trend that is being fuelled in part by the significant development of healthcare apps, with ~350,000 currently active in the market.

Another important development has been the shift to more tailored services to cohorts and the targeting of services to individuals and groups with common needs. Such individual care is considered not only to be an important foundation for more efficient services, but also the means to engage traditionally 'hard to reach' groups and reduce health inequalities in access, experience and outcomes. With the advent of genomics in the frontline of care delivery, increasingly this tailoring with genetic details will open the possibility of pharmaco-genetics and precision medicine.

Lastly, increasing cost has long been a challenge in healthcare with its inflation often at 6-7% per year⁶. This is compounded now with an additional priority for the industry: the requirement for it to step up to its responsibilities in addressing the challenges of climate change and creating more environmentally sustainable models of delivery.

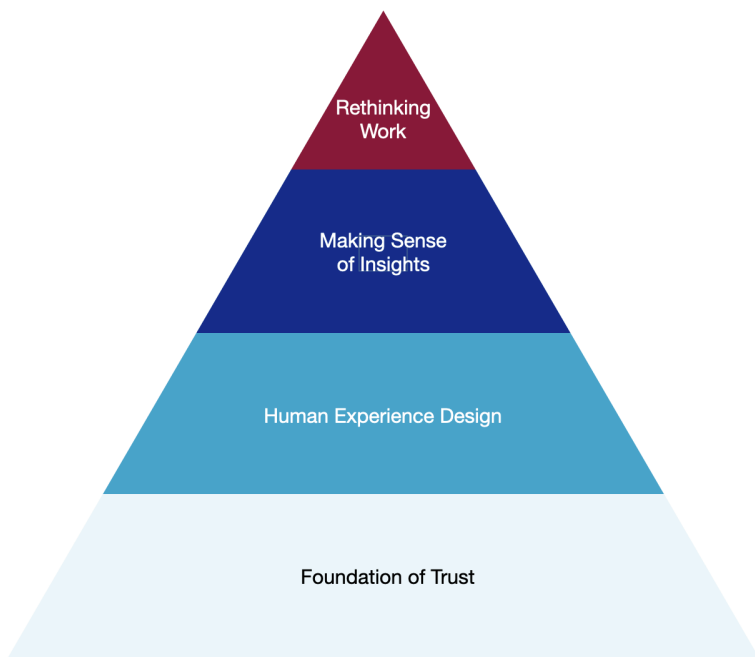


Image: The building blocks to disrupting healthcare responsibly

Rethinking work to work smarter, not harder

What is rethinking work?

Rethinking work seeks to modernise core business operations within an organisation. These operations will be made up of processes and workflows enabled by individuals with the skills, current and future, to perform their tasks. We want to make these workflows “intelligent” by applying technology thoughtfully to take manual or repetitive tasks away from the workforce, freeing them up to work on higher-value activities. Organisations need to identify and prioritise the most important workflows and related areas of opportunity in clinical care, corporate services or administrative areas that will have the most significant impact on their workforce.

We put the member of staff’s experience at the centre of every workflow improvement because delivering a better experience for the workforce will have a direct impact on the service we are able to deliver patients.

Once the biggest opportunities to improve staff experiences through workflow optimisation have been identified only then do we think about the ways technology can be harnessed to meet that need. This may be through leveraging the power of targeted data, next-generation applications and platforms or a reinvented hybrid cloud infrastructure.

A mature healthcare provider in the Middle East worked with IBM to rethink their cross-department processes, designing an award winning digital front-end experience powered by automation.

Barriers to rethinking work

In order to improve workflows and gain benefits from exponential technology, healthcare organisations must consciously stay ahead of their skill requirements. According to IBM’s study to close the digital skills gap, the half-life of a learned skill is estimated to be five years. For those delivering digital change in the healthcare workforce, this means that in five years, skills learned today are half as valuable in five years.

Rethinking work is essential for improving how work is done, reskilling teams to introduce human-centred design, and connecting modern technologies with the human experience.

Keys to Success

To deliver human-centred intelligent workflows, organisations will need to focus on the following action areas:

1.

Go beyond the patient experience

Organisations in all industries have long, been focussing on “customer experience” but the way an organisation services its customers or patients is largely driven by the employees who deliver that service. By focussing on removing friction from those members of staff, who especially in healthcare in the current climate are nearing burnout faster than ever, we will be able to improve the service and outcomes for customers or patients.

2.

Continuously evaluate skill supply and demand for current and future requirements

Organisations should proactively understand the needs of the market, the business, and their workforce, creating deeply personalised skilling experiences that are served up in the flow of work. When possible, leverage AI to tailor employee notifications, learning paths, and content to fit both business and individual needs.

3.

Match leadership traits aligned to design, technology, and workflows

With the prioritisation on the human experience supported by technology, leaders must adapt and grow their comfort with leading organisations that have become technology-enabled businesses. New coalitions of leaders (clinical leaders, CIOs, Chief Digital Officers, Chief Transformation Officers, etc.) will need to be brought together to collaborate, share metrics, and incentives. To get started, let's create:

To deliver human-centred intelligent workflows, organisations will need to focus on the following action areas:

- A transparent channel of communication with your members of staff and document the areas of their workflow they believe need improving the most.
- Prioritisation of areas for improvement based on what will deliver the most value.
- A feedback loop with your workforce to show where improvements are being made.



Making sense of insights

What are meaningful insights?

Meaningful insights can be summarised into one statement: making the right data available to the right people, at the right time to empower them to deliver or consume services in the way that has the most impact. In order to achieve this, data needs to be organised, current, accessible and trusted.

To best understand how data needs to be organised, how frequently it needs to be updated, and how it needs to be accessed, it must be understood through the lens of the human who is engaging with it. Insights inform the human experience, but this is reciprocal, we must let the human experience drive how we present and digest insights. We therefore need to empathise with and understand the humans interacting with our services to create and surface meaningful insights in the right place in the moments that matter the most. Having the right information accessible at the right time can at times mean the matter of life and deaths, and other enabling technologies.

Barriers to delivering meaningful insights

Delivering meaningful insights which are individually tailored to end-user need at scale is daunting in the world of healthcare.

The key barriers are:

- We have so much data, but it can be unstructured, hidden or out of date. Inevitably system data is created and stored in different places.
- Users don't have trust in the data, they do not feel confident to make key decisions based on the insights available.
- Accessibility: an overwhelming amount of data is available, but it isn't clear how to safely access it and how best to take away key insights quickly.
- Fragmentation: Data has traditionally been organised and limited to providers, but modern healthcare delivery needs a data architecture centred around the individual. This needs to accommodate disparate data sources such as financial, operational and clinical, which need data linkage, underpinned by interoperability standards, to be shared at a large scale.
- Security and information governance: in healthcare we are dealing with the world's most precious data and rightly its use is approached with caution, however this fear can become a disproportionate blocker to unlocking real value.

The keys to success

To making your data work for you and provide meaningful insights, organisations will need to focus on the following action areas:

- 1. Understand what people need to do with insights**
Engage and consult end users to understand what insight people

need, how they need to receive it, when they need to see it and crucially what action or decision it will support. We need to limit the time spent searching for, compiling and manipulating data that is regularly accessed.

2. **Implement Data Governance and Standards to empower people to own their data**

Data and information governance is the process of managing the availability, sharing, usability, integrity and security of the data in enterprise systems. It is based on data standards and policies, working closely with information governance to control data usage. Effective data governance drives data consistency and trustworthiness, mitigating the risk that it is misused. Standards need to be agreed centrally so that individual domains, be they regional or functional can be empowered to own, manage and use their data. This also makes an incremental approach to managing insights possible, by prioritising those domains whose data will deliver the most value quickly, then updating the central data governance as new domains are added.

3. **Build trust and confidence in insights**

Build trust in insights to enable people consuming the data to have

confidence in the decisions and actions those insights support. Insights need to be presented to users transparently with explainability; it is difficult to trust an insight which feels like it has appeared from a “black box”. A lack of confidence and trust can be a barrier to adoption of data driven decision making. Adoption is crucial to unlock the true power of meaningful insights which will drive large scale transformation around population health management/personalised health, elective recovery, care coordination, supply chain and vaccines and immunisation.

To get started, let's create:

To deliver meaningful insights, organisations will need to focus on the following action areas:

- An understanding of what data you have, hypotheses of what insights you might be able to derive and what value those insights will drive
- An inventory of the skillsets in your organisation and assess where you may have skill gaps that will limit the pace at which you can progress to make greater use of data and engage with insights generated
- Advocacy for data driven decision making throughout your organisation and document stakeholder engagement required to enable this cultural shift in ways of working

How we approach human experience design

What is human experience design?

A key to the improvement of the human experience is thoughtfully creating experiences using a design-led approach that focuses entirely on creating a better experience for a human being, whether it's a customer, employee or business partner. In healthcare, this could be any member of the public, a patient, clinician, or member of staff. The heart of creating great experiences can be summed up in four words: **Friction out, intelligence in.** There is evidence from most other industries that it is a realistic aim to take significant friction out of people's lives and give them back time using automation, analytics, and other enabling technologies.

Barriers to delivering

Healthcare by definition is empathetic and human-centred. This can be described as a "designer's mindset" and other industries strive to embed this way of thinking amongst their workforce. However, it's the execution and ability to harness this mindset to deliver brilliant digital services and experiences to users that is often lacking in healthcare. This can be due to a combination of factors, commonly legacy technology, burdensome processes, fragmented organisations and underinvestment in digital. In addition, there is a scarcity of designer talent across healthcare provider

systems to translate user need into digital capability.

Keys to Success

We need to understand the humans interacting with our service. Through any design and delivery process we need to be working with and for the people we provide for. Their end-to-end journey through the healthcare system needs to be empathised with and carefully considered.

To improve the human experience, organisations will need to focus on the following action areas:

1. **Build empathy with the people we serve**

To design and deliver a human-centred service we must put ourselves into the shoes of our users. We create personas through user research, mapping the challenges and pain-points of these cohorts. This informs the design and delivery of the service, centred on satisfying the most pressing needs for our users.

2. **Make value-based decisions**

Once we understand our users' greatest challenges, we translate these as needs and prioritise them. We order these based on feasibility (complexity and cost), viability

(business value, clinical risk, strategic alignment) and desirability (scale of user problem solved). This method of prioritisation is called Speed-to-Value.

3. **Deliver experience using an iterative approach**

Iterative design is incredibly powerful, lots of up-front design is good, but without continuous user engagement “Big Bang” go-lives can deliver a solution which doesn't solve the problem a project set out to deliver. To maximise clinical and staff time, prioritise prototyping solutions in low-fidelity wireframes and then higher fidelity clickable prototypes to get real user feedback from tangible technology in people's hands which ultimately leads to better user adoption and higher user satisfaction.

4. **Design for scale**

For design to deliver enduring change, it needs to be scalable across an organisation. Without a design-for-scale mentality we are destined to repeatedly get stuck in the ‘pilot phase’. It is important to harness platforms, technology accelerators and methods such as DevOps to maximise scalability of a solution.

To get started, let's create:

To deliver human experience design, organisations will need to focus on the following action areas:

- An inventory of the users of your service(s) and build a list of the largest challenges they face.
- A value orchestration method to prioritise the work which needs to get done in order of the magnitude of the problem a solution may deliver.
- Multi-disciplinary squads who test, learn, and iterate continuously while engaging with their end users.



The foundations of trust

Why is trust fundamental to delivering care?

To change ways of working, trust is critical. It comes from having an experience-led view of design and service transformation, as well as having the right skills, but also having a clear narrative and communication on what technology, data and analytics can deliver – and what they cannot.

To reach wide-scale adoption with trust, communication is not enough. We need trust based on results.

Adoption with trust, in turn, delivers value to healthcare, helping build the talent and skills and ultimately the empowerment core to driving proactive reinforcement and ongoing evolution of the models of care. The models of care and underlying data and technology are then leading to a new demand for talent and skills and allow for technology's virtuous circle: Engage, empower, adopt, reiterate.

Trust as a core barrier to delivering digital transformation

One of the biggest barriers to tech and data-driven transformation in healthcare in recent years has been the lack of trust. Often trust is focussed on the use of some of our most sensitive personal data. Issues of control and transparency have hampered the public debates on this.

However, there is another important aspect to trust in this arena: lack of trust in core systems and processes which underpin organisation-wide transformation. We see mistrust in large-scale IT-driven programmes which may not be expected to deliver to scope, on time or on budget. We see a lack of trust in the data entered and used to generate insights, and the mechanisms through which automation leads to insights, especially when we venture into AI. Transparent, ethical and user-focused AI is one of the core demands of healthcare professionals and the public, with 'black box' AI being one of the biggest concerns and drivers of poor trust in the value AI can bring to healthcare.

Traditionally in the healthcare space, most people aren't ready for iterations, i.e., there is an expectation of a ready-made product or service, and an in-built 'do no harm' priority, which means unless something is appropriately vetted and tested it cannot be trusted to be deployed. At the same time, each one of us is a consumer of digital products, understanding well in our personal lives that constant iteration is a feature of technological progress (e.g., regular phone updates) and that it can be done safely, without reducing trust in the original product. With the modern application of clinical safety standards and the processes in place to measure and mitigate hazards it is possible to adopt agile implementation processes.

The keys to success

For this to happen, organisations will need to focus on the following action areas;

1. Secure both the human and machine elements

Systems must be designed and maintained with a philosophy of secure to the core. Standard security protocols must be in place and maintained over time. User governance and pervasive encryption policies need to be consistently deployed across the organisation.

2. Engage partners with a track record of trust

Evaluate existing and future partners on their experience internally and externally around trust.

To get started, let's create:

To build trust, organisations will need to focus on the following action areas:

- Clear frameworks for both legal and ethical data use with an emphasis on individual control and transparency.
- Easy to adopt explainability methods in the use of AI and automation.
- A focus with procurement on return on investment not just in financial terms and an open system of procurement that focusses on outcomes.

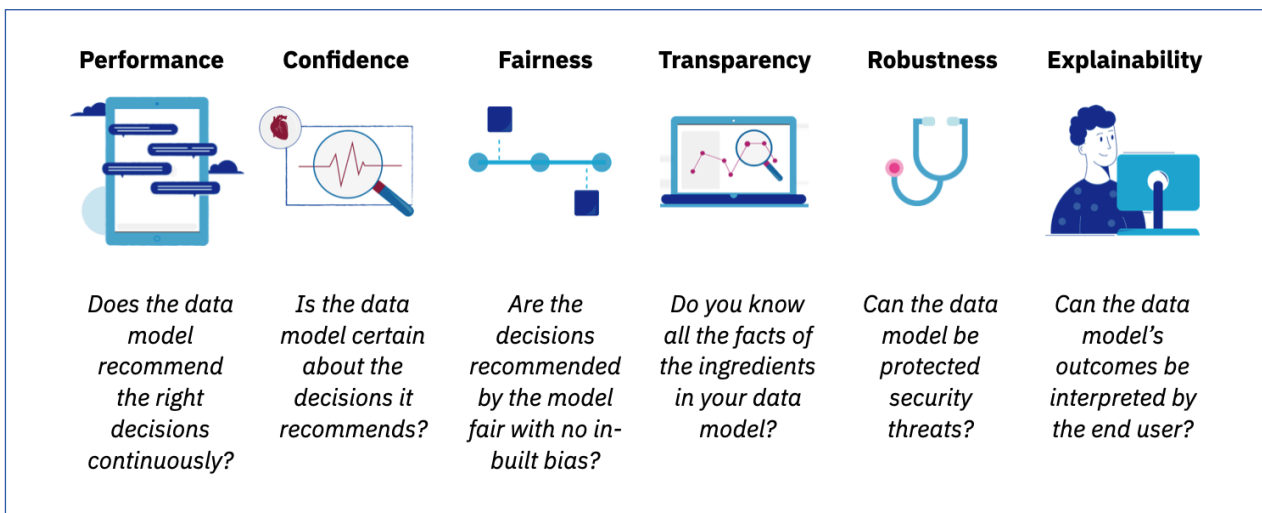


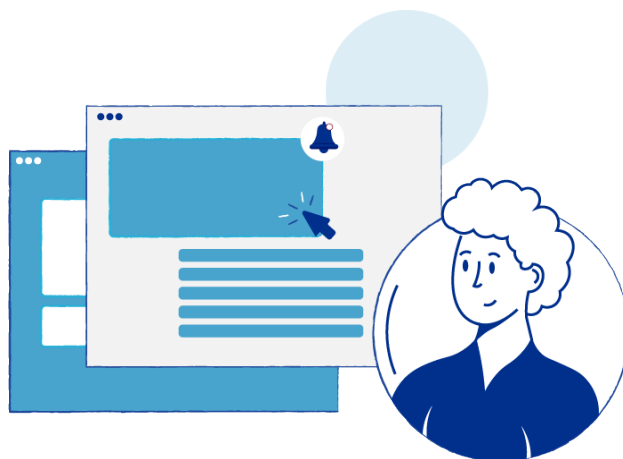
Image: Meaningful insights we can trust

Accelerating delivery

The good news is many industries have been successful in paving the path to improving their industry aims to rethink work through human experience design enabled by meaningful insights, built on the foundations of trust. To support healthcare leaders' progress on their journey to improve across the 'four aims,' IBM has created a global healthcare acceleration team that conducts accelerator sessions focused on the keys to success above. The output of the accelerator sessions are an aligned charter, business value assessment, and a prioritised roadmap to achieve improvements. This way of working is the IBM Garage methodology, a value driven digital delivery method combining human-centred design and agile ways of working.

This methodology allows organisations to innovate quickly while keeping appropriate guard rails in place to reduce the risk. The method jump starts initiation and prioritisation while also being a long-term execution engine that scales innovation across the organisation. Organisational agility is essential, but implementing "agile" is not enough, and rapidly multiplying decentralised iterations can spiral out of control. To help mitigate the risks of rapid change, organisations need the right methods, mindset and technology to convene and unlock the power of teams across an organisation.

This shift from experimentation to scale to impact is a massive undertaking. To learn more about how to get started contact a leader below who will help schedule a healthcare acceleration session for your organisation.





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Acknowledgements

We wish to thank Julian Hunt, Clare Mortimer, Emily Percy, Kate Huey, Romas Pencyla, Shaw-chin Chiu, Tamkeen Rasool, Cristhian Gonzalez, and David Cole who contributed their ideas and insights to this paper.

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