Chapter 22 - Measuring the digital transformation in an organisation: Audit to discover what value was added

Alex Fenton, Wasim Ahmed & Mick Hides

Preface

Reactive organisations move through different strategies and business models with surprising regularity. A mature business with visionary management pauses and reflects to critically assess what has changed and what additional value has been created as a result of their strategic change. Data-driven, people-focused organisations do this with increasing ease and at the same time also rapidly identify new and emerging opportunities. Becoming a self-reflective and self-critical organisation requires a change in collective behavior that must become an habitual part of “business as usual”.

22.1 Avoiding the reactive

In earlier chapters, we explored how the use of data gives better insight of the market, the competition and internal processes. This chapter is a deeper exploration of what it means to be a pro-active and digitally mature organisation. This examination is focused through the lens of measuring change and auditing the organisation to determine what value has been added. Any exploration of value must first define what is meant by the term and how this relates to the core mission and vision of the business. In effect, the units of measurement must be defined with an acknowledgement of organisational context. In this way the meaning of value is a subjective assessment found within the relationship between the customer/consumer and the organisation.

For the customer or consumer the value is the relationship of perceived benefits set against investment in a product or functionality. In simpler terms, value represents the extent to which they are willing to invest time, effort or money. Even more concisely but more theoretically it is the use-value of a product or service. Value has a much wider meaning than direct financial investment or financial capital - an important consideration when optimal price points are reaching zero, combined with the rise of free and freemium business models. In addition, raising brand awareness and building social capital are also valid areas to add value to an organisation. Nonetheless this meaning of value, its exchange value or money-price is the form of the concept that is most commonly recognised by consumers. A consumer’s investment, as opposed to the narrower meanings of payment, cost, money-price or exchange value, is a measure of how much of their time they will commit to the acquisition of an item.

For the organisation the meaning of value is closely linked with that of the customer/consumer. The link to economic value and the labour theory of value remain influential in shaping organisational perspectives on value creation. These perspectives are also the heritage for the argument made throughout this book regarding people-focused digital transformation. It is through people’s labour that value is created and the measurement of value directly equates to the quantity of labour that has been applied to the creation of the commodity. In a post-industrial

sense this equation can still be evidenced through the application of devices that act as a proxy for the direct labour of people including technologies such as software and robotics. What becomes more problematic is the question whether digital technologies are solely a conduit for human labour or whether they act as an amplification device for that labour. Put in another way, do digital technologies create additional value over that of human labour alone? How this relationship between digital technology and labour is understood then becomes a key question for defining the value that is being created by the organisation.

Understanding existing and prospective customer/consumer needs and desires is a significant step in determining use-value (Table 22.1). For any digitally transformed business this means spending time getting to know their customers, understanding what they want and building social capital. Understanding this use-value relates then to organisational determination of the labour expenditure both directly by their people and indirectly through their technology that is required. This direct relationship explains many of the sector wide disruptions that are the result of new business models where digital technologies have displaced direct human labour and, in doing so, have created additional use-value. Examples of these sectorial disruptions include accommodation sharing, price comparison, social media and ride hailing.

The Uber ride hailing app mediates direct consumer and driver interactions through their own access to mobile consumer technology with the resulting offer of on-demand transport (for the consumer) and on-demand riders (for the driver). Uber and other ride hailing apps maximise the productive labour of the driver by reducing waiting time and minimising movement between locations with no riders while simultaneously increasing the use-value to riders by supplying transport more rapidly. Exchange value, the price that the rider pays, is less significant in this perspective that an initial cursory observation might suggest. Pricing is reduced to being a calculated algorithmic outcome determined from this wider assessment of labour and use-value (or supply and demand).

In contrast, the traditional taxi business model involves a human dispatcher manually tracking the location of drivers in relation to the location of waiting riders. The additional human labour required by the traditional model was borne by the dispatcher whose role was to link all the variables of the system together as well as the driver and rider who had to accurately inform the dispatcher of their locations for the system to function correctly. Displacement of this labour with a data-driven solution changes the value relationships in ride-hailing. The displacement of labour is pivoted around the shifting need for robust software development rather than experienced dispatchers.

Uber and other organisations recognise that there is opportunity for further change in the relationship of labour and value within the ride hailing business. The other key labour displacement in the transport sector will come with the introduction of autonomous vehicles. With the removal of drivers from the value chain, labour is again displaced in favour of sensor and artificial intelligence development.

Company	What do they do	Use-Value Example
Uber	Ride hailing app launched in 2009	Ease of use Lower fares
Liftshare.com	Liftshare.com is a UK based app extending the same idea to match members looking to car share to save money and reduce environmental impact.	Save money Reduce environmental impact Speed of response
Fitbit Care	Fitbit Care combines wearables, digital interventions and health coaching through the new Fitbit Plus app to deliver a more personalized healthcare experience and better health outcomes through employers, health plans or health systems.	Outsourced health care Centralised expertise
Cybertill Ltd	Cloud-based EPoS system and retail management software for retailers, brands, visitor attractions, and charity retailers.	Gift Aid streamlining HMRC compliance
Netflix	Netflix is the world's leading internet entertainment service with 130 million memberships in over 190 countries enjoying TV series, documentaries and feature films across a wide variety of genres.	Ability to create own viewing schedules Immediate access Multiple devices

Table 22.1: Examples of creating use-value

22.2 Performance Assessment

Determining the use-value of a product or service and how this will be perceived by the customer/consumer provides the unit of assessment for measuring the performance of a particular business model. By identifying the primary parameter of customer/consumer time the 4Vs can then be used to understand each of these four different dimensions of beneficial use-value. Velocity is the most evident dimension of benefit with a product or service enabling user actions to be completed more rapidly and directly marketed as a time-saving device. A product or service could just as readily enable greater volume of action through parallel actions, automation or process reduction. In combination, greater velocity and volume changes a user's time-based actions by making them more productive. Any increases in veracity and variety that a product or service can bring to a user's time can then be regarded as an efficiency advantage (Table 22.2)

Use-Value	Quantity	Quality
Productivity	Volume	Velocity
Efficiency	Variety	Veracity

Table 22.2: Use-value in terms of efficiency and productivity and the parameters of the 4Vs

Equally important is examination of the organisational structure that supports individual business models. Internal examinations of this type also tend to be reduced to the labour-oriented measures of productivity and efficiency. However, digital transformation and its wider impact on the organisation justifies a further parameter in form of innovation as an equally important consideration. Where efficiency and productivity are generally be regarded as measurements of the quality and quantity of an organisation's internal activities, innovation can be seen as the measure of its rate of change. This references back to the importance of the need for organisations to recognise change as a constant in the activities, that digital transformation itself is never a completed project and that one of the key aims for digital transformation is the creation of an innovating internal environment.

A further measure of the organisation's success is the extent to which it achieves its overall goals. This is a consideration of the extent to which an organisation's own activities are in alignment with supporting its mission and vision (Figure 22.1). Public and third sector organisation will most likely focus on an assessment of the social impact that their work has achieved whereas a commercial organisation may be focused on some form of growth and often financial growth at its heart. These four variables are considered in combination with the acknowledgement that there is a degree of tension in equally achieving high quality outcomes among all of these variables simultaneously.

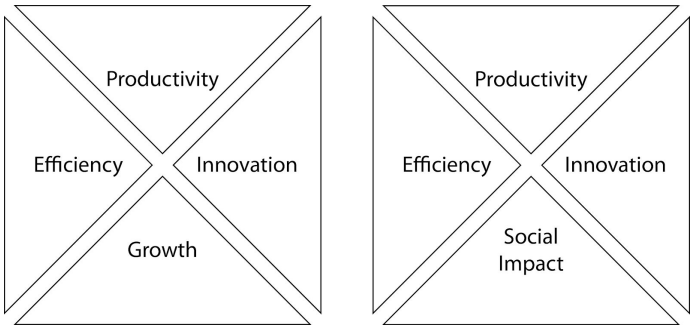

Figure 22.1: Organisational measures of success with growth oriented or social impact oriented strategies

A further challenge to assessing the extent to which an organisation is innovative and has progressed towards achievement of its goals are the ways in which this can be comparatively measured.

22.3 Being data-driven

Value streaming, a key component of lean management, looks to remove or reduce waste within a process. The availability of data within a digital business enables a more meaningful evaluation of the value stream.

The relevance of the data being captured should be clarified at this point. Identifying what data is being captured and how this relates to the value stream is a key element is critical as it is very easy to be seduced into assessing meaningless data leading to the wrong conclusions.
Prior to implement a change it is vital to determine the current situation or “as is” status. Knowing the current situation enables the target performance to be determined; this is the “to be” goal. Once the change is underway the data will provide evidence of a successful change as well as demonstrating the stability of the system.

Further examples can be seen in professional and semi-professional sports clubs. Data and change measurement is becoming increasingly critical to achieve competitive advantages on and off the pitch. They may employ social listening services to rapidly monitor launches of kits and/or particular services. This insight should then be acted upon, for instance, if a new service receives a particularly negative press then remedial action may be put into place.

Recent years have seen a more sophisticated use of data such as machine learning and artificial intelligence which can be used to predict and extrapolate rich information from data. Sports clubs draw upon millions of data points from players such as diet, training routine, and physical activity over previous games in order to predict the possibility of a player becoming injured. Sports clubs often also use data in the player recruitment process. Mistakes in employing the wrong players or team tactics can be costly. Therefore, having the correct systems in place to measure change in complex and shifting landscape internally and externally is fundamental to maintaining the competitive edge.

There are also questionable uses of using digital data within organisations such as snooping on employees, utilising algorithms to predict employee departure, monitoring web traffic, and crawling the Internet to find employee related information. The methods of monitoring employees for audit purposes is going to increase (Wartzman 2019). They mention controversy over Amazon winning a patent for a wristband that allows for the ultrasonic tracking of an employees hands in order to monitor the performance of an employee on assigned tasks.

Measuring the right things is far more important than rather measuring efficiently. The volume of data present within a digital system can be overwhelming, and it is important to identify which data to concentrate on. Multiple customers within a process mean competing values and any business needs to determine which have priority.

The volume of data being presented needs to be managed to ensure effective assessment. Data analysis involves inspecting, cleansing, transforming, and modeling data to allow interpretation and informing decision making. Increasing data processing capacity and capability transforms the handling of large data sets into instantaneous results. Especially where the results are being viewed by an unskilled audience any data needs to be translated into a usable form. The simplest version of this involves the use of data visualisations such as graphs which can also extend to identifying trends to become a predictive tool in real-time.

A wide range of data visualisation tools exist and continues to grow, meaning all organisations have access to powerful data analysis tools. Translating data therefore into visual forms allows a wider range of people to be able to make judgements as well as more skilled data analysts to reveal further details especially around outliers that otherwise may be dismissed as noise. Knowing the location and density of existing members of a service might persuade new users to join or not. Extending the ability to analyse large data sets opens the potential for artificial intelligence in learning characteristics of the process (Ismail 2018).

22.4 Becoming a self critical organisation

The 2018 PwC Annual report on internal audit report surveyed 2500 organisations. It found that 75% of Internal audit functions who use advanced technology with the correct blend of employee skills and knowledge contribute significant value back to the organisations. The report also found that more advanced internal audits were creating departments with a cohesive technology and talent strategy (PwC, 2018).

The use of data to audit continually and measure change is therefore crucial to deliver value. It allows organisations to better understand the role and impact of new technologies and innovations. Management expect that decision makers and external consultants such as internal auditors understand the potential of new technologies and can provide data backed advice on how to capitalise on the opportunity but also to manage any risks associated. This is the key to becoming a self critical organisation. Utilising data analytics, monitoring and intelligent automation were also key to enhance productivity and thrive. Self critical organisations are therefore taking calculated risks to invest in technology, tools and training based on evidence from audit.

A truly self critical organisation is one in which the cycle of audits and review is embedded throughout the culture of the organisation extending the learning organisation concept (Garvin 1993). This extends to all parts of the organisation and it will fail (or at best be constrained) where this thinking is limited to a small group.

Auditing best practice is a proactive, risk based approach undertaking by the organisation analysing and assessing data and business processes.

Risks can be determined using the Digital Business model with specific emphasis on VUCA and 4Vs. Specifically an external review of the business can determine the VUCA challenges as discussed in Chapter 2. Digital Businesses tend to have a higher risk appetite than more traditional counterparts, and as such the management of risk must adapt accordingly to align with the strategic objectives. The 4Vs can be translated into key performance indicators enabling continual monitoring of the business health between pre-determined tolerances. Indicative (trending) or actual breaching of these tolerances flag Issues which prompt automatic and/or manual responses. Further exploration of the business model determines the ability of the business to consistently add value for evolving and expanding customer' expectations. Audits should cover not only the individual business model elements but also interactions between elements as a whole business system.

The implementation of live data and continual monitoring only reinforces the need for periodic audits to review measures and ensure VUCA and 4V decisions are still valid. The rapidly changing environments in which digital businesses thrive mean assumptions made at the commencement of the audit cycle are potentially no longer relevant or accurate (Veracity). The audit need not be restricted to just looking within an organisation but where comparable data exists benchmarking against competitors or market leaders in similar organisations or situations.

Key Takeaways

- Organisations are increasingly becoming proactive and digitally mature and therefore it has become important to develop an understanding of the uses of data in organisations.
- Digital organisations that gain popularity among consumers offer and create value through the use of digital technologies.
- Cross-sector digital disruptions have occured in digitally mature and proactive organisations who have created additional 'use-value' for consumers.
- A wide range of organisations ranging from accommodation sharing, price comparison, social media and ride hailing services have created new value for consumers.
- Use-value can be evaluated in terms of efficiency and productivity and the parameters of the 4Vs.
- Organisations should understand the concepts of becoming 'data-driven' and what it takes to be a self critical organisation.

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