Managing **customer experience** through a systematic approach to **data analytics**

UNIVERSITY OF CAMBRIDGE
Cambridge Service Alliance

IfM | MANAGEMENT TECHNOLOGY POLICY

We all know what a positive – or negative – customer experience feels like: a rush of pleasure or teeth-grinding frustration. Firms are acutely aware of the importance of how we feel – and how that translates into long-term loyalty – but feelings are a difficult and complicated thing to measure at scale.

Recognising the need to quantify something, and do so in a way that is relatively easy to implement, many firms have relied on one-dimensional techniques such as satisfaction surveys and net promoter scores.

However, the limitations of these approaches have become increasingly evident over time. It is clear that they can actively mislead by failing to elicit customers' true feelings and intentions. Another weakness is that they are used to measure discrete customer interactions when there is a growing recognition that in order to understand the customer experience, you need to consider the whole customer journey and not just isolated incidents along it.

Which is, of course, easy to say and hard to do. But the advent of machine learning and big data analytics brings previously impossible tasks within the realms of possibility. The tech giants have shown us what can be achieved. But most firms – particularly those born in the pre-digital era – are struggling with two fundamental tasks: how to capture the data they need from all the relevant touchpoints, channels, devices and applications they use to interact with their customers and how to turn what data they have got into insights they can act on.

To date there has been surprisingly little research carried out in this area and what there has been is relatively narrow, focusing on text mining open-ended answers to survey questions. We wanted to help firms take a systematic approach to identifying the different types of data they could use at different points on the customer journey and how they can be translated into actionable insights.

Know what you need to know
Data analytics can be enormously powerful but they can also be a snare for the unwary. Just because you can measure something doesn't mean you have to. In fact, there is a real danger of data paralysis if you don't have the right framework in place and know what you want to achieve. Insights gained through big data must be capable of driving change, of bringing about continuous improvement to the customer experience.

1. What data?
Based on previous research, our framework takes as its starting point the fact that customers interact with organisations in a myriad of different ways across the physical, digital and social realms (see our article 'New thinking about the future of services').

For each key touchpoint in each realm, different types of data may be available for analysis which we have characterised in four ways: structured and, unstructured, solicited and unsolicited. Structured data is usually the easiest to find: most organisations capture it in the form of sales data or satisfaction scores. Unstructured data is often captured but is harder to do anything with: examples include free text responses to questions, or multimedia formats such as images, sound or videos.

Understanding the difference between solicited and unsolicited data is also key: solicited data has been sought by the organisation whereas unsolicited is unprompted and, therefore, may potentially provide more insight - but will need significant resources and expertise to acquire.

Categorising the different types of data you want to capture is a critical step for firms planning their approach to customer experience analytics. It needs to be done within a strategic framework to guide investment in those areas which will best support organisational decision-making.
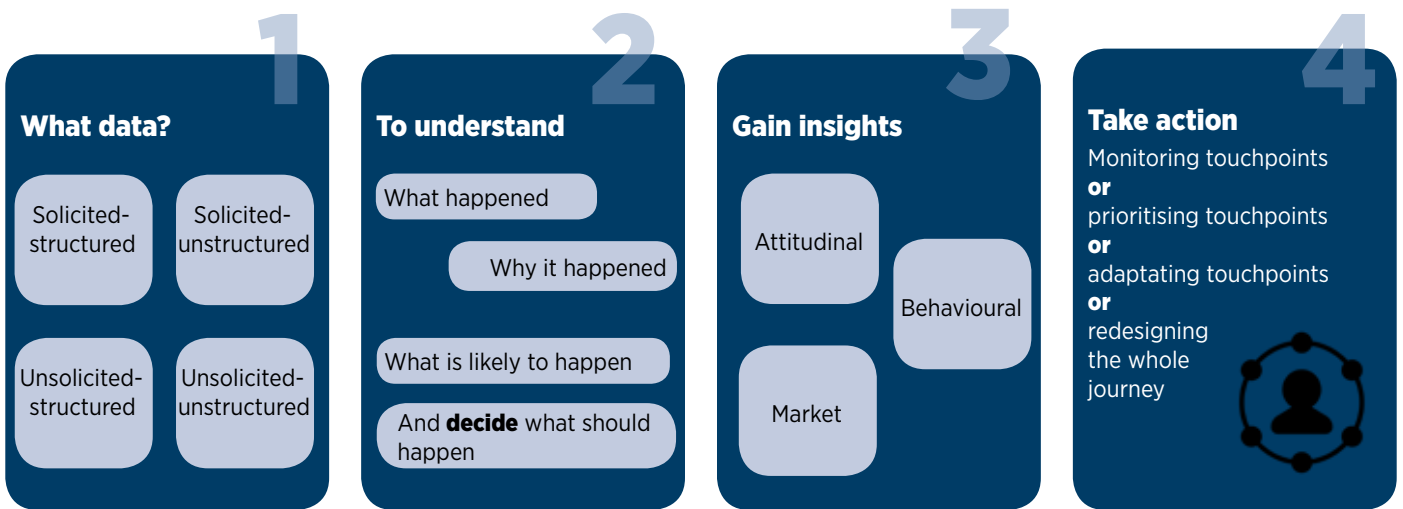
2. To understand: the questions you need to ask and the tools you need to answer them
Different types of data can be used in different ways: to *describe* what has happened, to *understand* what has happened, to *predict* what is likely to happen in the future and to '*decide*' what should happen in future. Different analytical tools are used for each of these activities, ranging from simple clustering methods, through root cause analysis, linear regression and classification models through to dynamic mathematical programming models.

3. Gain insights: reading your customers' minds
Analysing what people say about your organisation is one thing but it doesn't take account of other factors that might be effecting their perceptions of your service. To get a complete picture of a particular customer experience, you need to be able to understand their previous experiences with your organisation, as well as other attitudinal factors that might affect their opinion: how susceptible are they to peer pressure, for example, or how intense is their desire to be pleased? Overlying these fairly stable personality traits there might also be more temporary changes to their mental state brought about by transient events or day-to-day stresses. How can you find that out?

Attitudinal or psychographic insights are being collected by organisations on a regular basis. Contact centres receive huge volumes of data by phone, email, text, chat and other web interfaces. These are fertile ground for analytical tools looking for behaviours (such as shouting) which betray mood. These behaviours can have knock-on consequences if they influence other customers to switch providers, for example.

1

What data?

| Solicited-structured | Solicited-unstructured |

| Unsolicited-structured | Unsolicited-unstructured |

2

To understand

What happened

Why it happened

What is likely to happen

And **decide** what should happen

3

Gain insights

Attitudinal

Behavioural

Market

4

Take action

Monitoring touchpoints
or
prioritising touchpoints
or
adaptating touchpoints
or
redesigning the whole journey

Going one step further than monitoring interactions with the organisation itself (or its service provider), it is now possible to explore customers' personality traits (such as agreeableness, conscientiousness, openness to new experiences) by analysing their social media presence.

Understanding your customers' actions

Being able to track what your customers are doing has never been easier. Google Analytics, for example, gives you a real-time view of how your customers are interacting with you. These insights are more than just descriptive – by analysing past behaviours they can be used to predict future preferences as Amazon and Netflix have been so adept at doing.

But not all customer interactions take place online. Understanding customer behaviours in the 'real world' is just as important and there are plenty of opportunities to do so. In places like shopping malls or airports it is possible to extract behavioural data from wireless local area networks which are provided free of charge to visitors. CCTV footage can also provide insights into customers' behaviour and preferences. However, acquiring and analysing this kind of data is not something to be entered into lightly, raising as it does significant legal and privacy issues.

Understanding your market

Customer experience analytics can also help you gain market intelligence by evaluating your performance against your competitors. Using the same techniques, it is possible to analyse your and your competitors' brand equity and positioning and to get early warning of emerging trends by, for example, using predictive big data analysis techniques on tens or even hundreds of Google trends time series.

4. Take action

Data is only valuable if you do something with it, whether its making incremental improvements or initiating radical transformation. At the incremental end of the spectrum, it's about continuously monitoring the customer experience at key touchpoints against a set of performance indicators. Or it could be used to drive improvements by identifying which touchpoints are the most important, what are the key drivers of customer satisfaction at each and how best to deliver them.
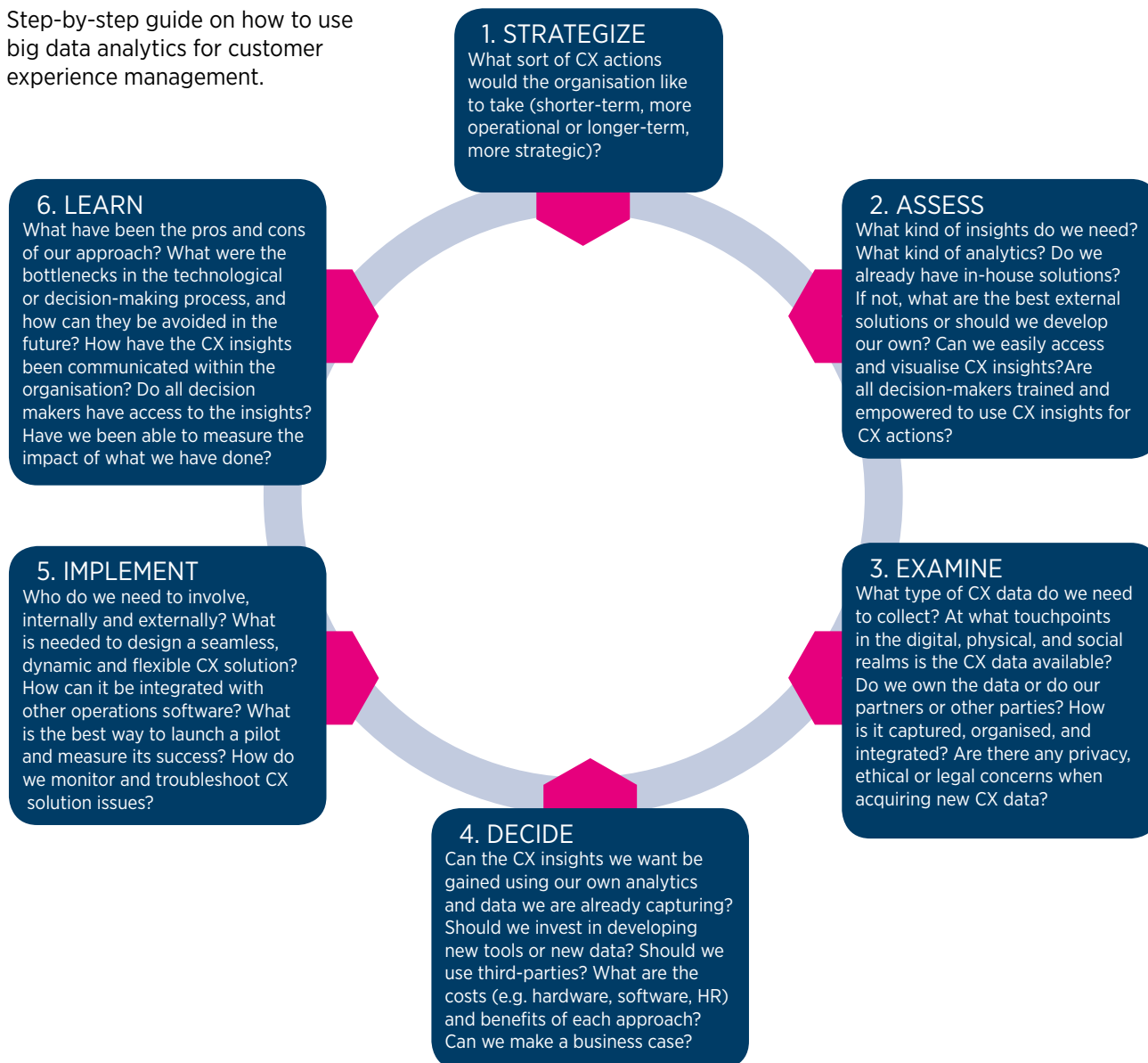
Or you can use customer insights to redesign the entire customer journey and, by extension, business model. In 2012 agricultural equipment manufacturer, John Deere, fitted sensors to its machinery and gave its customers software that enabled them to access their data, benchmark it against others and combine it with external data sources such as information about the weather. The company brought everything under the myJohnDeere.com platform, which it opened to suppliers, retailers and software developers. In doing so, it created an entirely new customer journey and transitioned from a

Top tips for success

1 Be strategic: understand what you are trying to achieve.

2 Be realistic about your organisational capabilities: what can you do now, what do you need to be able to do and should you do it yourself or outsource?

3 Be collaborative: this is a company-wide endeavour, involving customer-facing staff, marketers, engineers, designers, data architects and data scientists. They all need to be involved in building the system. If it's to deliver real value, the insights it produces need to be used across the organisation.

4 Be available: if the system is going to drive organisational change, it needs to be available 24/7 with no downtime.

5 Be agile: learn the lessons from the implementation and continuously improve.

6 Measure the impact on the business: show how these insights are being turned into greater customer satisfaction, increased revenue streams, new service offerings, increased productivity and greater efficiency.

Step-by-step guide on how to use big data analytics for customer experience management.

1. STRATEGIZE
What sort of CX actions would the organisation like to take (shorter-term, more operational or longer-term, more strategic)?

2. ASSESS
What kind of insights do we need? What kind of analytics? Do we already have in-house solutions? If not, what are the best external solutions or should we develop our own? Can we easily access and visualise CX insights? Are all decision-makers trained and empowered to use CX insights for CX actions?

3. EXAMINE
What type of CX data do we need to collect? At what touchpoints in the digital, physical, and social realms is the CX data available? Do we own the data or do our partners or other parties? How is it captured, organised, and integrated? Are there any privacy, ethical or legal concerns when acquiring new CX data?

4. DECIDE
Can the CX insights we want be gained using our own analytics and data we are already capturing? Should we invest in developing new tools or new data? Should we use third-parties? What are the costs (e.g. hardware, software, HR) and benefits of each approach? Can we make a business case?

5. IMPLEMENT
Who do we need to involve, internally and externally? What is needed to design a seamless, dynamic and flexible CX solution? How can it be integrated with other operations software? What is the best way to launch a pilot and measure its success? How do we monitor and troubleshoot CX solution issues?

6. LEARN
What have been the pros and cons of our approach? What were the bottlenecks in the technological or decision-making process, and how can they be avoided in the future? How have the CX insights been communicated within the organisation? Do all decision makers have access to the insights? Have we been able to measure the impact of what we have done?

manufacturing business model to a platform-centric one and, as a result, revolutionised not only its own business but the entire agricultural sector.

Big data analytics undoubtedly has the potential to transform organisations' understanding of their customers' experience. However, extracting meaningful and actionable insights from data is a resource-hungry activity, whether you develop your own capabilities in-house or commission a third-party supplier. Without a strategic approach, there is a very real danger of trying to capture and analyse too much data and seeing little return on your investment. Our framework has been designed to help you understand the problem, consider your options and guide you through the decision-making process.

Further reading

CAMBRIDGE SERVICE ALLIANCE (CSA)

A unique collaboration between the University of Cambridge and some of the world's leading businesses to design and deliver the services of the future. Its focus for 2020 is service transformation through digital innovation.

"Our partnership with the CSA will create a wealth of new opportunities for HCL and our customers. Working alongside the world's foremost academics and leading organizations, we aim to pioneer new digital solutions for the next decade, today. Through these efforts, we will uncover new ways in which digital technologies can empower and transform businesses. We are also excited to be able to uniquely offer our customers the benefits of being a member of such a prestigious alliance."
Ashish Gupta, CVP and Head of EMEA, HCL Technologies

"CEMEX has started its journey to design new services focusing on improving our customers' experience. The Design Lab Services was launched to research, diffuse and implement new approaches and best practices for service design. We are also committed to collaborating with the best universities and experts around the world on applied research and innovation projects to get prepared for the digital revolution."
Martin Adolfo Herrera Salado, Digital Enablement, Business Consulting Services

"One of the key things about the Alliance is the non-competitive nature of the partners within it. That allows us to move away from some of the more traditional IP and confidentiality rules, to openly share our challenges, dig beneath the surface of some of the hype about digital and get into the nuts and bolts about how we really deliver it and the challenges we all face.'
Caroline Burstall, Supply Chain Manager For Industrial Power Systems, Caterpillar

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