

Observations from Twelve Years of an Annual Market Research Technology Survey

Tim Macer and Sheila Wilson

Abstract

Against the theme of this year's conference, "Are we there yet? Where technological innovation is leading research" this paper provides evidence-based observations on where technology has led research in the recent past, and where it appears to be leading now.

meaning ltd. has conducted a survey of market research companies around the world each year since 2004, looking at their use of technology. The survey includes a combination of tracking questions on the adoption of technology-based methods to detect long-term trends, as well as topical questions that vary from year to year, some of which are also repeated in subsequent years to measure change.

Now, with 12 years of data, it is possible to draw a number of conclusions about the way in which the research industry interacts with the technology that supports it, and to understand some of the transformations that have taken place. It is also possible to look at some of the areas where the rhetoric and actual experience on the ground have not been aligned and identify some of the challenges which may be unique to the research industry. Developers need to be mindful of such challenges if they are to succeed in providing useful, appropriate technology that will allow the market research industry to continue to develop, adapt and compete for survival.

The aims of this paper are to:

- Quantify significant changes that have occurred in the last decade, as well as identify those where anticipated change has been slow to materialise;
- Examine some perennial difficulties that the market research industry appears to have with technology development, adoption and diffusion;
- Highlight some of the current and on-going changes that emerge from the data;
- Identify areas that those developing or providing software need to pay particular attention to when supporting these changes;
- Provide specific recommendations to researchers and technology providers.

Keywords

CATI; CAPI; online research; mobile research; mixed mode; data visualisation; coding; text analytics; automated text processing; survey metadata;

1. Introduction

How the survey operates

This paper examines findings from twelve years of an annual survey of market research companies on the technology they use and technology-related matters. Since 2004, meaning ltd. has carried out the survey in partnership with a technology provider, who was nominated as the survey’s sponsor. In addition to providing funding for the work of the survey, sponsors have also provided technical resources to support the survey, as well as sample lists from their customer and sales databases (though this is not the only source of sample, as discussed below).

During the lifetime of the survey, three different companies have fulfilled the role of sponsor during four different periods:

- Confirmit ASA: 2004-2008 and 2011-2013
- Globalpark A.G. (Now part of Questback): 2009 and 2010
- FocusVision Inc.: 2014 and 2015

The sample

The sample is composed entirely of market research companies, and within each company, of an individual who is responsible for, influential in or aware of technology decisions within that company. Each year, a target of between 200 and 250 completed interviews is set, and this has been achieved in most years. The sample size for each year of the survey is shown in Table 1.

2006	213	2007	233	2008	215	2009	188
2010	213	2011	230	2012	250	2013	240
2014	215	2015	206				

Table 1. Sample size achieved for each year of the survey

The sample is managed to ensure representation of three global regions: North America, Europe and Asia Pacific according to the relative amount of research in each region as measured by ESOMAR. Participants from other parts of the world are excluded. A target is set for each region, and sample is released in batches until the target is reached. Quota controls are not applied. The survey therefore does not include responses from South or Central America, or from Africa, for example.

The survey consists of a self-completion interview on the Web, comprising between 40 and 50 questions and is timed to last no more than fifteen minutes. As it is problematic to identify eligible participants from just within a research company, the sampling frame is created from a variety of sources:

- Participants who agreed to be re-contacted from the previous years of the survey
- Sample compiled by meaning ltd from publicly available sources
- Sample provided by the survey’s sponsor
- Social media activities that provide an open survey link

De-duplication is applied prior to invitation, across all of the sample sources, and again after fieldwork is completed, to ensure that only one response is counted from each company in each country. Only the first complete interview from each company is accepted into the sample.

In 2015, responses from open survey links accounted for 9% of the sample and this has increased in recent years. Participants responding through the open survey link are additionally asked to provide company information. This is used to verify their eligibility for the survey by checking the company against directories or by checking their websites to ensure it is a research company. – i.e. that the participant works for a market research company.

The nature of the sampling method, and the survey's strict eligibility criteria (i.e. senior IT decision makers within research organisations) make it impossible to provide a meaningful estimate of response rate, because invitations are sent to individuals without prior knowledge of their eligibility, and there will inevitably be a very high proportion of ineligible participants among those who do not respond.

Demographics

Each year, the data are reported according to two principal demographics: the global regions used to control sampling, and company size. Until 2014, company size was considered in three classes: small, medium and large. From 2014, the small and medium classes have been combined, and this demographic is reported as 'smaller' and 'larger' firms. Larger companies are defined as those with a revenue exceeding \$50 million dollars.

2. Significant changes observed

Data Collection Modes

The proportion of quantitative research undertaken by research companies has varied little from the 67% reported when the question was first asked in 2007. It was the same in 2015, though in all the intervening years it has been around 2-3% above that level, with a median of 69% (Macer & Wilson 2016: 14). The share of qualitative research has similarly consistent, never more than 3% away from a median value of 23% across the nine-year period.

During this same period, there have been some major shifts in the methods utilised to collect data (Table 1). In 2006, the three dominant methods that accounted for 88% of survey volumes were Web (online self-completion), CATI (computer assisted telephone interviewing) and paper-based interviews. Over a ten-year period, Web has increased steadily from 40% to 54%, and CATI has only just retained second place, declining 27% to 14%, while paper declined even more steeply from 21% in 2006 to 7% in 2015 – but it only dropped out of the top three modes in 2014, when it was overtaken by CAPI, which at 12% looks as if it is about to overtake CATI. Whereas three modes accounted for 88% of volumes in 2006, it is now split four ways: Web, CATI, CAPI and 'mixed mode'.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Web	40%	43%	48%	46%	47%	51%	51%	51%	53%	54%
CATI	27%	25%	26%	23%	27%	23%	21%	22%	18%	14%
CAPI	5%	7%	5%	8%	5%	6%	9%	9%	10%	12%
Mixed mode	7%	6%	6%	6%	6%	6%	6%	6%	5%	8%
Paper	21%	19%	14%	16%	13%	14%	10%	10%	9%	7%
Mobile				1%	1%	0%	2%	2%	4%	5%
SMS	1%	0%	0%	0%	0%	0%	0%	0%	1%	1%
IVR	0%	0%	1%	1%	1%	1%	1%	0%	0%	1%

Note: Information on mobile was not collected until 2009.

Table 2. Volumes of work by survey mode 2006-2015

It is therefore the case that interviewing methods are now more reliant on technology, and also more technologically diverse – especially since ‘mixed mode’ is a portmanteau of technologies, and these additional modes add to the cost and complexity of survey administration (Vehovar and Manfreda, 2006).

The rise in CAPI has largely occurred recently, since 2011. The survey also differentiates between laptop and mobile CAPI (on smartphones). In 2015, large format CAPI on tablets and laptops accounted for 8% and mobile 4% of the 12% in total. We believe the recent increase is largely driven by the availability of low-cost consumer devices, increased cellular data coverage, also at lower consumer-oriented prices.

We do not believe CAPI is replacing CATI, but paper, which during the lifetime of this survey, was almost exclusively used in face-to-face interviewing, as is CAPI. We suspect that it is the continued increase in web interviewing that has eroded CATI.

It is also our view that web is continuing to replace CATI, however it is also remarkable how long this transition has taken. The earliest days of web interviewing are probably marked by an optimistic paper about Internet interviewing as a new method by Taylor (2000), and others followed anticipating that CATI work could migrate to the Internet (e.g. Stone, 2001).

By 2006, when this survey first addressed fieldwork volumes by mode, Internet research was well established and had already overtaken CAPI. Yet it took another five years before there was a noticeable decline in CATI, some 11 years since Internet research got going.

Mobile research and mobile participation

A much more recent development is the survey on the mobile device. Here, two different problems have become entangled. First, as can be observed in Table 1, research designed to take place exclusively on a mobile device, has only been observable in commercial market research since around 2009. For the next three years, volumes were barely detectable by this survey. However there has been rapid growth in the most recent four years (2012 to 2015), reaching 5% by 2015.

In parallel with those surveys purposefully directed at the mobile device, where volumes remain low, a disruptive trend has emerged with respect to the Internet survey. This trend observed by Peterson (2013) as an emerging concern for survey designers is based on participants attempting to complete an Internet survey on a mobile device, whether the survey has been designed for this or not. This

phenomenon led to an added question to the survey in 2011. Here, an even steeper rise is reported. In this survey, since 2011 participants have been asked to estimate the percentage of surveys that are taken are on a mobile device, as opposed to a conventional desktop or laptop (Table 3).

	2011	2012	2013	2014	2015
A. Online surveys taken on a mobile device	6.7%	13.1%	16.4%	21.4%	26.1%
B. Recalculated as a proportion of all surveys	3.4%	6.7%	8.3%	11.3%	14.0%
C. Surveys on mobile	0.5%	1.9%	2.3%	3.6%	4.6%

Table 3. Proportion of online interviews taken on a mobile device

In Row A of Table 3, we show the average of all the estimates reported to us by companies on how many online surveys they observe being taken on mobile devices in their online research. In Row B, we recalculated this ratio to show what share this represents of all quantitative interviews. This was done by multiplying the value in Row A with the reported share of online research for that year, as shown in Table 2. Thus the estimate of 14.0% for 2015 was arrived at by multiplying 26.1% in row A by 54%, (the proportion of online research for 2015) from Table 2.

Row C repeats the data presented in Table 2 (but here shown to one decimal place) of the reported share of fieldwork specifically created as a survey for a mobile phone sample.

The most recent figures in Row B show that the effect is now considerable, and furthermore, unintended mobile participation has far exceeded intended participation in every year reported.

We need to raise one caveat on this projection at this stage. Not all companies reported how many participants were taking their online surveys on mobile devices. In 2015 30% of companies were unable to present a figure, which we interpret to mean they are not following this trend and do not know. In itself, this lack of knowledge by so many of those surveyed is a cause for concern.

Analysis and reporting

The twelve years of this survey have coincided with a rapid growth in the use of the Internet as an information source, with a corresponding increase in the range and sophistication of web pages that actually publish data. The survey has contained several questions to monitor the impact of the Internet on the presentation and publishing of research findings by research companies.

One question asks which reporting methods are applied to research projects, and in what proportion; a second question asks how important it is for companies to be able to produce cross-tabular reports in bulk – that being the traditional way in which research data are processed and presented for analysis.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Microsoft PowerPoint	48%	48%	49%	51%	53%	53%	53%	53%	49%	55%
Microsoft Word	30%	20%	18%	18%	16%	17%	14%	12%	12%	15%
Acrobat PDF	27%	21%	23%	20%	21%	20%	21%	19%	14%	17%
Printed tabs	23%	14%	11%	11%	8%	9%	6%	4%	6%	4%
Online static reports	20%	15%	28%	17%	16%	18%	21%	15%	19%	17%
Interactive analysis	11%	10%	12%	13%	10%	9%	10%	11%	9%	15%
Microsoft Excel				22%	20%	28%	29%	24%	20%	24%
Digital dashboards				6%	6%	7%	6%	8%	5%	9%

Note: Data on Excel and dashboards were not collected until 2009.

Table 3. Proportion of deliverable methods applied to research project

There has been a largely upward movement, year-on-year, for PowerPoint, which was already the most dominant delivery method in 2006. Microsoft Word as a delivery method has fallen out of favour, and Acrobat PDF is also showing a long-term decline.

Other more technology-intense methods, such as online static reports, and interactive analysis, which in our annual reports on the survey, we have often predicted were likely to experience growth, have remained largely static. The digital dashboard, as a deliverable, was added in 2009. Although it is often popular with research buyers (Bates, 2004) and the approach appears to have matured to the extent that authors are even setting out best practices in research dashboard design (Pfister, 2015), the survey reveals that volumes remain low and any growth observed is still speculative.

Where decline has been observed during the past decade is in the provision of printed cross-tabular reports. It may be two or more decades since it would have been a deliverable on close to 100% of projects, and by 2006, it was only provided to the client for fewer than a quarter of projects. Since then, it slumped to just 4% in 2015, with it seems few clients requesting, or receiving the ‘full set’ of tables that was for many years a way that clients ensured their research projects were complete and could be archived.

Yet the bulk set of tables or cross-tab reports live on as an internal document. In a separate question, companies have been asked since 2004 how important it is for reporting tools of the future to allow for the bulk production of cross-tab reports. The majority consider it important or essential, though a modest downward trend in the requirement can be observed over the period (Fig. 2).

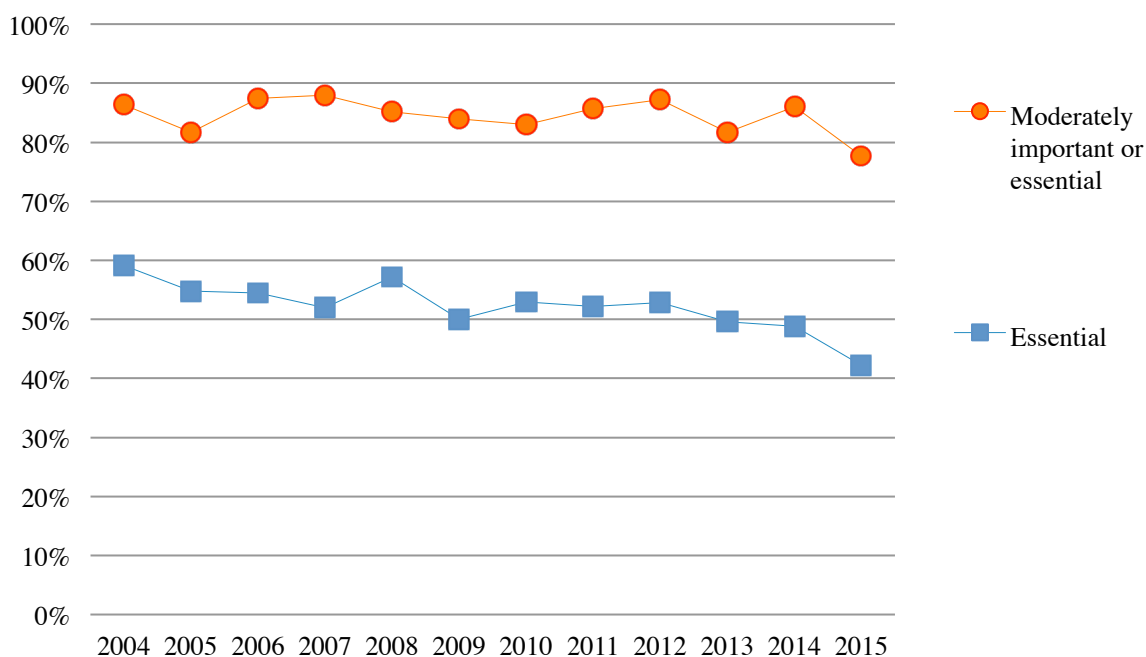


Figure 2. Importance of volume cross-tab production capabilities in ‘reporting tools for the future’

This seems to indicate that interactive or online analytical methods are still not widely practiced within research companies, and the ‘full set of tables’ is still a commonly used item internally, for checking data or even for primary analysis.

3. Perennial difficulties in technology adoption and diffusion

A common observation made in many of our annual reports has been the difficulty that research companies generally appear to have in adapting to technological change, or adopting technological innovations. There are numerous examples, of which we will focus on four, as exemplars: Mobile Research and Participation, Mixed Mode Research, Dashboards and Data Visualisation, and Open-ended Coding and Text Analysis.

Mobile research and participation

From the data we have already presented, it would appear the research industry is lagging behind consumers in mobile technology adoption. It may also be lagging behind other consumer-related industries where there has been an emphasis on providing content or access to services in mobile compatible form either through mobile friendly web pages, or increasingly through apps such as those provided by retailers, airlines, restaurants, banks and even football clubs, which have proliferated in recent years.

The 2014 study (Macer and Wilson 2015: 30-44), asked specifically about adoption rates and company plans and policies for mobile surveys. It found that, while 48% of companies actively discussed mobile participation at the design stage, 16% admitted they rarely did (this was higher among smaller companies). Also, while 31% said all their surveys were mobile-friendly, and a further 36% said 'many' of them were, 17% said they would only make a survey mobile-friendly if required to by the client or the project, and a further 11% would allow participants to take a survey on a mobile device, but took no steps to see if it would work on one.

Some of the difficulties stem from the technology. 91% of companies considered it was either essential or very important that Web survey software should support both conventional browser delivery (with a larger screen, keyboard and mouse or trackpad) and mobile (with its smaller screen and touch screen only input and navigation). However, 19% of companies reported it was either difficult or impossible to get the Web survey software they used to deliver mobile-friendly surveys.

Mixed mode research

Many authors have made the case for a mixed mode approach, since some of the limitations of web interviewing were noted (e.g. Cobanoglu, Ward and Moreo 2001, Gunn 2002). The mixed method approach as a means to overcome sample coverage and non-response error pre-dates the rise of Internet research, as Dillman (1978) first advocated in his total survey design method first for telephone and web, and subsequently adjusted to accommodate other combinations, most recently Internet, phone, mail, and mixed-mode surveys (Dillman, Smyth and Christian 2014).

Research companies also recognise the importance of being able to support mixed mode research. Nevertheless, volumes have remained unchanged over the decade, and this is most likely as a result of the increased cost and complexity noted in Vehovar and Manfreda (2006), and also in the 2013 report from this survey (Macer and Wilson 2014).

In a question asked between 2008 and 2013, approximately two-thirds of companies considered it important that any data collection software they acquired supported mixed-mode research. It was 63% in 2013. Yet, in the same year 2013 (the latest for which data are available), only 59% of companies had an integrated platform at their disposal, and mixed-mode research would have involved the other 41% in carrying out the research across two or more different systems, with some inevitable duplication of effort.

To add some urgency to this, another interpretation of the rise of the ‘unintended’ mobile participant is that every online survey is also unintentionally becoming a mixed mode survey. Yet intentional mixed mode research remains a minority activity across the industry.

While technological advances could be reducing the friction involved in doing mixed mode research, and thereby offer a method to combat low quality due to falling response rates, this does not appear to be happening.

Dashboards and data visualisation

Delivering survey results in Microsoft PowerPoint is fundamentally passive and presents information in an essentially linear way (Parsons 2004, Southgate 2006) rather than a way that emphasises connections. End users report that they need much more active and responsive ways to access information, so that frequent recourse to information becomes part of their everyday organisational culture (Kelly and Kugel, 2014). However, the sheer proliferation of tools for data visualisation, interactive analysis and data mining is a challenge for the industry (Schmidt 2016).

Market researchers are tending to fall back on what they see as a failsafe method of delivering results in PowerPoint (Brewster 2013). Indeed, we have seen each year in our survey (Macer and Wilson 2016: 89) that PowerPoint is consistently the most popular results delivery method (55% of projects in 2015) – and its use has even grown slightly over the years (rising from 48% in 2006). Digital dashboards, where highly tailored summaries of information are provided online, as an aid to decision-making, typically on continuous research projects, are still rarely used (9% in 2015) though their use has increased a little (it was 6% in 2009).

Dashboards, and more visual ways of storytelling around data, have the potential to give businesses far greater value from their data. This value is only realised if designers have the skill to create something that capitalises on the interactivity of the dashboard, rather than what amounts to a set of online PowerPoint slides (Sturt and Frost, Nadilo 2015). That these, and many other commentators can point to common mistakes in visual data design, and so many bloggers on the internet are producing checklists or lists of common mistakes to avoid, demonstrates that many data communicators are struggling to make the transition from linear, static PowerPoint to dynamic and interactive dashboards and data visualisations.

Only one in five of companies that we surveyed considered they were ‘easy’ to produce (Macer and Wilson 2015: 78). This is also reflected in the principal difficulties that companies reported they encountered: not enough money in the budget to deliver what the client wants, a need to adapt or customise the reporting software they used, and not having the right skills in-house (*ibid*, p. 79). The specific question to which companies were responding offered nine different perceived difficulties. All except one were chosen by at least 20% of the participants. Such a broad spread of responses adds more weight to the conclusion that practitioners are still finding it difficult to embrace the online and more visual communication decision-makers expect today.

However, companies also reported that they were often using tools that were not well-suited to producing dashboards or data visualisations – 97% were ‘usually or sometimes’ creating charts in Excel and PowerPoint, for example, against only 33% using dashboard software or 20% using specialist charting software. This situation had changed little since the same questions were posed in 2011 (*ibid*, p.83). It appears that companies are not equipping themselves with the right tools to produce these kinds of outputs. There is evidence, however, that companies have been willing to

invest in the skills, (ibid, pp. 84-86), with a notable increase in the involvement of graphic artists and visual designers, and less reliance on data processing or ‘charting’ specialists.

Open-ended coding and text analysis

As long ago as 1993 automated coding was considered to offer the potential to be significantly faster and more consistent than manual coding (Raud and Fallig 1993). Today, the high volumes of unstructured text associated with social media leave no alternative to deploying automated techniques such as sentiment analysis. According to Gunter, Koteyko and Atanasova (2013):

“Both agencies and clients, however, need to know what they are getting into when they adopt these techniques, and recognise that the quality of what comes out is only as good as the sophistication of what goes in.”

Quality is often cited by market researchers as a reason to resist adopting automated methods on survey data. Yet Berardi, Esuli and Sebastiani (2014) have demonstrated that with machine learning methods of coding, which are highly automated, quality can be improved to a level comparable with manual coding if a small amount of human inspection and correction is applied to those cases where the automated system is least confident about its coding decisions.

Text analytics and coding appears not to be attracting much interest in the research media or in research publications, as there have been very few articles published on it recently. An exception being the view from Hedler (2016) that text analytics have recently reached a point of maturity where they should not be ignored.

Business in general, beyond the market research industry, has not ignored these advances, and is making major and increasing use of text analytics. The total global text analytics market is predicted to reach \$6.5bn by 2020, growing at a compound annual growth rate of 25.2% (Singh 2015). However, in our 2013 study (Macer and Wilson 2014: 38-39), market research remains resistant to adopting automated text analytical methods, with 56% of market research companies citing manual coding as the method most frequently used, and 22% citing semi-automated. Automated coding is the most frequently used method for only 3% for of companies, and is used by only 5% of companies. This information was also collected in 2011, and there was very little change between 2011 and 2013.

This lack of adoption is difficult to understand, given that market research companies also state the challenges they face in handling unstructured text. 41% found it difficult to analyse, compared with 30% who found it easy (ibid, p. 41) When asked about their difficulties, 26% said it was because they did not have the right tools and 20% repeated the oft-voiced concern about poor quality results from automated coding (ibid, p. 44).

4. Current and emergent developments

Shadow IT

It is easy to assume that research companies, and their CTOs and IT managers, are in charge of their own destiny with respect to the technology decisions they make and the tools they choose to use. Yet it appears that research companies are particularly vulnerable to a global IT trend termed ‘Shadow IT’ or ‘Stealth IT’, where software or hardware are brought into the company, bypassing the central procurement function. In large commercial organisations in general, the impetus is often a combination of central IT being seen as a brake on innovation and focused on large, internal systems,

and the availability today of software products and cloud computing solutions that can easily be procured directly out of departmental budgets (Dyche 2012).

The 2014 survey added a twist to this narrative for the research company, possibly one of coercion or at least spirited persuasion on the part of suppliers on the one hand, and clients, on the other, to use the tools that they use. It showed that 62% of companies use data collection software provided by a supplier, 57% use their supplier's data analysis software, and for 47%, the panel management software they use is that of their suppliers (Macer and Wilson 2015: 57). Market research has long been an activity where a network of suppliers is frequently involved in the delivery of a survey, with fieldwork, coding or data processing often outsourced. It is therefore not surprising that this collaboration and co-operation should also extend to the software platforms being used.

This is particularly relevant to online research, where panels accounted for 62% of online research in the 2015 survey, and specifically access panel provided by third parties account for 42% of online research (Macer and Wilson, 2016: 32). The traditional model of the access panel, and even the origin of the term, was predicated on the concept that a research company enjoys access to the panel company's panel members, in return for a fee based on usage. Today, many panel providers offer an integrated service that includes programming and administering the survey, and delivering respondent level data to their research company clients. Panel companies may be motivated to do so as it allows them more control over the survey experience that their panel members are exposed to (for example, that a survey with a claimed average interview length of 15 minutes does not overrun this to an excessive extent). It also makes it easier for them to augment their panel database with demographic or other data, and ensure there is a healthy harvest of survey paradata, to provide performance statistics on individual panellists and the overall health and responsiveness of the panel as a whole.

However, research companies that are no longer in direct contact with their participants will not necessarily be aware of the bad habits they are developing in their survey design. It may go some way to explaining why 30% of the company representatives interviewed in 2015 did not know how many of their participants were taking their online surveys on mobile devices; this information may not be readily available to them.

'New MR' methods

Over the years, our survey has focused largely on the quantitative activities of our research company sample, as this is where technology has almost exclusively been applied. And over the years, the split between quantitative and qualitative research has been around 70% to 22%, with approximately 7% of other or non-research activities.

However, the technology of the online survey and panel has given rise to a web-based method that is primarily qualitative in approach: The Market Research Online Community, MROC, or simply Community, as it is often now called.

In the 2011 study, the method was included in a number of what were then termed "New MR" methods. These were all methods that had been attracting attention during the year as offering ways for market research to reinvent itself; almost all of them were based around technological innovations.

Table 5 shows the extent to which these novel methods were being tried or delivered by companies in 2011. It was only a minority of companies that offered any of these methods, and a very small number were providing them to 'many clients'. Communities were an exception, with 31% of companies claiming to have them, and 9% offering them widely.

N=230	Provide to any clients (net)	Provide to many clients	Provide to a few clients	Experimenting/evaluating	Unlikely to offer
MROCs	31%	9%	22%	39%	30%
Web scraping	20%	2%	18%	43%	37%
Digital ethnography	19%	0%	19%	27%	54%
Co-creation	16%	3%	13%	33%	51%
Crowd-shaped questionnaires	9%	1%	8%	33%	58%
Neuroscience	9%	1%	8%	20%	70%
Synthetic respondents	6%	1%	5%	17%	77%

Table 5. Adoption of New MR methods by companies in 2011

What was termed web-scraping as recently as 2011 is now commonly referred to as ‘social media analysis’ and has become an industry in its own right. The other more qualitative methods appear to remain niche offerings (our survey does not have data on this).

The role of technology providers

While some research companies are large enough to have their own software developers, most use technology provided by third parties, and the study has identified on different occasions the importance of technology providers as a source of innovation within the market research industry. In the 2015 study, in a question which asked research companies about the methods they adopted in order to innovate, 46% said they saw their technology providers a source of innovation, and 10% cited it as the principal way in which they achieved innovation (Macer & Wilson 2016: 72).

Furthermore, when asked if developing technology in-house or working in partnership with external technology provider, 41% of companies said they prefer to work with external provider against 25% who say both approaches have merit, and 29% seeing preferring to keep things in house (ibid, p. 77).

Communities – a case study in technology adoption

The annual survey had already asked specific questions about Communities in 2009, and these have been repeated at three-yearly intervals since. The observations here will be considered a case study in technology adoption within the market research industry, as this survey has happened to capture the emergence of this new method from its infancy.

A repeated question asking about each company’s current status with respect to Community provision gives an indication of the amount of time that is involved in the diffusion of a new method across the industry (table 6).

	2009	2012	2015
Operate at least one community	17%	16%	24%
Developing or plan to introduce	27%	18%	17%
No current plans	56%	66%	58%
Total (N)	188	250	206

Table 6. Adoption of Communities in 2009, 2012 and 2015

It is noticeable that the number of companies operating at least one community had barely changed between 2009 and 2012, as if adoption had stalled at that point. In the same period, the number of

companies planning to introduce the method had fallen by one third. It is only after another three years, in 2012, that further growth is seen – though the pool of would-be adopters has remained the same. The other characteristic worthy of note is the very large number of companies who have no plans to introduce this method and technology both at the beginning and the end of this cycle.

It also appears there may have been some over-reporting of the spread of Communities in the question asked in the 2012 study (table 4) among other ‘New MR’ methods. Though the question is worded differently – it asked about *providing* the service rather than *operating* one or more Communities – that question appears to inflate the number of adopters, in contrast to the question that has been repeated every three years.

As with all technology-based methods, one of the main challenges is with the technology. The software tools will be early in their deployment cycle, and may not be easy or productive to use. In 2009 there was virtually no specialist Community software on the market. Instead, we had reason to believe that many companies were running their communities almost as an offshoot of their panel activities, and were tending to use the same software as for their online panel work.

Companies were asked if they were using the same or different software for managing their Community as they were for running their online panels (table 7).

	2009	2012	2015
Same software	47%	27%	16%
A mixture	28%	18%	19%
Different software	25%	55%	65%
Total (N)	32	85	86

Table 7. Whether companies use the same software or different software for Communities as for managing panels

From this it can be observed that many companies were using the same platform as for panels, even though that software was not well suited to the task. Other questions in the survey highlighted that there were problems with the functions offered by the software. However, as the method matured over the intervening period, more specific Community software products have emerged, and companies have also had time to develop their own. In 2009, only 25% of companies were using different software: presumably specific Community software. Six years later, this has become the norm.

This is also borne out by another question, looking at the level of capability in the software for a range of activities often undertaken in Community-based research (table 8).

	Text analytics	Co-creation tools	Real-time groups	Mobile app	Forums	Diaries	Blogs	Polls
2015 (N)	32	48	52	64	77	63	42	67
Mean	2.16	2.33	2.38	2.39	2.48	2.49	2.57	2.60
2012 (N)	30	35	52	38	67	53	52	64
Mean	2.13	1.97	2.23	2.24	2.45	2.34	2.46	2.55

Table 8. Rating of software capabilities in Community software, 2012 and 2015

The data shown in Table 7 have been reduced to the respondent base for each item and a mean score calculated according to the scale 3 for *good*, 2 for *fair* and 1 for *poor*, for the three answer choices offered. In each case, an improvement is recorded. For some, where the score was already high, such as for forums, polls or diaries, the improvement is slight; but for others, where the score was lower such as co-creation tools, real-time groups and mobile apps, the jump has been larger. Only text analytics has seen meagre improvement and satisfaction remains lower, though the base is low.

The base size for each question also implies the popularity of that capability, as the question was only asked of those who had earlier said it was an important feature for them.

5. Discussion of the meta-trends

In this section, we will draw on the observations already made to reach some generalised interpretations on how the professional research industry responds to technological developments and innovations.

Slow diffusion and adoption of new technology-based methods

There appears to be a lag of many years between a new technology emerging and it achieving widespread diffusion and adoption across the industry (Rogers, 2003: 219-265). This has characterised the adoption of online research, which has been on-going throughout the twelve years of this study, and also in the adoption of CAPI as a replacement for paper-based interviewing, which has also taken many years to achieve. Both of these were already in motion before our study started in 2004. Nevertheless, our study has shown that the pace of technological change is typically slow, and appears to be slower than in consumer behaviour – for example in the equivalent widespread adoption of the internet, and mobile devices.

However, we have been able to track the cycle of adoption more closely with the growth of Communities or MROCs, which were considered a novel and experimental method in 2009. It appears the method remained in the hands of a minority of early adopters somewhere between three and six years, before any more growth in adoption was observable,

Inertia to replace

The converse of this same lag, or inertia, also appears to apply to the replacement of methods that are no longer as effective as they once were, or that are being superseded by more recent technologies that are proving to be more effective. This too appears to be characterised by a long initial period of almost imperceptible decline, followed by a period of accelerated decline. This is evidenced in the decline of paper and CATI as interviewing modes, even though their being superseded by online and by CAPI was widely predicted by industry commentators over a period of ten years or more. This same inertia is present in entirely unrelated trends in analytical and reporting methods, most notably with an almost imperceptible, but nevertheless sustained decline in demand for bulk cross-tabular reporting for external use and for internal use, compared to emergent information industries, such as Business Intelligence and Predictive Analytics. Similarly, Market Research appears to have been late to embrace dashboards, data visualisation and infographics as delivery methods.

We have also addressed the difficulties the industry appears to be facing in adapting to mobile interviewing, where the challenges are two-fold, and where the pace of change among consumers far exceeds the response of the industry. In six years, unintended mobile participation in surveys has risen from being virtually non-existent to a point where they affect a quarter of all online interviews, and very probably between one-in-ten and one-in-eight of all professionally conducted market research

interviews. Despite this, the evidence is that research companies are not only failing to take advantage of what mobile participation can offer, but are persisting in following methods that are wholly unsuited to this new environment.

Inappropriate tools

A pattern also emerges across the years of the survey that indicate that many research companies report they are open to new technologies, but tend to take a passive approach to technological development, and in exploiting what technology can offer. This goes beyond the methods that can be deployed to the specific tools that are engaged. It can be seen in the dominance of PowerPoint as a delivery method, which is oriented towards presentation rather than engagement and action.

This poor choice of tools can also be seen in the widespread use of Excel and PowerPoint as the means to create more advanced data visualisations that clients demand, whereas much better, specialist tools exist. The same is true of how the industry tackles much of the handling of unstructured text in its surveys, where automated processing is scarcely applied, and in analytical methods, where many companies appear still to rely on the production of cross-tabular reports (an analytical method that emerged 40 years ago).

We also reported the very gradual rate of change in the area of analysis over the years of this annual survey. Though traditional cross-tabular reports have almost vanished as a means of delivery to end-users of research, they remain in demand as an internal document. Even here, though, there has been a gradual diminution in demand over the years.

Other people's tools

Another influence, which will increasingly be felt by research providers, will be the expectation to use other technologies and tools not of their own choosing. This pressure comes from suppliers, notably access panel providers and other fieldwork suppliers but is also being felt on the delivery side, as clients demand that research outputs are compatible with their internal Business Intelligence (BI) and knowledge delivery infrastructure.

The unavoidable shift to visual data reporting

We reported that growth in the use of alternative analytical and report delivery methods has also been slow to date, and any gains have been largely overshadowed by an industry focused on PowerPoint as a delivery channel, with the outcome that alternative methods have struggled to make gains. Nevertheless, the direction of travel has been one of a very gradual increase in the use of alternative methods such as dashboards and portals, often populated with graphical reports.

The term 'dashboard' has become a convenient short-hand term for a range of online presentation styles that are both more visual and also more concentrated and selective in what is presented.

We believe that the challenges today of a proliferation of data sources typified by the rise of 'Big Data', coupled with a drive within organisations to make information available to a much wider audience than specialist data analysts means that the pressure to publish results electronically will intensify. This does not mean providing online access to PowerPoint files, but allowing them to be presented visually and interrogated interactively, in combination with other data. In this case, the challenges are both technical and developmental. New methods and practices need to develop within the research industry around good information design at the point of delivery.

Nevertheless, in other areas of research technology and practice, such as the rise of CAPI and also of Communities, an initial period of slow growth has often been followed by a period of rapid change

and growth. There is every reason to believe that this upswing is about to happen now in the analysis and results delivery area.

We believe how survey data are presented and reported will be transformed in the next five to ten years, and if both research and technology providers are not ready for this, they will not find their services are in demand in future, as others potentially outside the industry, will be providing this instead.

6. Conclusions and Recommendations

Taken together, these meta-trends present a number of challenges for both research companies and research technology providers, which we consider here with a number of recommendations.

Interoperability

Developers have responded to the challenge of bridging between different research software platforms by creating Application Programming Interfaces (APIs), usually to facilitate data transfer. There are *de facto* standards used in market research for metadata transfer, most notably Triple-S (Wright, 2002), but there is still no solution for the exchange of standardised metadata definitions for questionnaires. As further exchange of data and metadata at the upstream end of the process seems inevitable, then the equivalent of a Triple-S standard for questionnaire exchange becomes vital.

Recommendations

Research companies need to

- Recognise the diversity of systems they are working with, and seek ways to automate the transfer of data and metadata.

Technology providers need to:

- Expand the range and capabilities of APIs to allow for data and metadata to move effortlessly between different research platforms.
- Find ways to exchange metadata on questionnaire logic and question properties which is not currently covered by existing data exchange mechanisms.
- Find ways to make their tools more compatible with corporate BI systems.

Embracing data visualisation

Research companies have come late to data visualisation, and are only recently showing signs of developing the skills and infrastructure to provide the kind of reporting much of the rest of the commercial world now expects.

It still seems that many market researchers do not understand that dashboards are so much more than online PowerPoint presentations. Technology companies would benefit themselves and the industry by taking a lead in educating the marketplace that the visual communication style of dashboards is transformative.

Recommendations

Research companies need to:

- Develop their skills and offering in visual data delivery methods.
- Acquire more appropriate tools for data delivery.

- Downgrade the role that PowerPoint fulfils from one of data delivery to one of supporting a research consultant at the client debrief.

Technology providers need to:

- Put data visualisation at the heart of their reporting and data delivery development strategies.
- Find ways to make their outputs more BI-like and more BI-compatible.
- Evangelise about the new ways of data reporting to their clients, and provide knowledge and expertise in the practices of visual data communication to their research company clients.

Embracing automated text processing

Technology for automated coding of survey data has existed for many years and, now, since the advent of social media, many industries are analysing vast amounts of unstructured text. There are many opportunities for the market research industry to provide their clients with new or improved services involving insights from text, for example looking at comments on social media or communities. We know that most of the industry must be ignoring this opportunity because few companies are making significant use of automated text analysis.

Yet, market researchers have indicated their difficulties with the tools they are using to analyse unstructured text and often cite concerns with the quality of the results, so it is incumbent upon technology developers to work to improve the situation. Perhaps researchers would find it easier if this capability was integrated into the data collection or analysis software that they use every day, rather than having to seek out and be trained on yet another piece of software. With the rapid growth in text analytics outside research and the huge volume of text created online, it is likely to become a capability that is increasingly in demand.

Research companies need to collaborate closely with their technology suppliers to create these new services. Software developers need to also ensure that they address the quality gap, whether it is real or perceived, by incorporating some of the methods discussed to improve quality of automated coding or automated semantic analysis.

Recommendations

Research companies need to:

- Work more actively to deploy automated text processing to support the work of human coder.
- Recognise that quality will only improve to acceptable levels if active quality management strategies are adopted, such as regular inspection and correction being applied to the systems being used.

Technology providers need to:

- Build in enhanced text-analytical methods into data collection and analysis tools.
- Provide ways to measure and improve quality, such as by building in methods for enhanced, optimised human inspection and supervision.
- Again, fulfil a role sought by research companies, in evangelising and educating users in the application of automated text processing.

Mixed mode and mobile research

The rapid growth in mobile participation in online research means that, in effect, all online research today is mixed mode research.

Research companies need to monitor the situation more closely than they do at present, and take active steps not just to ensure that their survey instruments will actually display on the small screens of mobile devices, but that all the aspects of the design of the survey are conducive to that channel. The greatest challenges are not technical (virtually all online survey platforms today provide a broad range of support for mobile participation) but methodological and practical. Chief among these is survey length, which the industry seems unwilling to address.

The growing trend of research companies to delegate much of the task of their online data collection to panel providers has the unintended consequence of distancing them from data collection process and making many of them less aware of the problem and the serious implications of these for a lot of current survey design practice.

When possibly a quarter or more of would-be participants are unable to participate, coverage and non-response bias become a major problem. Online surveys need to be designed to be mobile friendly from the outset.

Recommendations

Research companies need to:

- Take a more proactive interest in the extent of mixed-mode, cross-device participation in their online surveys, particularly when working with other fieldwork providers.
- Develop a mobile-first approach to their online research projects.
- Develop policies and strategies to reduce the survey length delivered to participants, either in absolute terms, or through greater use of adaptive surveys (i.e. not everyone sees everything).

Technology providers need to:

- Continue to extend and improve the range of support they provide for participating in online surveys from a mobile device.
- Improve the reporting they provide to researchers on mobile participation – particularly where data are being collected by an intermediary such as a panel company.

Concluding remarks

This annual survey has consistently shown the market research industry taking a cautious and often passive approach to investment and innovation in technology – often being forced into action by the demands of clients. Recent developments occurring outside the world of research, such as machine-based text analytics, infographics and more visual and interactive reporting of data in business, along with the abandonment by consumers of desktop and laptop computers for mobile devices, have all been met by market research companies in a largely reactive way, and in several cases, it appears these disruptive trends are being ignored.

The work of innovation and appropriation of new technological developments into useful research practice appears to fall disproportionately on the shoulders of a few. This minority includes some smaller companies, most of the larger ones and some specialist technology developers. Innovation is not a spectator sport, with technology at the heart of much innovation in closely aligned fields such as online marketing, information science and the use of Big Data in business. Unless market researchers can find ways to drive rather than ride technology trends, they will see an increasing amount of their work lost to other providers of insight, or those who find the technology has made it sufficiently easy to answer research questions for themselves.

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About the Authors

Tim Macer is managing director at meaning ltd. He is a writer and commentator on the subject of technology for market, opinion and social research. The consulting company he founded, meaning, provides independent advice on all matters relating to the development, adoption or optimisation of technology for research applications. He is a long-standing committee member of the Association for Survey Computing, and is a specialist in research technology on the editorial advisory board of the International Journal of Market Research.

Sheila Wilson is research associate at meaning ltd. She is an international marketing specialist with particular experience in the market research software marketplace. In the 1990s, Sheila worked at market research technology company, Quantime, and then SPSS (after SPSS acquired Quantime).