

Joined-up Research on the E-highway

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PRESENTED AT THE ESOMAR CONGRESS, ROME, 24-26 SEPTEMBER 2001

Introduction

This paper discusses the research challenges faced by Egg the UK's leading Internet bank, and then describes the innovative approach it has taken both in its use of research methodologies and in its use of the technology of the Internet to increase efficiency and reduce costs.

With none of the traditional face-to-face contact in the 'new economy', feedback has become an essential channel of communication between the company and its customers for performance measurement, for developing new services and to be able to react quickly in the rapidly changing new economy of web-based financial services.

Egg places considerable emphasis on the high quality of service it provides and considers high-volume, continuous research on all aspects of its services to be fundamental to its long-term success in both attracting and retaining customers.

Egg has exploited the technology of the Internet to streamline its research operations. It is enjoying dramatic improvements in the time needed to answer business issue through research and equally dramatic cost economies. A research team of just three individuals is able to manage over 50 research projects and a quarter of a million interviews in a year.

Though some aspects of its research methods are revolutionary, all of its research undertakings fall within a recognisable framework of traditional and accepted market research methodology. Egg has adopted a policy of 'joined up research' by using continuous and overlapping sources of research data from multiple sources to create a complete picture rather than a series of isolated fragments of information. Frequent, short web-based quantitative surveys are complemented with standard qualitative and desk research activities to provide this integrated and holistic view.

Along the way, Egg has had a number of methodological, technological and ethical issues to consider, and this paper will draw on the practical experiences of the authors to demonstrate how they can be managed and resolved satisfactorily.

About Egg

Egg was founded in October 1998 as a telephone and online bank by Prudential plc, one of the UK's biggest and most established finance and insurance companies. It is hard to imagine a better example of the convergence of clicks and bricks than the grandiose red brick Victorian edifice of the Prudential's former headquarters in London's central business district, which was home to one and a half centuries of financial probity and which now also houses this energetic and highly successful e-business.

In Egg's short history, it has moved away from telephone and postal services to a situation where it deals almost exclusively with its 1.6 million customers over the internet.

Egg occupies a leading position within its market sector. It is the most popular of all the UK's online banks, according to internet analysts MMXI and it is the number one credit card issuer operating on the internet. Egg offers an extensive range of investment products, insurance, mortgages and saving accounts exclusively on the internet.

The bulk of communication with customers is by email, although some servicing and a helpline is available by telephone and some routine correspondence is carried out by surface mail.

Research activities within Egg

Market research and customer feedback is the responsibility of Egg's Consumer Intelligence team, which consists of three members of staff. All of Egg's research activities are organised and controlled by this small team.

The power of customer feedback

From the outset, Egg has sought to overcome the lack of traditional 'personal' contact with its customers by providing a highly personalised experience for its customers at its website and by seeking feedback from its customers at every imaginable opportunity. At the highest level, Egg recognises the value of customer feedback. For a business whose customers are all connected to the internet, the most natural medium for almost all Egg's quantitative research is the internet.

At any one point in time, there will be numerous different surveys either live, in preparation or being analysed. Over 60 different survey-based research projects were conducted in the last 12 months. No project is considered too large or too small to research, provided the budget and an appropriate method can be agreed.

Egg's largest continuous research activity is its customer satisfaction survey which achieves continuous feedback and corrective action to the business. 100% of new customers are asked about their satisfaction as well as around 100,000 existing customers every month. One benefit of using the internet is that it has allowed much smaller projects to be considered, on more specialised topics and with much smaller samples, because the internet has effectively lowered the cost of entry for quantitative research.

Research and the speed of the business

It is a well recorded fact that business in general is moving at a faster pace and that in e-businesses in particular, this rate of change and innovation is so rapid that it defies established business models (Poynter, 2000). There is an expectation that new products that, in the past, may have been a year or two in the making are now created, tested and launched in a matter of months. Procter & Gamble, one of the leaders in consumer packaged goods, now have an integrated research and product development programme that achieves this in 137 days: the 7 days is the meagre period in which all the market research is carried out, from start to finish (Wright & Lindsey, 2001).

Egg, too, has been successful in bringing new products to market at a similar pace, using efficient research processes to fast track from product concept to product launch in a few months. The rapid launch of Egg's WAP service is a case in point. (Skelsey and Pearson, 2001).

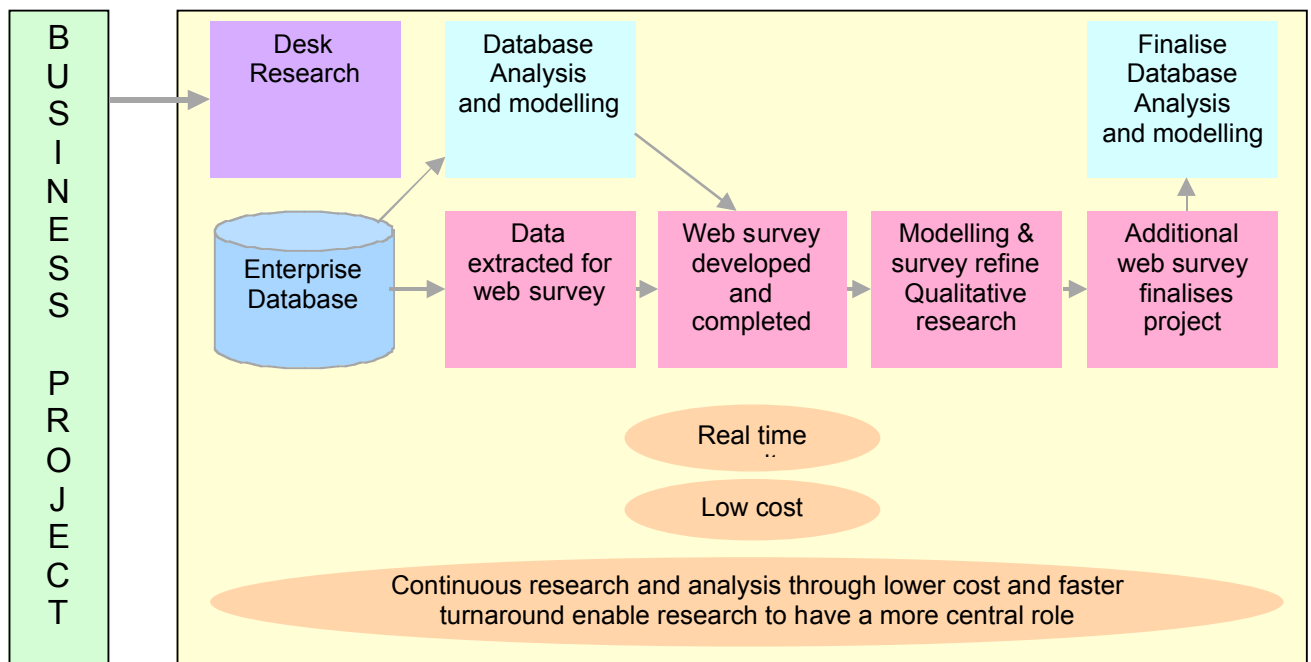
At Egg there is an expectation that research should be responsive to urgent demands to reach business decisions, providing answers the next day rather than in two weeks' time. Just as the internet has been the driver for the increased pace of change, it is also the internet that has made it possible to carry out surveys and consultation exercises sufficiently fast to have a summary report waiting in the manager's inbox the following morning.

While the Consumer Intelligence team does not claim to offer 24 hour turnaround on every job, it can be done when there is an urgent need. However, a 48-72 hour turnaround time on short projects is routinely achieved.

This is only possible if research processes are streamlined and standardised. Egg has invested heavily in providing the infrastructure to make this possible. This includes:

- A sample database of respondents already identified as willing to participate in research.
- Standard procedures for business managers and product champions to request research.
- Using standardised measures and questioning techniques where possible, e.g. for price elasticity testing or rating scales.
- Including known demographic information from the customer database in the sample.
- Using the same technology partner to host the surveys, to whom the technical work is subcontracted.
- Using a web interface to commission the setup of research projects from Egg's technology partner, SPSS MR.

Each of these points will be described in more detail within this paper.



Joined Up Customer Research and Analysis

The economics of online customer research

Egg did not start by putting its customer research online. Initially, the customer satisfaction surveys were carried out on paper as a mail-in self-completion survey. As the number of customers rose rapidly, there was a mountain of paper to deal with. A number of customer satisfaction surveys were successfully migrated to the internet.

In actual costs, the postal survey was ten times more expensive than the current web-based survey. The cost savings have been achieved through eliminating printing, postage and data entry costs as well as all the associated, labour intensive paper handling costs. As the volume of responses increased, so too did the costs of the postal survey.

On the internet, volume is an insignificant cost: costs are mainly associated with the web survey set-up work involved on the computer. On the web, it is the respondent, or customer, who does the data entry and it is important for survey designers to retain a feeling of gratitude for this situation. The actual cost to Egg for each respondent contacted is a mere €0.01 for continuous surveys.

Overall, Egg has increased its research capability considerably, while being able to *reduce* its research budget by over 40%.

Response rates were found to be approximately equivalent between the postal and the internet versions of the customer satisfaction survey: for new customers the response falls between 20% and 25%. We have observed a trend that existing customers tend to respond slightly less frequently — around 15%. Response is higher (45%) on the short, ad hoc surveys on the internet.

Qualitative research

Qualitative research remains an important part of the research mix within the company. Egg has not found online methods appropriate for qualitative research and this means that, compared to web-based quantitative research, it is expensive.

Using the internet has given qualitative research a new dynamic, because the focus groups are used alongside online quantitative research and are often connected to survey research at both ends. For example, for a new product proposition, a quantitative phase will be used to inform and refine the qualitative exercise. At the end of this, some new questions will inevitably emerge from the focus groups, and these can be followed up immediately by a short online survey to complete the picture, rather than leave the project with unanswered questions that can irritate clients and devalue the research process in their eyes.

This holistic approach to research means that the research team is able to squeeze more out of its customer's budget. It establishes a virtuous circle where clients ask for research more frequently to the point that it becomes a continuous process, central to the marketing activity or product development function. Research is able to inform and refine the organisation's thought processes all of the time, rather than being an "add on" brought in when everything else has failed.

A balanced portfolio of research methods

At Egg, online research is not viewed as a universal panacea: it is one part of a balanced research portfolio. It complements focus groups, telephone surveys and self-completion postal surveys.

Over time, it is likely that online research will encroach on some of the higher cost quantitative activities such as CATI or postal, or these methods may mutate towards web-based activities, e.g. web-enabled CATI allowing researchers to view results online, through a web portal, in the way Egg's researchers can view the results of their web-based surveys as they are happening. This will bring savings in time and possibly cost.

Comparing telephone with internet surveys

Telephone surveys are now only infrequently used at Egg. This is largely because the results of web surveys are virtually instant, while the quality of the data is comparable and the cost is a fraction of that required to do phone research.

	(a) CATI	(b) Internet low volume	(c) Internet high volume
Sample size (initial)	6 000	5 000	20 000
Sample size (completed interviews)	2 000	2 000	8 000
CATI or web set-up costs	€6 000	€6 000	€6 000
Fieldwork costs: sampling and interviewing	€20 000	€300	€450
Total cost	€26 000	€6 300	€6 450
Initial topline results available	12 hours	4 hours	4 hours
Final results available	4-5 days	1-2 days	1-2 days

- A typical CATI sample would be 2000 responses, as shown in column (a). For the purposes of this price comparison, a similar sample size is shown for the Internet in column (b).
- A typical Egg research survey will consist of 8,000 respondents. This is shown in column (c).
- Response rates are slightly higher on the internet. Here, 30% is assumed for CATI against 40% on the internet.
- The large variance in costs between CATI and web surveys comes from the cost of fieldwork.
- As most respondents complete the interview within a few hours of being contacted, the interviewing target is usually achieved within 24-48 hours.
- When a survey is repeated, the cost disparity is even greater, as the set-up costs are usually very small, but the fieldwork costs remain constant.

The economies of the internet mean the cost of additional internet interviews is negligible. Having such a large sample does not mean that the results are more accurate,

but it does mean that the web sample will be more robust when weighting, filtering and segmentation is applied during analysis.

Methodological advantages of online research

Egg's researchers have noticed a number of advantages to online research, apart from the obvious advantages of speed and cost.

For the customer, it seems that using the internet to complete a survey at their convenience is less intrusive than either an approach by telephone or having to deal with a printed questionnaire which must then be mailed back.

Surveys can be completed at the respondent's pace and the web interface simplifies the process over questionnaires on paper by simply presenting the next question on completion of the previous one.

The web seems to provide respondents with greater privacy and responses can be more revealing and, we believe, more honest.

From the researcher's perspective, internet surveys are highly versatile. Sophisticated routing logic can be programmed, based on previous responses in the current survey, a previous survey, or information or behaviour patterns extracted from the customer database.

Automatic routing logic on screen also simplifies completion of questionnaire for the respondent. This means complex techniques such as ranking, trade-off or price elasticity questions can be included in the knowledge that they will be completed online with 100% accuracy.

Tracking studies are very easy to do, and the low cost makes this traditionally expensive but valuable research method into one that is affordable.

Moving fast but keeping it clean

The pressure to move fast can tempt people to cut corners (Poynter, 2001). Through creating its streamlined processes, Egg has been able to ensure that both the quality of its research and ethical considerations are not compromised, even when the pressure is on to turn a job round in 24 hours.

Quality considerations

Egg's guiding principal has been to apply the same quality measures to the net as it does to other methods of data collection. In some ways, using the internet makes these issues more explicit.

Sampling

All new customers are invited to take part in research with Egg. This invitation is found on Egg's customer satisfaction surveys for new customers. On the internet, it is most important to know who your respondents are.

Once customer agreement has been received for participating in research, their details are added to a sampling database. Currently, the database contains over 25,000

customers. The database itself is largely demographically representative of Egg's customer base and samples drawn are demographically representative.

Response rates

Respondents drawn from the sample pool tend to respond very fast to web surveys and respond in large numbers. The overall response rate varies between 40% and 50%.

Ethical considerations – Transparency

Strictly research

The greatest ethical consideration for Egg is the extent to which it is able to separate its research activities from its sales and marketing initiatives. The trend towards relationship marketing can blur this distinction in the eyes of the customer.

Egg's answer is to provide total transparency of its intentions and objectives to the customer by:

- Seeking permission for participation in research – invitation on satisfaction survey.
- Explaining what will be asked and why it is being asked.
- Describing how the information will be used.
- Ensuring that questions have an obvious research intention.

It is a strategy which has proved useful in maintaining high response rates. Specific feedback from customers on the various research programmes has also been positive.

Egg's research team is scrupulous in its attention to the MRS and ESOMAR codes of conduct for research and this is widely known within the organisation, and of the UK's strict data protection legislation.

While information collected in surveys may go back into the enterprise-wide customer database, these responses are not available for anyone to select outside of the research team for other purposes, e.g. a direct marketing campaign.

Managing the tensions between research and sales and marketing

A concern for the market research community is the potential conflict that can arise between different divisions of the same organisation contacting respondents for research purposes and also performing direct marketing initiatives.

A hypothetical example follows.

The research team carries out a survey on insurance products to customers not purchasing their insurance from Egg. As a result, the marketing team instigates a campaign to recruit new customers. This campaign will be more successful if customers are contacted shortly before the renewal date on their existing insurance policy. The database does contain this information, but only because it has been asked in a series of surveys carried out by the research team. A conflict could arise if the marketing team applied pressure to release this information at an individual level.

At Egg, the policy is always to be completely transparent with the customer or respondent about the *purpose* of the contact. If the data were collected for a survey, then

this information would not, in any circumstances, be used for the purposes of direct marketing. Because this policy enjoys the support of senior management, Egg's research team has never come under any pressure to release information of this kind, and the example described above remains a hypothetical one.

The converse is also true: direct marketing contacts may be made to customers in which survey-like questions are asked. But the fact that the information will be used to identify products the customer may be interested in will also be made transparently clear so the customer can make an informed choice when supplying this information.

Managing the tensions between research and customer services

An important distinction is made between the continuous customer satisfaction survey (CSS) and the specific research surveys

The CSS is asked of all new customers, boosted with a sample of existing ones. If the CSS revealed very low scores for an individual, then the customer service team would be notified and may decide to follow this up with a direct contact. This is made clear in the survey.

Research surveys are only sent to customers that have 'opted in' to research. They are never followed up on an individual basis, even if matters of concern have been identified.

Again, due to the policy of transparency, there is no tension between the research and customer service teams within Egg. Egg's experiences demonstrate that if you say what you mean to do, people will not get annoyed, neither within nor outside the organisation.

Respondent satisfaction

One often overlooked ethical consideration is the use and abuse of respondent's time and effort when participating in research. As much of Egg's research is among its customers, it has a very real interest in ensuring that participation in one of its surveys will be an enjoyable experience for its respondents, especially since many of them are actually paying for the telephone call to complete the survey.

To achieve this, the research team applies these principles:

- Interview lengths are kept to a minimum.
- Only relevant questions are asked.
- Respondents are not asked to supply information already known, such as demographics and product holdings.
- Online questionnaire pages look attractive, but are uncluttered, easy to complete and fast to download.
- A progress bar is shown on screen to aid and encourage respondents.

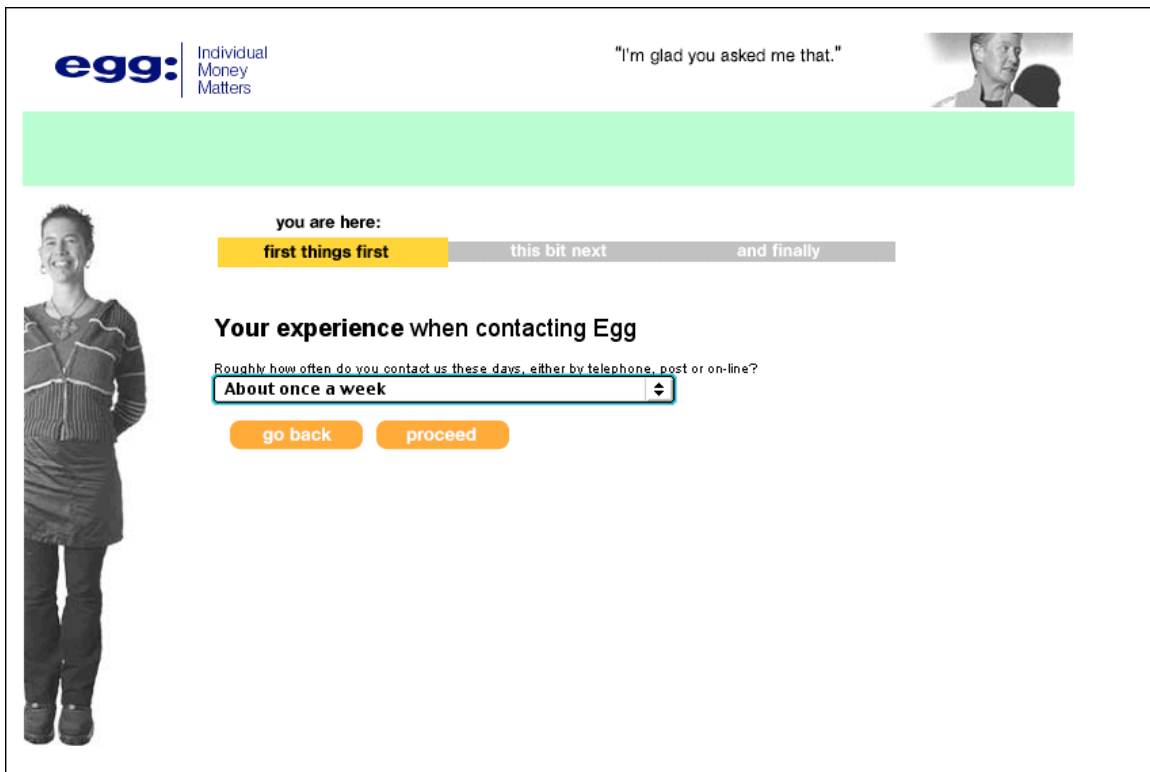
These aspects are 'designed in' from the start.

Questionnaire length can be a contentious issue for many research organisations. At Egg, there is a guiding principal that online surveys should not comprise more than twenty questions, with fifteen questions considered an ideal length.

When a survey looks as if it may have more questions, e.g. when several topics have been 'omnibused' together into a longer survey, routing and random selection techniques are applied to ensure each respondent only sees a subset of 15 to 20 questions.

Achieving short interviews that still give insight

To achieve the goal of short interviews, while not compromising the need to reach more than superficial findings, internal clients have been encouraged to ask the research team for the answers they want to get rather than providing a list of questions: an approach which clients find very helpful. It avoids the situation where a business or product manager approaches the research team with a long list of questions. These 'rough questionnaires' have to be pared down to a more appropriate length through a process of negotiation, which takes up valuable time. Then, when the research is concluded, the client can find the questions asked have not provided the answers he or she is seeking.



Example screen from an Egg survey showing progress bar and basic design aspects to ease respondent participation.

This approach of focusing on the information required not the questions to ask has had a significant impact on questionnaire length. Other benefits include a feeling of greater relevance to the respondent, which encourages participation, and more sharply focused research findings for the client.

When using other methodologies such as paper or CATI, the cost dynamics would make it impossible to take this approach, and a survey with sixty or more questions would not be considered exceptional. For paper, the high cost of producing and distributing

questionnaires, and on CATI, the high cost of recruiting eligible and willing respondents means that project costs could easily double or treble if this approach was taken.

With Egg's cost of contacting 100 respondents running at around €1, the only increased cost to consider is the technical set-up time, which is also modest.

Joined up research in action

Having outlined the methodological approaches and innovations Egg is making in its research activities, we will now illustrate how these operate in practice by reference to one hypothetical and two actual case studies.

Guaranteed delivery in 48 hours

In this example, a decision on a new direction needs to be taken within 48 hours. While the research team does not normally work quite at this pace, it has been and is achievable where there is an urgent business need.

The lifecycle of this urgent project would be as follows:

1. The decision to be taken is explained to the research team who construct the questions (the business manager does not present a list of questions to be asked)
2. The research team designs the questionnaire and then briefs its technology partner through the internet research portal.
3. Sample is drawn incorporating additional, relevant information held on the customer.
4. Invitations to participate are despatched by email. Each contains a personalised invitation and an embedded password and identifier, which is used to tie the completed interview back to the original customer in the database.
5. Customers start completing the survey.
6. Early results are available for inspection on the research portal within four hours.
7. The research team applies filters to examine the answers for different customer groups. This allows for corrective action to be taken in the case of any research design or sampling problems.
8. The survey is closed shortly before the results are to be presented. Results are extracted, analysed and emailed to the internal client in time for their decision, 48 hours after the original request.

Case Study 1: Building a new part of Egg's website

A new part of Egg's website was to be constructed. The business managers decided to involve a panel of respondents to provide feedback at various stages of the website's development, using this feedback to modify the design of the site, then to solicit more feedback in response to the latest set of changes. A longitudinal study was constructed comprising five waves of research interleaved with five discrete periods of website development.

A 90-strong panel was recruited, comprising 40 Egg employees, 25 customers and 25 other non-Egg consumers. The panel was balanced with regard to age, gender, income, level of internet sophistication and financial products held. This data was carried over into the survey so that it was available for analysis along with the data collected from participants. An incentive was provided, subject to participation in all five waves of research.

Invitations to each wave of the survey were emailed to panellists, including a password. Respondents were presented with a demonstration of the new website with the survey attached to the end. The responses were a mixture of closed and verbatim questions. This information was extracted and passed directly to the design team who then changed aspects of the new website and prepared a new demo version in readiness for the next wave of the survey. This process was repeated every seven days until the final wave was complete.

During the same five week period, four focus groups were held (in person, not online) to test the product proposition. This line of enquiry was best dealt with as a qualitative project..

In practice, the online panellists responded quickly to each request to participate, and their feedback was used to change the appearance and improve the usability of the website. The questions in the actual survey were largely unchanged from one wave to the next.

Not only was a large amount of research and design work achieved in a very short period of time, the cost of the quantitative component of the research cost a little under €8 000, with 50% of those costs being incurred at the first wave.

By coordinating these two different research activities, complementing online with face to face research, it meant the research team could move quickly to provide rich insight into the acceptability of this new proposition, which in just five weeks had been thoroughly tested in both quantitative and qualitative research contexts. Overlapping the evidence in this way increases confidence in the findings and simplifies the business decision-making process.

In summary, the project demonstrated:

- rapid deployment
- integration of survey data and customer data
- very low cost of operation
- high levels of cooperation from respondents
- powerful insight from overlapping sources of research
- research occupying a central position in the company's decision making processes.

Case study 2: Continuous Customer Satisfaction Survey

Egg's ongoing customer satisfaction survey is a census of all its new customers, boosted with a sample of existing customers. It is carried out as an online survey. Over one million customers are contacted each year, resulting in complete CSS data for approximately 250,000 customers.

By sampling from Egg's central customer database, the customer's unique ID number is able to track them through the research process. It is then used to merge the CSS data back into the customer database.

This means that Egg is able to correlate satisfaction scores with customer information over time, including key variables like age, gender, solicitations made, level of customer activity, subsequent cross-sales made and levels of attrition.

Egg has been able to develop a sophisticated understanding of the differences in satisfaction levels among its customers. At a simple level, for example, Egg's younger customers tend to be more satisfied than older ones, and female customers more than male. A strong correlation has been identified between satisfaction levels and subsequent attrition rates.

Using data mining techniques that are able to draw on both satisfaction measures derived from the CSS and actual behaviours derived from the customer database, plus demographics from either source, Egg has been able to develop a number of sophisticated predictive models. This includes identifying the key drivers to satisfaction and producing long term attrition model.

Data mining, involving both customer behaviour derived from actual transactions and CSS data is also used to segment the data and produce specific action plans to improve satisfaction among certain customer segments.

The cost for collecting the data from a quarter of a million customers to permit these activities, is surprisingly low, at around €12 000 per annum, due to the high level of automation.

In summary, the CSS demonstrates:

- efficient sampling from the customer database
- the value of integrating satisfaction data with behavioural data
- the benefits of low cost of operation in achieving the massive sample sizes needed to use data mining techniques effectively.

The role of technology

Current trends

Egg's use of technology is of wider interest to the research community, as it touches on several technological 'hot issues' of the time (Couper, 2001, Macer 2001, Macer 2000), and offers a pragmatic set of solutions that have been found to work well and delivered high quality research findings to decision makers within Egg.

The wider trends addressed by Egg and its technology partner SPSS MR include:

- The use of the internet as a reliable data collection medium
- The rise of the 'application service provider' or ASP that offers software for use over the internet, as opposed to installing it locally.
- Use of private internet *portals* to access or disseminate research data
- The technical challenges of merging enterprise data in databases with research data.

The service that SPSS MR is providing to Egg goes beyond the typical ASP model found more generally within the IT services sector and is perhaps one that is more appropriate to market research. SPSS MR is developing a number of software products designed to operate over the internet using the ASP model. Some of these are already in use by Egg, others will be used as they become available, offering further opportunities to automate processes. However, these tools have been presented to Egg as a custom internet portal. The use of portals in market research, to allow research data to be communicated easily from research buyers to research consumers is likely to become prevalent, even commonplace in a few years' time.

The internet

Being an enterprise not only on the internet, but essentially *of* the internet, Egg has made a virtue of the internet as a data collection medium. However, at this stage in the development of the web-based research in the e-economy, that is not remarkable in itself. What is unusual is the way that Egg is using the internet to interact with SPSS MR, its technology partner.

Traditionally, the market research department within an enterprise was faced with subcontracting most or all of the processes involved in data collection and analysis to a specialist supplier or agency. In practice, this often means a chain of suppliers: an agency to do the research design, a fieldwork agency to field the project, possibly another to enter the data and either the agency's own data processing team or a specialist bureau to process the results, plus one or more specialist software suppliers providing the software to collect and process the data.

Egg does make use of full service market research agencies for some of its research projects, particularly those involving CATI.

For its web-based work, the internet has allowed the roles of software provider and bureau to mutate. As noted earlier, Egg works in partnership with the specialist technology solutions provider SPSS MR (the market research division of the much larger SPSS statistical software producer), who developed the internet research portal for Egg's research activities already mentioned in this paper which is at the technological core of Egg's streamlined research processes.

The research portal provides five main functions:

- Project briefing
- Testing of questionnaires
- Central source of reference on all current and recent projects
- Previewing results
- Data extraction (for further analysis and for merging back into the database)

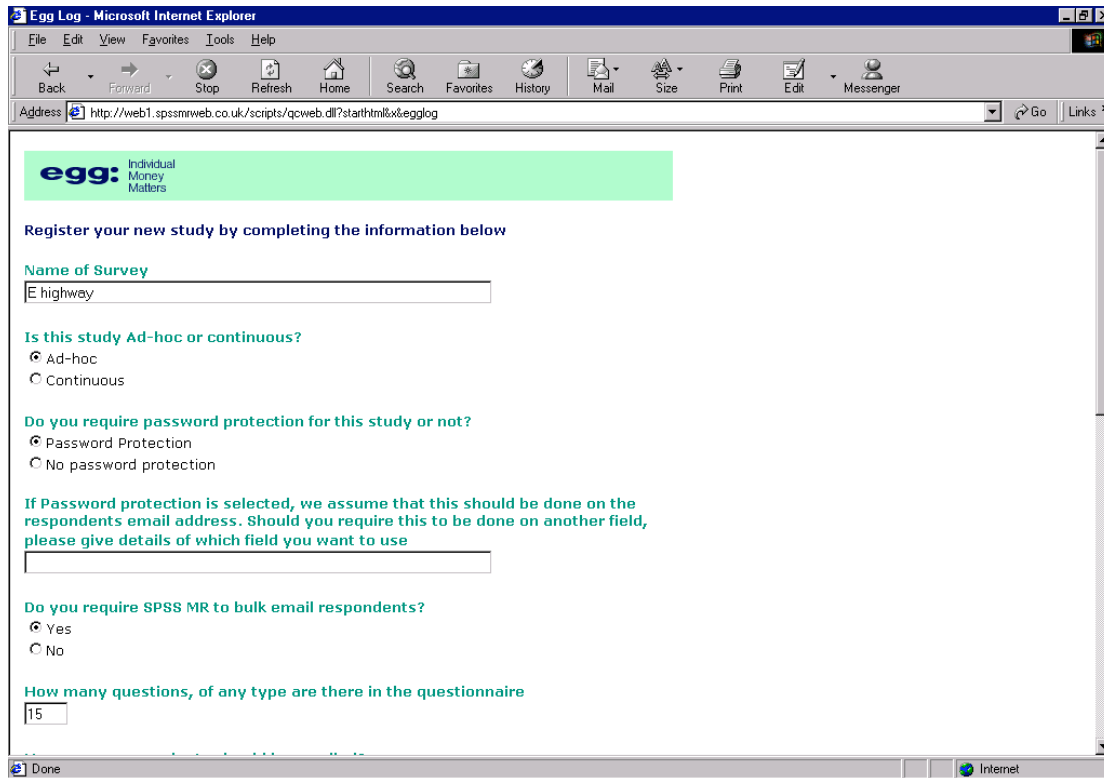
Project briefing

Many of the speed improvements have come from the research briefing tool provided on the research portal (illustrated here).

Through this, the research team is able to brief web survey specialists at SPSS MR on each project. Not only is each 'new study registration' a trigger for the technical specialists to start programming the survey, it also provides valuable documentation on

the project which can be referred to throughout the lifecycle of the project and long after it is been concluded..

Whereas in the past, it would have been very costly and time consuming to create such a bespoke system as this, SPSS MR was able to make use of many of its standard software components, reducing the amount of development required to more manageable (and affordable) proportions.



Speeding up the technical processes

To provide the levels of service and rapid response Egg required, SPSS MR also needed to concentrate on how the technical infrastructure and services could be made reliable and would deliver the time savings required.

Attention to the following has enabled Egg's technology partner to meet these challenges:

- SPSS MR was able to use many of its standard tools and components to carry out these operations, including its own widely used web interviewing package that requires very little technical set-up to prepare a new survey for self-completion interviewing on the web. Other SPSS MR tools and solutions take care of all routine survey administration tasks, from generating email messages to administering passwords.
- Question texts and precoded question answers are transferred, without retyping, from the document submitted by Egg to the interviewing program.
- Design is streamlined by separating 'appearance' from question flow. SPSS MR's software nearly separates the two functions. A lot of effort went into creating a 'template' during the early stages that always creates the right look and feel for

Egg's questionnaires. At the time each questionnaire is created, the only concerns of the author are the questions, answers and questionnaire flow or routing.

- All of Egg's surveys are hosted on a dedicated server. The server (a high specification PC with a permanent high speed connection to the internet) is located in a secure 'server farm' run by an internet services company and is administered jointly by SPSS MR and the internet service company but is actually owned by Egg. This complex relationship ensures that response rates for participants in the surveys can always be guaranteed to the highest level. A standard of 99.99% availability was set, which is achieved most of the time.
- Rapid troubleshooting is achieved by checking early responses (e.g. after the first four hours of results once a survey has gone live). The web portal is particularly useful if either party notices a problem, as telephone conversations can take place while both Egg's and SPSS MR's specialists are examining the live data in realtime, using the same tools and seeing the same view. Any corrective action can then be agreed and put into action immediately. SPSS MR also keeps a detailed log of all survey activities as an aid to diagnosis. In practice, this is rarely needed.
- Sample is cascaded from one survey to another. Another of SPSS MR's software components is routinely used to connect a willing respondent with an eligible survey if the respondent is ineligible (or fails quota for) the original survey. The respondent is unaware that this reassignment has taken place, but precious sample is not wasted.

Combining research data and enterprise data

The integration of Egg's CSS, research and customer transactional data, which provides great benefit to Egg, is also dependent upon technical innovation. In the past, a lot of research data has been held in proprietary formats, making it incompatible with the large relational databases used to hold survey data.

This situation is likely to change rapidly in the next year or two. The more enlightened research software producers are producing software that embraces open standards and facilitates much easier exchange of both data and metadata (the descriptions of the data).

No matter how the integration takes place, two factors are key to achieving integration between research and customer data:

- The ability to sample from the database and then identify each respondent by tagging them with a unique identifier
- The ability to merge research data back into the database

At present, Egg is able to achieve what it does through technology partners using intermediate technology that requires some manual intervention to extract then merge research data back into the main database.

For ethical and security reasons, even in the future, it is likely to be better that surveys are carried out 'offline' from the main database. However, the emergence of open standards and interfaces will make the integration of both sources of data much easier in the future.

Conclusions

For Egg, migrating almost all of its quantitative research to the internet while integrating this with other research methods and activities has delivered unquantifiably large benefits to the business in terms of speed and cost. It has made research activities more affordable and more relevant to the business. In turn, this encourages decision makers to request research more frequently, creating a virtuous circle in which research becomes central to the business decision-making process.

For customers, transparency in all Egg's interactions, whether they are for research, customer satisfaction monitoring, client servicing or marketing, ensures that customers are able to reach informed decisions on what information to provide in full knowledge of the purpose for which that information is being collected.

Egg's relationship with its technology partner, SPSS MR, has ensured that Egg is able to benefit from the latest in technical innovation without the need to invest heavily in the technical infrastructure or the skilled human resources to provide the high levels of service and reliability required.

One of the greatest issues in market research today is how to do more, in less time and at lower cost, while still remaining true to basic research principles of accuracy and integrity. When used appropriately, technology can provide the dividend needed to increase speed, efficiency and reduce cost, while maintaining the highest standards of data quality and research findings.

In Egg's case, the principle enablers have been:

- Use of the internet to collect data quickly and inexpensively
- Use of the internet to manage projects and view results, via a web portal
- Using robust hardware and software for assured reliability.
- Streamlined and automated process, based around the technology, to save time and cost
- Early testing of surveys results a few hours after going live, to anticipate problems
- Initiating a flow of data from the enterprise database into the research process and then back into the database.
- Using large sample sizes so that data mining techniques can be used.

Quality and ethical consideration remain central to the entire research process. It means decision makers can be certain that their research will be done quickly, done inexpensively, but above all, done well.

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