



Using research to determine product attributes and stratification for the design and marketing of user authentication.

[Study 1:
A survey of in home security
and authentication users]

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Study 1: **A survey of in home security and authentication users**

The purpose of this study was to determine the reasons for purchase of the user authentication product, ControlKey, and to investigate the success of this product in fulfilling purchaser's expectations.

The overriding concerns of individuals regarding personal or home computer use is security of private information, and the protection of children with regards to the content of the Internet. Sorting through the specific priorities amongst those concerns and providing the answers is the charge at its most basic level. Determining how to communicate that we have the best solution is the tactical end to our effort.

The current offering of ControlKey is a combination of hardware and software that is designed to provide parental control over the use of the home computer. Control to access to the computer, through hardware, a "key" or "token." is the primary use.

With the token, full access to all aspects of the computer is available. Without the token, access to files, applications, and Internet can be restricted.

The product is an extension of the primary technology developed for and used in the company's other product, SecuriKey.

The perspective and concern of parents in US households focuses around two fundamental issues of differing motivations and potential different user types. Both of those issues have to do with the inflow, and the outflow of information.

The inflow of information is likely the largest and most commonly recognized concern. Specifically it is focused on the exposure of children in the household to inappropriate content. This fundamental problem, as addressed from the parents perspective is why the product name is currently focused on 'control'.

Much as the parents of the eighties were very concerned about the content of television broadcasts coming into the home challenging the household accepted morals and values. In the case of television, technologies such as the V-chip and built in channel blocking have proven marginally effective at best. The case for that same approach applied to the Internet is likely not much different.

The second portion of the problem is the outflow of information. This occurs in two distinct ways. Related to the inflow problem is the use of the computer by children. Children by their very nature are much more trusting than adults. They are more than willing to give any information that they know, about the household, to a friendly or perceived friendly questioner. Privacy is not a concern to most children. They do not possess the discretion to determine appropriateness of the

information transaction. Further, there are strikingly differing values of the information, and the potential exchange. Children under 18 are shown, according to current research to be much more willing to divulge critical or private information in exchange for a free gift or access to desirable content. In recent studies, 77% of parents expressed concern that their children give out personal information about themselves and their family when visiting online chat rooms.

Cases have been documented where children have been asked through web sites they were visiting, parent's age, household income, health specifics, favorite sites, and others.

The other aspect of household information outflow concerns the access of financial or identification information. This falls under a larger concern for identity theft. Parents who do their bill paying, tax returns, online banking, or investments via the home computer are highly likely to have private and critical information on that computer. Those files are valuable information and are a dangerous liability if they fall into the wrong hands.

Clustering of head-of-households (Turow and Nir's, 2000)

Online Worriers (39% of Online Parents.) These parents are more concerned than those in the other two groups about the effects the Internet might have on their children and their families. Online worriers show above average agreement with the following statements that deal with issues of *values* and *social isolation*

- 72% agree that children's exposure to the Internet may interfere with family values and beliefs.
- More than three out of four (77%) agree families who spend a lot of time online talk to each other less than they otherwise would.
- 88% agree that going online might lead to the child's isolation.
- Two-thirds (66%) agree it could lead to anti-social behavior by the child.

But these concerns are balanced by a belief in the benefits of connecting to an online service. These people—60% of whom have had an Internet connection at home for a year or more—are also convinced that there is real value for their kids to having access from home:

- Nearly eight in ten (79%) agree that children without Internet access are disadvantaged.
- More than nine in ten (92%) agree access helps children with their homework; 58% agree *strongly* with this statement.
- 87% agree children can learn fascinating and useful things online.

So these parents are highly conflicted. They feel strongly enough about the Internet's inherent importance to their children to go and stay online. But they also express a higher-than-average level of concern the Internet may interfere with family values, and they worry that their children might expose themselves to the isolating and anti-social side of the Web.

Disenchanted (22% of Online Parents.) While online worriers are convinced of both the happy and scary elements of the Web, disenchanted parents are not at all sure of the Internet's value for their kids. Unlike the other two groups with Web experience, disenchanted parents reject common wisdom. Web access is a near-necessity for students to succeed in school today.

- 67% disagree that children who do not have access to the Internet are disadvantaged.

This makes these parents near polar opposites of the other two groups of parents in online homes. 81% of other online parents *agree* that kids without access are disadvantaged.

- Just over half of these parents (53%) do agree internet access helps kids with their homework, but the number is low compared to the other two online groups, where there is overwhelming (over 90%) agreement with the statement. Disenchanted parents are also much more likely than other online parents to reject the notion that kids learn useful and fascinating things on the Internet.

- In addition, unlike the others, these parents disagree the Internet helps with bringing children closer to community groups or that it can help children learn about diversity and tolerance.

- Disenchanted parents are even more despairing than the online worriers when it comes to seeing the World Wide Web as a safe haven for exploration. Seventy-seven percent disagree somewhat or strongly that the Internet is a safe place for kids, compared to 54% of the worriers and 30% of the gung ho's who gave that answer. In fact, more than twice as many disenchanted parents than gung ho's and worriers disagree strongly that the Web is safe.

This group's skepticism about benefits that the Web offers to their children is reflected in the parents' attitudes toward the costs involved as well. Even though their income level is comparable to that of the other online groups, disenchanted parents are much less likely to feel the cost of an online subscription is money well spent. A minority (44%) of these parents agree, it is expensive to subscribe to an Internet service, yet a majority (52%) of this group still says they have better things to do with their money. By contrast, a substantially smaller percentage of the online worriers and gung ho parents—34% and 8%, respectively—say they have better things to do with their money.

Clearly this group is not sold on the inherent value of the Internet experience for their children. The pattern of answers suggests that disenchanted parents keep the Web more because they think it has become a requirement for up-to-date families in the late twentieth century than because they think it will bring great benefit.

Gung Ho's (39% of Online Parents.) Online worriers and disenchanted parents together comprise 61% of those with Web connections at home. Gung ho parents, who are highly positive about the Web, comprise the other 39%. What places these people in a separate group is not their

strong belief in the Internet's positive effects; online worriers respond that way, too. Rather, gung ho parents stand out because in large numbers they reject nearly all statements about the Internet's alleged negative effects.

- 78% disagree that their children's exposure to the Internet might interfere with the values and belief they want to teach their kids. That contrasts with 18% of the worriers and 46% of the disenchanting parents who disagree.

- 68% disagree that going online takes away from family time—in direct opposition to the 77% of the online worriers who *agree* with this statement. 58% disagree that surfing the Web will isolate children, and 69% reject the idea that it could lead to anti-social behavior.

- Gung ho's are not wealthier than other online parents. Yet, in contrast to the disenchanting parents, 83% disagree that they have better things to do with their money; 52% disagree *strongly*, confirming their stand that the Internet offers value to children.

Gung Ho parents have had an online connection longer than other online parents. (51% have been connected from home for two years or more, compared to only a third of either of the other two groups.) They are more likely to go online every day at work, and somewhat more likely to rate themselves as advanced or expert users. These parents seem to have assimilated the Internet into their homes as a benign and beneficial new technology.

The problematic perspectives fall into two categories - those posed by the popular press and those by academic research.

The current information available concerning identity theft is primarily focused on case studies, general public concerns, and the often too technical recommendations.

Identity theft happens in three basic arenas. The first of those is that of a physical information leak. Bank statements that fall into the wrong hands, someone overhearing a private access number either by phone or in person, and the exposure of a PIN or access number through observation. There is no current technology that protects all of this information.

The second arena would be in the storage of information by third parties. This category includes vendors, stores we visit, banks, insurance companies, and health care providers. Though legislation regarding the liability of holding this information is on the rise, legislations does not on its own protect this information. Of more potential concern for the individual, is that the protection and storage of this information is realistically out of their control.

Lastly, is the information stored on the individual's home computer? As stated before the primary concern is for the safekeeping of online banking files, bill pay, documents, electronically filed tax returns, and any software for online investment management or tracking. Not so obvious is the storage of information by your computer's browser in forms and cookies. These are not obvious to

the typical home computer user and are implemented for ease of use, something consumers are typically in favor of.

Access to content appropriate to children through their formative growth years is certainly a subjective issue, however, most of us agree there is some content that no children should see. Parents are concerned with both pornographic or sexually explicit material, as well as that of violence and gore. Concern for this exposure was held by 76% of parents when asked. Further, many parents expressed a concern that they were not able to explore the web with their children as well as other parents do.

There are many methods available to minimize the risk of unwanted exposure of content to children. Likely the most effective is the sharing or supervision of the online exploration with the child, by the parent. Two factors inter into the complexity of this issue. First, nearly all computers are set up as single user workstations. Specifically, the display is smaller than the typical television, and the seating is limited to two or three individual, but most likely there is a single chair in front of the computer. An even worse scenario is the computer that is located out of the shared household space, in the bedroom or the den, often out of view. Mom or Dad cannot supervise in the den or bedroom while cooking dinner or working in the garage.

The second issue is that of time. The modern trend of baby boomers with multiple children is to encourage a very active lifestyle for their parents. Sports, after school activities such as scouts, clubs and other social groups add up. These activities require transportation and are usually involve only one child. When the number of children out reach the number of parents available... supervision is often not an option. Parents are very busy and co-piloting at the computer is not often an option.

Co-piloting offers the parent the opportunity to discuss, with their children, what sort of content is appropriate and what is not. If the child understand the rules as they change through time they are more likely to learn how to handle such content on their own. This is a highly successful method, but is very time intense.

Software filters are most commonly used for controlling this content. But, filters are typically not very successful. The downside of most filtering systems is that you are accepting a predetermined set of rules for content that may or may not be successful. Further, these rules may not be inline with parent's specific values. They will likely not change accurately in correlation with the child's growth and maturity unless the parent can manually alter them. Most problematic is the tendency for word filtering software to be too guarded, eliminating much wanted content based on misinterpreted word usage rules. Editable white lists are probably the most successful of these filtering or blocking systems.

Rating systems are in early development but as of yet there is no widely accepted standard. Further, implementation is rare. Judgment as to the success of ratings systems in other media distribution industries such as television, movies, and music are still inconclusive.

Method

Participants

A survey was mailed to 97 registered users of the ControlKey product in the United States, Canada and Europe.

Materials

The survey was printed on two sides of an 8.5 by 11 inch sheet. Accompanying it was a letter from the company asking for their help in completing the survey. In addition a pre-stamped return envelope was enclosed as well as a single dollar in the appropriate currency for the destination country.

Design and Procedure

The majority of the questions were directed towards purchase intent and product fulfillment. The respondent was asked to respond to the primary questions in a five step Likert scale format. Additionally some questions were asked in order to obtain demographic information. A copy of the letter and both sides of the questionnaire are included in (figure 2.)

Discussion

The first section of questions asks the product's users about their motivations for purchasing the product and how well the product performs those functions.

Question one asks the primary reason for purchasing the product. The users are to choose from the following options: to secure financial files, protect children from inappropriate web sites, lock up my computer, restrict Email and instant messaging, protect private household information, and other. Ten of the sixteen respondents indicated that they purchased the product to protect their children from online content. Four responded they wanted to lock up their computer and the final two noted "other" – those being the restriction of time their children spent on the computer and to lock up financial files. On a scale of 1-5 the mean score for satisfaction was .2125 with .6875 reporting the product as working either very well or fairly well. The majority of those (.70) reporting the product worked very well.

When asked the secondary reason for purchase nearly half, seven of the sixteen, listed no other reason. The remainder is split between Restricting Email and Instant Messaging and protecting private household information. Of those listing a secondary reason for purchase, two responded the product did not work at all.

Questions five through seven asked the level of concern for protecting the data, their children and private household information. The mean response for each of these questions scored between 1.875 and 2.25 indicating that they were generally either very concerned or somewhat concerned. These results seemed to reinforce the motivations for purchase expressed in the first set of questions.

The eighth question asked about the user's experience with installation of the product. Only two responded that the product was simple to install with a mean score of 2.875. This would indicate the product has some ease of use issues that need to be resolved for the average user.

Questions ten and eleven asked the respondents to express their interest in two additional components that were under consideration for the product. The first was that of a "kid safe" web site certification system. The second asked them to express their interest in using predetermined lists of age specific, kid appropriate web site lists. Response to those questions scored a mean of 2.875 and 3.06 respectively, indicating a moderate interest in either attribute.

Conclusions

Consistent with the third party research stated earlier, the results of our study confirmed the expressed rational or purpose for purchase was to protect or control the access of the computer by the children in the households. Also consistent was the stated interest in control of information both into and out of the household.

Two factors render the results of this survey inconclusive. First, as stated in previous research, respondents tend to report purchase motivations they deem acceptable by peers (Turow and Kavanaugh, 2003). Second, additional research seems to indicate (Zaltman, 2003) that purchase motivations and rational are often subconscious and cannot be accurately determined by straightforward questioning of customers.

This is a component of research done in part as a thesis project in graduate school and initiated during my role as Vice President of Marketing. It is highly topical to Griffin Technologies without which this project would not have been necessary or possible. My thanks to all of those individuals for their help and support.

Tables, figures and some of the conclusionary content have been omitted from the versions published on the web site. Some of that content is available by request.

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