

Consumer Adoption of Memory Cards:

Executive Summary



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Internet Home Alliance commissioned this study with the Aberdeen Group to better understand the role of portable storage products, most notably memory cards, in achieving a fully networked and connected Internet lifestyle.

Aberdeen selected the SD Memory Card form based on an assessment of its superior technological performance in terms of transfer rate and capacity, and its widespread industry support with more than 600 companies supporting the format. Additionally, Aberdeen's analysis shows that the SD Memory Card leads all other formats both in terms of number of products and number of product categories, with over 1,300 SD enabled products available worldwide. This has led the SD Memory Card to achieve more than 25% U.S. market share in the first half of 2003.

Specifically, the goals of this research were to explore the following issues:

- 1) how the market currently meets its digital data transfer needs, the pros and cons of these methods, and the identification of any unmet needs,
- 2) reactions to memory cards, potential uses for the cards, and comparisons to other options for data storage/portability,
- 3) identification of the product features/characteristics and their value to potential users
- 4) desirability of additional storage capacity in memory card purchases
- 5) likelihood to purchase memory cards and the impact of memory card purchases on the purchasing of peripherals which utilize them, and
- 6) target audience expectations of the purchase experience (e.g., where/how will they be sold and where will they be displayed in a retail store environment).

THE DIGITAL ELECTRONICS FUTURE FOR MEMORY CARDS IS BRIGHT

When shown a demonstration of the interchangeability of content between cameras, cam-corders, printers, PCs, PDAs, DVDs and other digital electronics products, the most frequent response was "wow!" Focus group participants were visibly excited about the prospect of using memory cards as a medium for content storage and transport.

Importantly, research participants in the panels easily made the connections needed to ensure a more widespread adoption of memory cards. Aberdeen believes the main connected dots are:

- Standardizing on one memory card format ensures compatibility across a wide variety of digital products. Note: The SD Memory Card currently has the broadest industry support (650+ Members and over 1,300 shipping products) from a wide array of manufacturers
- Many electronics products are appearing with memory card slots, and consumers are comfortable with moving a memory card(s) from product to product.
- Consumers will pay a modest premium for memory card access in new consumer electronics products. Most focus group members stated they would pay 10%-20% more for such capability—more than required to cover costs.
- Consumer's current electronic products do not have memory card slots, and consumers are unwilling—not surprisingly—to throw out as obsolete what they have just to get memory card capability. The transition will take time, which we put at the better part of a decade to complete.
- Consumers want to find memory cards in multiple

retail store locations, suggesting the cards could be both an impulse and deliberate purchase.

MEMORY CARD CAPACITY: MORE IS BETTER

Retail stores apparently are improving their advice to buyers about the amount of storage they may need to be fully satisfied with the performance of their purchase versus the starter card that is installed at the factory. A significant minority report they bought higher capacity cards so they could store more photos or songs.

Once the focus groups had studied a chart of memory capacities versus content capacity (e.g., how many photos can the card hold?), they strongly chose higher memory card capacities for hypothetical future purchases—mostly in the range of 256 MB to 1 GB where price was not a consideration. Given a choice of individual “personal” cards for a family versus an investment in a “big” capacity card, consumers choose one big card. However, as usual, price is a buying factor, and prices for memory cards above \$100-\$200 are an inhibitor.

PERCEIVED ADVANTAGES AND DISADVANTAGES OF MEMORY CARDS

The focus groups did not have much difficulty identifying and reaching consensus on the advantages and disadvantages of memory cards.

- The key advantages are:
 - small size**
 - capacity choice**
 - re-usability**
 - improving price points.**
- The perceived disadvantages are:
 - small size can be lost**
 - variety of incompatible formats**
 - price, particularly in larger capacities**

CONSUMER ATTITUDES TOWARDS DIGITAL TECHNOLOGY ARE POSITIVE

The lifestyle use of digital electronics, led by digital cameras and music, is becoming pervasive among all U.S. age groups and economic backgrounds. Consumers are less intimidated by electronics—and many use technology in life-changing ways. Today, consumers are capturing and moving digital content around to friends and family, and for personal enjoyment.

DIGITAL DATA MANIPULATION GOES MAINSTREAM

Digital manipulation of data, be it songs, movies, or photos, is clearly becoming mainstream. A majority of consumers are comfortable with using digital electronics products, and a minority report that in the past year they have significantly increased the time spent creating digital content (e.g., PhotoShop) as a hobby or as a means to author content (e.g., home digital movie making). Thus, data transfer from the capture device to the display/print/PC manipulate device becomes a recognized and routine way to deal with digital data.

DATA CONTENT PORTABILITY RISES IN IMPORTANCE

Almost all consumers are aware that digital data content is portable. MP3 players and digital cameras with memory cards were frequently cited as examples. The ability to move data from one device to another is considered a key advantage to digital electronics products. One reason is the ability to take the content outside the home, where it can be used at work or play (e.g., an MP3 player) or shared with friends and family (e.g., photos on a memory card).

Some consumers use cables today to move data to and from a camera or music player. These consumers would consider switching to moving a memory card between devices if their PCs and MP3 players had a memory card slot. The reason is the simplicity of removal and insertion versus cable hookups.

THE MEMORY CARD IS A RECOGNIZED DIGITAL-DATA CONTENT CARRIER

Primarily due to the ubiquity of digital cameras, the vast majority of consumers are now both aware of and/or knew they had a memory card. The memory card choice to date has been driven by the product the card is used in: consumers are not yet buying digital electronics products based on compatibility with existing memory cards that they already own. Once informed on the value of interchanging specific memory cards among electronics, the surveyed consumers indicated they would seek memory card compatibility as one of their buying criteria.

Curiously, the majority of participants were unable to identify the type of memory card they owned unaided.

PARTICIPANTS “WOWED” BY THE NETWORKING CAPABILITY OF THE SD MEMORY CARD

When the networking capability of the SD Memory

Card, between a wide range of device types, platforms, and manufacturers, was demonstrated participants went “wow” and said “that’s really cool”. It was clear that many customers had not been exposed to the ability of the SD Memory Card to become a network-

ing medium. Once this capability was demonstrated through the use of HP, Minolta, Palm, and Panasonic devices, consumers quickly grasped the powerful implications.

SUMMARY OF KEY FINDINGS

BREADTH OF USAGE

Respondents own and use a wide range of digital technology, with the vast majority owning: desktop computers, printers, and digital cameras. Other digital technology owned by some respondents includes: video camcorders, DVD players, PDAs, scanners, MP3 players, photo printers, and laptops.

MOVING DIGITAL CONTENT

- Transferring digital data is important to many respondents. Younger respondents participating in the individual direct interviews (IDIs) who regard it as a leisure time activity, also consider transferring digital data very important. Older respondents seem reluctant to state this is not a very important activity to them, but several report they have limited technology (for financial reasons) or that they use both digital and non-digital means of meeting their communication needs.
- Digital data is transferred by various means, depending on the type of data and the available resources:
 - digital photos are most frequently transferred to PCs via a cable or wire link, although a minority of respondents use memory cards,
 - video footage is most frequently transferred by connecting the camcorder to the VCR and transferring the footage to VHS tapes,
 - music is most typically transferred by downloading it onto a PC and then burning CDs.
- Only a few respondents across the focus groups and IDIs have in-home local area networks, which they occasionally use for transferring data. Wireless transfer of data is limited to PDAs.
- Many respondents find it quick and easy to transfer images, particularly photos, from one device to another. Transfers from camcorders are also considered

straightforward, while music is regarded as the most difficult type of digital transfer.

- Respondents who express dissatisfaction with how they transfer digital data typically focus on the following: the need for additional equipment purchases, lack of sufficient USB ports to use several peripherals simultaneously, and complex, poorly-written instructions that are hard to follow. Some respondents are dissatisfied with the capacity of the memory cards in their digital cameras and the difficulty of transferring pictures from their memory card while traveling.

ATTITUDES ON DIGITAL CONTENT MOVEMENT

- Research participants living in family households report that some household members are uninvolved in the transfer of digital data. Typically, one adult head-of-household, along with one or more teenaged/young adult children, engages in this activity. Whether it is the male or female head-of-household who becomes involved in data transfer varies from household to household. In contrast, young adults living with their peers, and young marrieds, typically indicate everyone in the household transfers data.
- Those living in households where some members are reluctant to become involved in digital data transfer feel the best way to induce participation is to simplify and shorten the process.
- Most respondents have few concerns about the storage of their digital data. Typical practices include storing photos on PC hard drives (and occasionally, CDs), storing video on VHS tapes, and storing music on CDs. No one participating in this research uses memory cards to permanently store digital data.

MEMORY CARD USAGE AND VALUE ATTITUDES

Teams of respondents in the various focus groups found that SD Memory Card has the following combination of benefits:

- Size
- Portability
- Universality (versatility)
- Capacity
- Ease-of-use
- Speed
- Usage of memory cards varies among the research participants, with Boston early adopters and younger respondents in all groups/IDIs most likely to be users. Digital camera owners are also likely to say they use memory cards, along with those using PDAs. Many respondents cannot articulate unaided what format of memory card they use.
- Memory card users feel the medium has several key advantages, including: small size/portability, varying capacities, and reusability. A few respondents also feel declining prices and compatibility with various technologies are advantages of memory cards.

EDUCATION IS A CRITICAL STEP IN CUSTOMER AWARENESS BUILDING

Reactions to the SD Memory Card demonstration are largely positive. The product has a high "cool factor" for some respondents, primarily because of the many products it works with. The card's "versatility," (e.g., ability to work with a wide range of technologies and manufacturer's products) is considered a key advantage by many respondents. Other benefits widely recognized by respondents include: small size/portability, the availability of various (including, large) capacities, and speed. Some respondents, particularly those in San Diego, feel Memory Cards could replace other storage devices, such as CDs and videotapes, saving users both time and space.

PERCEIVED DRAWBACKS

The key drawback of the SD Memory Card used in this study is that users need to own compatible equipment. Many research participants indicate they currently own no compatible equipment, and the need to acquire such equipment is viewed as a drawback for the memory card. Another key drawback is the memory card's size, which is perceived to be notably smaller than many currently used by respondents. In addition to the risk of loss, or having children and pets swallow the small unit, respondents are also concerned about the ease of labeling the device so they

can easily retrieve material stored there. Finally, some respondents have concerns that even if adapters are/become available, the card will not function as quickly as it does with state-of-the-art equipment, depriving them of one of its key benefits.

FUTURE BUYING BEHAVIOR IS MIXED BUT PREDICTABLE

- Some respondents identify specific ways they are likely to change their use of digital technology. Those mentioned most frequently include: taking more digital photos, creating family photo albums to store on the memory card, and downloading more music.
- Most respondents, however, do not feel that memory cards would change their usage of the digital technology they already own because it is not compatible with the memory card. Some respondents in all groups, as well as adults participating in IDIs, are skeptical about purchasing the memory card (and the equipment needed to maximize its usefulness) without assurance it will be in the market over the longer term.

BUYING CRITERIA

- Respondents have difficulty articulating what they would be willing to pay for the SD Memory Card. Past purchasers of any memory card sometimes use the prices they paid as benchmarks—a mistake as prices have dropped. Others, consider the cost of other storage media (such as DVDs, videotapes, or CDs). In addition, they expect product prices to decline over time.
- If purchasing a SD Memory Card, most respondents would opt for a larger capacity card (to meet their largest anticipated need) over several smaller ones.
- Many participants regard SD Memory Card's combination of features, (as noted above) as a tie breaker, opting for products with these features versus those of other memory cards. Moreover, once they had acquired one product with the SD Memory Card, they would be more likely to continue with the same format in subsequent digital technology product purchases.

PRICING AND RETAIL AVAILABILITY

- Respondents are divided in their opinions about whether they would pay a premium for products with SD Memory Card capability as shown to the focus groups. A substantial proportion would be willing to do so, generally in the 10–15% range. On the other hand, some respondents claim they would not pay a premium. Many of these respon-

dents indicate they would wait to see if the product became an established standard.

- Respondents expect SD Memory Cards would be widely distributed through retail and on-line sources. Consumer electronics stores such as Best Buy, computer stores, office superstores, warehouse clubs, and mass merchants are all expected to sell SD Memory Cards, along with any websites selling digital technology. In addition, non-traditional outlets, such as toy stores, grocery stores, audio/video stores, and pharmacies are all expected to eventually carry SD Memory Cards (much like the currently sell film).

ABERDEEN OBSERVATIONS AND CONCLUSIONS

Aberdeen observed a higher technology savvy than we anticipated, even among the groups considered technologically laggards—older people and blue-collar workers. Therefore, we anticipate an accelerating adop-

tion rate of digital consumer technology in general, and memory cards and card-slot-enabled products specifically. Moreover, the desire to move content around is strong.

Most consumers are easily educated about the capabilities of memory cards in a few minutes with simple demonstrations. Consumers are unwilling to replace their existing electronic equipment merely to gain memory card accessibility, but once they understood the capabilities they would likely purchase future devices with the technology. They prefer larger capacity in the memory cards they purchase for their families. However, memory card prices over \$100-\$200 are less attractive.

As a result of the factors exposed in this qualitative research study, we conclude that SD memory cards are likely to continue becoming a widespread means of storing and transporting digital content. This is particularly true given the combination of technology and widespread industry support that the SD Memory Card enjoys. ■

About Internet Home Alliance

Internet Home Alliance is a cross-industry network of leading companies advancing the home technology market. A non-profit organization, the Alliance offers members breakthrough research about the emerging home technology market and provides established and emerging companies with the collaboration and real-world testing opportunities they need to launch their home technology products and services more quickly, successfully and cost effectively. Member companies include such leading companies as Best Buy, Cisco Systems, General Motors, Hewlett-Packard, IBM, Invensys, Microsoft, Panasonic, SBC, Sears, Sun and Whirlpool.

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About Aberdeen Group

Aberdeen Group is a computer and communications research and consulting organization closely monitoring enterprise-user needs, technological changes and market developments. Based on a comprehensive analytical framework, Aberdeen provides fresh insights into the future of computing and networking and the implications for users and the industry. Aberdeen Group performs projects for a select group of domestic and international clients requiring strategic and tactical advice and hard answers on how to manage computer and communications technology. This document is the result of research performed by Aberdeen Group, which was underwritten by the Internet Home Alliance. Aberdeen Group believes its findings are objective and represent the best analysis available at the time of publication.
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