Alliance Members

(best buy) Cisco Systems GM hp IBM Invensys

Microsoft SBC Sun Sears Whirlpool

Panasonic

ADT CompUSA Gate Space Herman Miller Miele

Icebox

motive SimpleDay Sunbeam SupportSoft Symbol

ARVIDA a St. Joe company Bell Catellus Cushcraft Home Director KB Home

elario Lantronix LG Lutron Motorola

Peapod Seagate Samsung Visteon

(as of September 2003)
Paradigm Shift

Technology has a predictable impact on the environment around it.
Agenda

Home Networking

Consumer Needs

• Career
• Entertainment
• Family
  • OnStar at Home Pilot
  • Mealtime Pilot
Home Network Ownership

Current Ownership

- Total: 15%
- Primary Market: 22%
- Mass Market: 7%

(Total n=661; Primary Market n=353; Mass Market n=308; Q40)
Networked Devices

Devices Part of Home Network

- Computer: 99%
- Router: 79%
- Printer: 77%
- Hub: 47%
- Security System: 8%
- Stereo: 7%
- TV: 3%
- Home Automation System: 1%
- Other: 4%

(Total n=88; Q42)
Networking Future

Future Uses

- Home Automation: 31%
- Internet-linked Home Security: 22%
- Record Broadcast TV on PC: 16%
- Access PC Applications via In-home Portable Device: 12%
- Internet Streaming Audio via Stereo: 11%
- Viewing PC Video on a TV: 11%
- Listening to PC Music Files on Stereo: 10%

(Total n=88; Q44)
Network Drivers

Main Reason for Adoption among Likely Adopters

- Improving Work Productivity at Home: 47%
- Expanding Entertainment Options: 30%
- Streamlining Routine Household Tasks: 23%

(Total n=122; Q52)
Network Installation

Likely Installation Process

- Do It Myself: 47%
- With Friend's Help: 32%
- Prof Installer - Nat'l Brand Retailer: 6%
- Prof Installer - Svc Provider: 5%
- With Corporate IT Staff Help: 3%
- Prof Installer - Local Brand Retailer: 2%
- Other: 5%

(Total n=122; Q49)
### Network Expected Cost

#### Expected Acceptable Costs

<table>
<thead>
<tr>
<th>Segment</th>
<th>Network Ownership</th>
<th>Owner</th>
<th>Non-Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total 16%</td>
<td>17%</td>
<td>20%</td>
</tr>
<tr>
<td>$0 - $100</td>
<td></td>
<td></td>
<td>15%</td>
</tr>
<tr>
<td>$101 - $200</td>
<td>3%</td>
<td>2%</td>
<td>-</td>
</tr>
<tr>
<td>$201 - $300</td>
<td>5%</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>$301 - $400</td>
<td>2%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>$401 - $500</td>
<td>13%</td>
<td>14%</td>
<td>22%</td>
</tr>
<tr>
<td>$501 - $750</td>
<td>2%</td>
<td>2%</td>
<td>-</td>
</tr>
<tr>
<td>$751 - $1,000</td>
<td>17%</td>
<td>14%</td>
<td>8%</td>
</tr>
<tr>
<td>$1,001 - $1,250</td>
<td>1%</td>
<td>1%</td>
<td>4%</td>
</tr>
<tr>
<td>$1,251 - $1,500</td>
<td>7%</td>
<td>8%</td>
<td>-</td>
</tr>
<tr>
<td>$1,501 - $2,000</td>
<td>6%</td>
<td>7%</td>
<td>12%</td>
</tr>
<tr>
<td>$2,001 - $3,000</td>
<td>8%</td>
<td>8%</td>
<td>16%</td>
</tr>
<tr>
<td>$3,000+</td>
<td>21%</td>
<td>19%</td>
<td>10%</td>
</tr>
<tr>
<td><strong>MEAN</strong></td>
<td><strong>2109.0</strong></td>
<td><strong>2116.0</strong></td>
<td><strong>1442.0</strong></td>
</tr>
</tbody>
</table>
Network Hub Preferences

Integrated Networks

Appeal of Hub Devices by Segments

- Total:
  - Home Computer: 69%
  - Interactive Entertainment System: 34%
  - Set-top Box: 26%
- Primary Market:
  - Home Computer: 75%
  - Interactive Entertainment System: 37%
  - Set-top Box: 32%
- Mass Market:
  - Home Computer: 47%
  - Interactive Entertainment System: 24%
  - Set-top Box: 6%

(Total n=97; Primary Market n=95; Mass Market n=17; Q75)
Consumer Needs

Career Ecosystem
Help me with my career!

- Productivity
- Work Skills
- Communications / Scheduling
- Commuting

Entertainment Ecosystem
Entertain me!

- Audio
- Video
- Audio / Video
- Gaming

Family Ecosystem
Help me take care of my family!

- Health & Fitness
- Household Chores
- Home Systems
- Communications / Scheduling
Alliance Projects

Career Ecosystem
*Help me with my career!*

- Mobile Worker Needs Assessment
- Ultimate 3rd Place
- Home Network in a Box

Entertainment Ecosystem
*Entertain me!*

- Personal Media Storage
- Video Point of Control
- Network Device Retail Test

Family Ecosystem
*Help me take care of my family!*

- OnStar at Home Pilot
- Mealtime Pilot
- Health & Fitness Needs Assessment
- Family Calendaring
- New Home Digital Living Study

InternetHomeAlliance
Work Productivity Preferences

• Potential work productivity market opportunities include:

  • *Communications*. The top-two general work-related capabilities in which consumers have an interest are the ability to communicate with family and friends, and remote access to business email. What’s more, about 62% of those likely to set up an integrated network have a strong interest in a unified messaging system. These findings indicate that some workers, juggling various devices and related applications, are looking for technology that promises to provide greater freedom and control over their communications.

  • *Scheduling*. Consistent with previous research, on-the-go consumers continue to express a need for a central calendar that integrates family and work schedules.
Career Opportunities

Work Productivity Preferences

• Potential work productivity market opportunities include:

  • *Remote access to electronic files.* About one-in-four consumers (26%) indicated a strong interest in the ability to remotely access electronic files on its company’s network. This need is especially acute among so-called day extenders—workers who regularly work from home either before or after normal business hours.

  • *Career education.* There is a strong demand for continuing education among about one-in-five primary market consumers (22%), indicating an opportunity for targeted and relatively inexpensive distance learning.
### Out-of-Office Productivity & Support

#### Type of Remote IT Issues

<table>
<thead>
<tr>
<th>Problems Encountered</th>
<th>Total</th>
<th>Day Extenders</th>
<th>Nomads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Couldn't Send/Receive eMail</td>
<td>45%</td>
<td>50%</td>
<td>41%</td>
</tr>
<tr>
<td>Couldn't Log Onto Internet</td>
<td>42%</td>
<td>43%</td>
<td>38%</td>
</tr>
<tr>
<td>Slow Internet Connection</td>
<td>46%</td>
<td>52%</td>
<td>42%</td>
</tr>
<tr>
<td>Couldn't Log Onto Company Network Due to Some Other Reason</td>
<td>33%</td>
<td>48%</td>
<td>30%</td>
</tr>
<tr>
<td>Couldn't Log Onto Company Network Due to Password Issue</td>
<td>15%</td>
<td>18%</td>
<td>15%</td>
</tr>
<tr>
<td>Couldn't Log Onto Company Network Due to VPN Issue</td>
<td>15%</td>
<td>30%</td>
<td>11%</td>
</tr>
<tr>
<td>Needed Help Troubleshooting Home Network/ Networked Resources</td>
<td>17%</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>Needed Help Installing/Configuring a Home Networking Device</td>
<td>16%</td>
<td>20%</td>
<td>16%</td>
</tr>
</tbody>
</table>

(Total n=438; Day Extenders n=102; Nomads n=336; Q178, Q179)
Entertainment Preferences

- Potential home entertainment market opportunities include:
  - *Distributed music.* As indicated by previous Alliance research, current and likely home network owners are most interested in the ability to listen to Internet radio, digital audio files and/or pre-recorded music throughout the house.
  - *Distributed video.* A substantial number of current and likely home network owners have an interest in TiVo-like functionality, the ability to watch DVDs inserted in a computer on a TV and the capacity to distribute video in various forms throughout the house. The aggregate functionality suggests a media server, perhaps in the form of an advanced set-top box.
Home Media Server Appeal

Not at all appealing (0-2) | Neutral (3-7) | Very appealing (8-10)
---|---|---
Primary market | 4% | 46% | 52%
Total market (weighted) | 14% | 44% | 42%
Interest in Networking Entertainment Content Among Multiple Consumer Electronic Devices

(Among U.S. Internet Households)

© Parks Associates 2002

Source: Broadband Access @ Home III (Q3 2002)

<table>
<thead>
<tr>
<th>Service</th>
<th>Broadband (n=6,078)</th>
<th>Narrowband (n=4,762)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video content from PC to TV</td>
<td>61%</td>
<td>54%</td>
</tr>
<tr>
<td>Music content from PC to stereo</td>
<td>57%</td>
<td>50%</td>
</tr>
<tr>
<td>Video content from DVD to TV</td>
<td>59%</td>
<td>50%</td>
</tr>
<tr>
<td>Music content from CD or MP3 player</td>
<td>54%</td>
<td>46%</td>
</tr>
</tbody>
</table>
Home Automation Preferences

- Potential home automation market opportunities include:

  - *Energy management.* More than any other aspect of home automation, energy management has the potential to appeal to primary and mass market consumers alike.

  - *Lighting.* Lighting controls rated highly along a number of dimensions in this study. Favored controls include controlling outdoor lights from any Web-enabled device, having lights turn on automatically when you walk into a room, and controlling indoor lights from any Web-enabled device.

  - *Security extensions.* Although Web cameras fared poorly compared to other home automation accessories, consumers indicated a strong interest in other, less publicized extensions of existing home security systems, chiefly, receiving email and/or SMS alerts when a security alarm is tripped.
Health Opportunities

- Treat Muscle/Joint Pain Effectively: 43%
- Purify Air in Home: 36%
- Monitor/Track Weight Over Time: 32%
- Monitor BP At Any Time: 32%
- Monitor Home Air Quality: 30%
- Monitor Cholesterol At Any Time: 30%
- Measure/Track Calories Burned Daily Basis: 29%
- Track Food - Money Spent and Caloric Intake: 28%
- Access Recipes to Manage Weight At Any Time: 28%

(Total n=643; Q69; Top 3 box scores)
OnStar at Home Pilot

Participant Satisfaction with Features

- Overall system
- Control/check entry door
- Check garage door
- Control/check Tstat
- Control/check security
- Web camera
- Control/check house lights
- Smart door bell

- Not at all satisfied (0-2)
- Neutral (3-7)
- Very satisfied (8-10)
Consumers not very satisfied with meal preparation

- Grocery shop efficiently: 55%
- Prepare nutritious, home-cooked meals: 41%

Meal Preparation
## Optimal Product Configuration

<table>
<thead>
<tr>
<th>Feature</th>
<th>Optimal product configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major appliance</td>
<td>Oven, microwave, and refrigerator</td>
</tr>
<tr>
<td>Minor appliance</td>
<td>Bread maker, coffee maker, and vegetable steamer</td>
</tr>
<tr>
<td>Access mode</td>
<td>Internet</td>
</tr>
<tr>
<td>Remote monitoring</td>
<td>Yes</td>
</tr>
<tr>
<td>Web tablet</td>
<td>Download recipes, grocery ordering and delivery, digital photo frame</td>
</tr>
<tr>
<td>Brand</td>
<td>Kenmore</td>
</tr>
<tr>
<td>Broadband</td>
<td>$10 month with limited access</td>
</tr>
<tr>
<td>Appliances</td>
<td>$1,399</td>
</tr>
<tr>
<td>Monthly service</td>
<td>$40</td>
</tr>
</tbody>
</table>
Mealtime Adoption

Adoption Timeframe

- Best case scenario - Primary market
- Best case scenario - Total market

Q71/75 (n=126/85)
Mealtime Dilemma

Mom does not have good options for meal preparation & she needs help to answer the famous question: “Hey Mom, what’s for dinner?”

The hardest part of Mom’s day starts at 5p.m.

The best alternatives are fast food or prepared food, but Mom does not feel good about those options.

Isn’t there a better way?
Mealtime Pilot

Pilot Team: Whirlpool, IBM, Sears, Hewlett Packard, IceBox and Peapod

Description: The purpose of this pilot is to determine whether available products help “the busy mom” improve her meal preparation process.

- **Module One Summary** - network-enabled appliances, kitchen-specific Internet display devices, value-add applications
- **Module Two Summary** - introduce online grocery shopping and delivery and integration with Module One applications (shopping list) and devices (displays)
Paradigm Shift

OSGi Opportunity

- Networked Lifestyle
- Integrated
- Distributed
- Point-to-Point
- Enabled
- Networked Home
- Broadband Home
- Personal Computer

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Questions

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