Chapter 8
Product Evaluation Strategies and Support Standards

A GUIDE TO
COMPUTER USER SUPPORT
FOR HELP DESK AND SUPPORT SPECIALISTS
SIXTH EDITION BY FRED BEISSE

Chapter Objectives

- How product and support standards emerged
- Common tools and methods for evaluating and selecting technology products
- Information resources and decision-making tools for evaluating and selecting technology products
- Typical technology product support standards
- How organizations develop and implement product standards

User Support Role in Product Standards

- Support workers often have expertise to evaluate competing products that other workers may not have
  - Eliminates duplication of effort
  - Support workers can act as a liaison between users and IT staff to represent the viewpoints of each group

How Product Standards Emerged

- **Product standards**: lists of hardware, peripheral, operating system, network, and application software products selected to meet the needs of end users
- During 1980s:
  - Incompatibilities among computer products were common
  - Vendors cited incompatible platforms as a marketing advantage

Problems Caused by Computer Product Incompatibility

- Limited opportunities to transfer and share data among users
- Large inventories of parts required to repair incompatible PCs
- Increased challenges to train and equip hardware service technicians to repair different platforms
- User skills difficult to transfer from one system to another
- Increased costs to support incompatible systems
  - Support staff couldn’t be experts on all systems
  - Training had to be targeted to specific platforms

Early Development of Product Standards

- To reduce acquisition and support costs during the 1980s, companies began to:
  - Standardize on a few hardware platforms selected to meet users' needs
  - Adopt standard operating systems (and, in the 1990s, standard network operating systems)
  - Limit the choice of application software to a few standard application packages in each software category

Methods for Evaluating and Selecting Computer Products

- **Product evaluation**: the process of researching and analyzing computer product features, capabilities, and suitability to solve users' specific needs
- Product evaluation process:
  1. Collect product information
  2. Test, compare, and evaluate advantages and disadvantages of competing products
  3. Make decisions or recommendations

Issues in Product Evaluation

1. Performs as advertised?
2. Better than existing product?
3. Compatible with existing hardware, network, and operating system configurations?
4. Meets users' needs?
5. Increases user productivity?
6. Cost-effective (reduces TCO)?
7. Likely to become an industry standard?
8. Preferable to upgrade now or later?
9. Stable operation?

Is the Traditional Desktop PC Dead?

- Tablet PCs and mobile devices appeal primarily to *consumers* of information
- Desktop PCs are often the choice of *producers* of information
- Redmond Magazine survey of business users:
  - 85% plan to purchase a Windows-based PC
  - 10% plan to purchase a Chromebook (Cloud-based PC)
  - 5% plan to purchase a tablet PC

Resources Available to Help Evaluate Computer Products

- Vendor literature, marketing information, websites, and user manuals
- Demonstration and evaluation versions
- Product reviews and comparison articles in computer periodicals and on the web
- Opinions of industry experts in trade publications and Internet forums, blogs, newsgroups
- Opinions of colleagues who have experience with a product
- Buyer’s guides

Industry (Trade) Periodicals That Publish Product Comparisons

- CNET
- Computer Shopper
- ComputingREVIEW.com
- Consumer Reports
- Consumersearch.com
- InfoWorld
- Macworld
- MaximumPC
- PC Magazine
- PC World
- Tom’s Hardware Guide
- TopTenREVIEWS
- ZDNet

Software Evaluations

- **Software evaluation copy** permits support staff to:
  - Try out a product's features
  - Assess a product's suitability to meet user needs
- Distributed via:
  - CD or DVD
  - Internet download
- May have fewer features
- May operate for a limited trial period

Decision-Making Tools

- Industry standard or best-selling products
- Products used by competitors
- Benchmarks
- Weighted-point evaluation method
- Request for proposal (RFP)
- Acknowledged subjective criteria

Industry Standard or Bestselling Products

- **Industry standard products**: technology products that are market leaders in sales
  - Also called **horizontal market applications**
  - Not a “standard” as defined by an independent organization
    - such as the American National Standards Institute (ANSI)
- Advantages:
  - Can reduce support costs
  - Likely to be targeted by trade book publishers, training materials developers, and support service vendors
- Disadvantages:
  - May not meet the specialized needs of some users
  - Standards based on market share change over time

Accounting Software Illustration

- Small businesses: likely to select a mass-market accounting package (such as QuickBooks)
- Medium to large-scale businesses: likely to evaluate and select accounting software based on specialized needs (multiple locations, special tax handling, and international business)
- Very large-scale businesses: likely to select a package that can be modified and customized to meet unique accounting requirements, or program a package from

Adopting Industry Standard or Bestselling Products

- Get user input before selecting software
- Find out which products end users have experience with
- Identify the advantages and disadvantages of competing products for specialized tasks
- Learn whether users have preferences among products

Products Used by Competitors

- Competitors may have already researched the technology marketplace and identified strategic reasons for adopting products, especially in niche markets
  - **Vertical** (or niche) **market application**: software that is highly specialized for a specific industry
    - Examples: software for automobile insurers or veterinarians
- Analyze strengths and weaknesses of products that competitors use

Benchmarks

- **Benchmark**: an objective test used to compare the capabilities of competing products
  - Use **objective evaluation criteria** that are unbiased
  - Eliminate **extraneous variables** that could bias the results of a product comparison

Benchmarks (continued)

- Common benchmark criteria:
  - Hardware
    - Processing speed
    - Storage capacity
  - Software
    - User productivity
- Vendors that provide hardware and software benchmarks:
  - Business Applications Performance (BAPCo)
  - PassMark Software
  - Standard Performance Evaluation Corporation (SPEC)

Steps in a Benchmark Project

1. Define the criteria to evaluate (e.g., printer speed)
2. Define a unit of work to measure (e.g., 100 printed pages—a mixture of types of output and ink coverage)
3. Eliminate extraneous variables
   - Use the same computer, network, and operating system
   - Use the same application software
   - Use the same paper type
4. Run tests with competing printers (e.g., several vendors' models)
5. Evaluate the test results (e.g., Which is the fastest printer, or most cost-effective?)

Weighted-Point Evaluation Method

- **Weighted-point evaluation method**: uses several evaluation criteria of predefined importance to arrive at a numerical score for each product
  - Also called the Kepner-Tregoe method
- Goal: Make the evaluation and selection process as objective as possible
  - Treat competing products equally
  - Eliminate favoritism or bias among evaluators
  - Force evaluators to specify in advance the important factors in evaluation
- May be legally required for public agencies

Steps in the Weighted-Point Evaluation Method

1. Decide on the evaluation criteria
2. Determine the importance of each criterion
3. Rate each product against all evaluation criteria
4. Compute the average rating for each criterion for each product
5. Weight the product ratings for each criterion by importance
6. Compute the total rating for each product
7. Compare product ratings

Examples of Criteria Used in Weighted-Point Evaluation Method

Category	Examples of Criteria
Hardware or software	• Processing speed • Storage capacity • Capabilities and features • Transaction volumes • Compatibility with existing technologies • Upgradeability (scalability)
End-user needs	• Ease of learning • Ease of use • Mandatory features (must have) • Desirable features (nice to have)
Support availability	• Technical support services (contact channels, availability times, methods) • Installation assistance • Training • Documentation • Troubleshooting • Maintenance and repair • Customer service reputation
Cost	• Total cost of ownership (see Chapter 1)

Weighted-Point Evaluation Example Criteria and Weights

Criterion	Criterion's Importance (Weight)	Tablet X Evaluation	Tablet Y Evaluation
Hardware capabilities	25%		
Software included	35%		
Vendor reputation	10%		
Vendor support	30%		
TOTAL	**100%**		

Weighted-Point Evaluation Example Evaluation Scores

Criterion	Criterion's Importance (Weight)	Tablet X Evaluation	Tablet Y Evaluation
Hardware capabilities	25%	90	70
Software included	35%	70	70
Vendor reputation	10%	50	95
Vendor support	30%	60	90
TOTAL	**100%**		

Weighted-Point Evaluation Example Results

Criterion	Criterion's Importance (Weight)	Tablet X Evaluation	Tablet Y Evaluation
Hardware capabilities	25%	90 × 25% = 22.5	70 × 25% = 17.5
Software included	35%	70 × 35% = 24.5	70 × 35% = 24.5
Vender reputation	10%	50 × 10% = 5.0	95 × 10% = 9.5
Vendor support	30%	60 × 30% = 18.0	90 × 30% = 27.0
TOTAL	**100%**	**70.0/100**	**78.5/100**

Weighted-Point Evaluation Use

- The weighted-point evaluation method can be used with:
  - More than two products
  - As many evaluation criteria as desired
  - Tip: use a spreadsheet to enter formulas and data values

Request for Proposal (RFP)

- **Request for proposal (RFP)**: a product selection or competitive bidding procedure
- Uses objective criteria to select among products proposed by vendors
  - Often used as the basis for awarding a contract to provide computer products
  - May be a legal requirement for technology selection in public agencies
  - An objective product and vendor selection tool

Steps in the RFP Process

1. Conduct a user needs assessment
2. Develop a purchase specification
3. Define:
   - Decision criteria
   - The importance of each criterion
4. Write an RFP document
5. Send the RFP to prospective vendors
6. Receive vendor proposals
   - Describe how each vendor's products address user requirements
   - Quote a bid price
7. Analyze and evaluate vendors' responses to the RFP
   - Often uses the weighted-point evaluation method
8. Select a vendor and award the contract

Acknowledged Subjective Criteria

- **Subjective evaluation criteria**: nonobjective factors not directly related to the fit between product features and user needs
- Based on:
  - Existing personal or business relationships
  - Convenience
  - Personal preferences
  - Traditional purchasing practices
- Are neither measurable nor repeatable from one evaluator to another

Acknowledged Subjective Criteria (continued)

- Why use acknowledged subjective criteria?
  - Lengthy personal or business relationship with vendor
  - Partnership agreement
  - Low regard for competing vendor or products
- Objective criteria, including price, may be less important
  - Larger organizations often use objective selection criteria
  - Smaller organizations often use more subjective selection criteria

Product Support Standards

- Help control user support costs by limiting the number of hardware and software options users can choose
- May offer options as a balance between two extremes:
  - One size fits all
  - Select anything you want
- Often adopted by larger organizations with a substantial investment in technology because the potential for waste is so large

Example: Hardware Standards at University of Texas Arlington

(Summer 2014)

Standard	Supported Hardware Products
Desktop PCs	• Windows—Dell OptiPlex, Precision models • Macintosh—Mac Pro, iMac, Mac Mini models
Laptop/Notebook PCs	• Windows—Dell Latitude models • Macintosh—MacBook Pro, MacBook models
Mobile Devices	• Windows Mobile 5 or 6 smartphones
Printers	• (Must be compatible with HP's Universal PostScript 64-bit driver for Windows 7) • B&W Laser—HP LaserJet models P2055dn, P3015x, P4015dn, 9000 series • Color Laser—HP Color LaserJet models CP2025dn, CP3525dn, CP4525dn, CP4525xh, CP 6015dn, CP6015x • MultiFunction Printers—HP LaserJet M3035, M3035xs, M9040MFP

Example: Software Standards at University of Texas Arlington

(Summer 2014)

Standard	Supported Software Products
Operating Systems	• Windows—XP, Windows 7, Windows 8 • Macintosh—OS X (10.5 – 10.9)
Desktop Applications	• Adobe—Acrobat, Acrobat Pro, Flash, Reader (Win & Mac) • Apple—QuickTime, Remote Desktop • Citrix—Receiver (Win & Mac) • Microsoft—Office (2007 – 2010, Win & Mac), SharePoint, Microsoft Security Essentials • VMware—vCenter (Win & Mac) • WinMagic—SecureDoc (Win & Mac)

Example: Software Standards at University of Texas Arlington (continued)

(Summer 2014)

(*continued*)

Standard	Supported Software Products
Email	• Internal—MavMail (uses Outlook Web Access) • External—Outlook 2007 (Win), 2010 (Win), 2011 (Mac), Entourage (Mac) • Mobile—iPhone, iPad, Palm Pre, Windows Mobile, Blackberry, Android
Web Browsers	• Apple—Safari • Microsoft—Internet Explorer • Mozilla—Firefox (Win & Mac)
Security	• Windows—Microsoft Forefront Endpoint Protection (FEP) (available on campus only) • Macintosh—ClamXav (open source)

Example: Support Policies at University of Texas Arlington (continued)

(Summer 2014)

Standard	UTA Support Policies and Procedures
Desktop Support	The Desktop Support home page describes how the Office of Information Technology supports hardware devices, software applications, and printers—including information on how to contact the help desk via telephone, email, or chat, how to submit a service request, and what to expect when you submit a service request.

Example: Support Levels at University of Texas Arlington (continued)

(Summer 2014)

Standard	UTA Support Policies and Procedures
Support Levels	The Office of Information Technology at UTA defines several levels of support for hardware and software products: • Full support—Provides installation, configuration, troubleshooting, problem escalation, some training and documentation • Partial support—Limited support services offered (for example, will reinstall software) • Minimal support—Support limited to 20 minutes of staff time (will refer problems to vendor)

How Organizations Develop Computer Product and Support Standards

- Standards based on:
  - An organization's computer culture
  - Historic technology purchase traditions
- **Product standards committee**: a group that defines technology product standards and coordinates their use
  - Composed of:
    - Support specialists
    - End users
    - Technical IT staff
    - Managers

Changes in Technology Product Standards

- Changes in technology product standards may be met with user resistance
  - Users are comfortable with existing standard
  - *If it ain't broke, why fix it?*
- Changes in standards should:
  - Be discussed with users
  - Involve users in decisions
  - Result in user training opportunities

How Organizations Implement Technology Product and Support Standards

- Adoption and implementation of product and support standards are influenced by:
  - Investment in existing technology
  - Continual introduction of new products, services, and product upgrades
- Conversion to new standards:
  - Can result in loss of employee productivity during the transition period
  - Can be phased in over time

Criteria Used to Update Product Standards

- New products offer technical improvements
- New products offer features that improve user productivity
- End-user preferences change over time
- New products offer cost savings
- New products may lead to changes in industry standards
- New products provide better support options

Adopting or Modifying Technology Standards

- Requires analysis and evaluation of products and services
- Triggers potential support cost increases for installation, upgrades, training, documentation, troubleshooting, and help desk services
  - Support costs often increase during transitions between old and new standards

Reasons to Convert/Not Convert

- Frequently cited reasons to adopt new technology:
  - It has new features that are needed
  - It is the latest innovation
  - The vendor may discontinue support of existing technology
- Frequently cited reasons to not adopt:
  - The new features are not worth the cost to convert
  - We have a substantial investment in the existing technology
  - We have a substantial investment in peripherals and software that are compatible with the existing technology, but may not work with the new technology
  - The new technology is not as stable as the existing technology

Example: Pros and Cons of Converting to Windows 8

- An issue in 2013-2014 and beyond
- Reasons to convert to Windows 8
  - Offers new features and a new user interface
  - Based on latest technology and improved security
  - Support for Windows XP terminated in 2014
- Reasons to stay with current version of Windows
  - New Windows 8 features not worth the purchase and conversion costs
  - Some users do not like the Metro-Modern interface
  - Many existing PCs do not have touch screens
  - Device drivers on existing PCs may have to be updated
    - or may not even be available!

Changes in Product Standards During the 2010s

- Technology changes that are likely to impact product and support standards during the 2010s include:
  - New Universal Serial Bus standards
  - 802.11ac wireless network devices
  - Voice recognition input
  - Windows 8 versus Windows 9 operating system
  - Microsoft Office desktop versus Office 365 (Cloud-based) versus Office Web apps (free)
  - Migration to cloud computing and SaaS
  - Which mobile devices standards to adopt

Acceptable Use Guidelines

- **Acceptable use guidelines**: policies adopted by an organization about how users are permitted and not permitted to use technology
- Describes behaviors prohibited by organizational policy
  - Example: use of email for personal messages
- Describes Illegal behavior
  - Example: unauthorized access to confidential information

Chapter Summary

- In order to reduce computer product and support costs and increase compatibility, organizations began to develop product standards during the 1980s
- User support staff often evaluate technology products and services to be able to make recommendations to users that will meet their needs and reduce costs
- Support staff use a variety of information resources to evaluate computer products:

Vendor literature	Websites
User manuals	Evaluation software
Product demonstrations and reviews	Expert opinion

Chapter Summary (continued)

- Aids to product evaluation and selection decisions:
  - Industry standards
  - Best-selling products
  - Products used by competitors
  - Benchmarks
  - Weighted-point evaluation method
  - Request for proposals (RFP)
- Product standards are based on:
  - Company culture or tradition
  - Decisions by a product standards committee
- Organizations adopt acceptable use policies to communicate which uses are and are not permitted