Collaboration Between Support Staff and Software Testers

Cem Kaner

David Pels

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A Success Story

- Successful mass-market product (category: edit/layout of text and graphics) with high per unit support costs.
- Pels managed Support, Kaner was software development manager for this product.
- Our query was: ***how many calls could we have prevented by making low-cost engineering changes (fix bugs, revise manual, supported another printer)?***
- We reviewed all call records, customer letters, magazine reviews

The answer was 50%

Prevention is the Best Call Avoidance

- 50% of the calls could have been prevented.
- Other authors claim that only 5% to 33% of calls are due to genuine defects. They might be right (maybe it depends on definition of defect). ***We didn't focus on blame (defects). We focused on prevention.***
- Next release had many of these fixes. Call costs dropped dramatically.

Collaboration

- Collaboration between Support and any group within Product Development (but especially, Testing) will usually result in improved customer satisfaction and fewer support calls.
- Collaboration with Testing is a natural because:
  - Their mission is finding bugs to get them fixed.
  - They need allies and data.
  - They can provide you with data on bugs and workarounds.
  - You can provide *lots* of other support for each other.

Quality Cost Reduction: A Shared Economic Model

- ***Quality Cost Analysis*** is a cost control system used to identify opportunities for reducing the controllable quality-related costs.
- The ***Cost of Quality*** is the total amount the company spends to achieve and cope with the quality of its product. This includes investments in improving quality, and expenses arising from inadequate quality.
- ***Quality engineer's goal***: minimize total cost of quality.
- ***Support's goal***: improve satisfaction while reducing support costs.

A Shared Economic Model

Quality-Related Costs Include:

- ***Prevention costs:*** everything the company spends to prevent software and documentation errors.
- ***Appraisal costs:*** all testing costs, and the costs of everything else the company does to look for errors.
- ***Internal failure costs:*** all costs of coping with errors discovered during development and testing.
- ***External failure costs:*** all costs of coping with errors discovered, typically by your customers, after the product is released.

Typical External Failure Costs

- Support call costs
- Preparing answer books
- Investigating complaints
- Refunds and recalls
- Interim bug fix releases
- Support multiple versions in the field
- Shipping updated product
- PR to soften harsh reviews
- Lost sales
- Lost customer goodwill
- Demands for bigger reseller discounts
- Warranty, liability costs
- Lawsuits
- Government investigations

The most easily measured external failure costs are borne by Tech Support.

Reciprocal Benefits of Collaboration: *Benefits to Testing*

- **You have data needed for quality improvement.**
  - **Costs of deferred bugs (*improve criteria for deferral*).**
  - **Costs of bugs that Testing missed (*useful for Testing process improvement or for arguments for more testing time in the future.)***
  - **Basis for future argument to stop ship a buggy product.**
  - **Data on troublesome configurations (for config testing).**

Reciprocal Benefits of Collaboration: *Benefits to Support*

- **You get to influence quality.**
  - **More / better configuration testing.**
  - **Better deferral decisions.**
  - **More customer-sensitive testing.**

Reciprocal Benefits of Collaboration: *Brainstorm on Additional Benefits*

There are many additional benefits to both sides. We'll provide a few organizational / structural and political benefits that we've encountered, but we'd like most of this part to come from you.

- **What additional benefits of collaboration are there to Support or Test and how would you encourage them?**
- **What resistances are there to collaboration?**

Help Desk Collaboration

- **Help desks in companies that buy software are often not in a position to influence publishers' testing practices. But your same types of data can influence purchasing practices. Collaboration this time is with Purchasing or Incoming QC.**
  - **Cost of support for different products / vendors.**
  - **Need for support contracts (and why, what terms) with different vendors.**
  - **Need for negotiating clout in solving specific support problems.**