Failures - why did these efforts fail?

- AZ, FL voting machines
- Quadrophonic sound
- Movie Rental DivX
- Low-fat fast food / Non-nicotine cigarettes
- Commercials in movie theaters
- IBM PC Jr with wireless keyboard
- 1970s-era US compact cars

Pre-Project Testing

One Aspect - Market factors

- No advantage over existing brands (OS/2 Warp)
- Early adopter (Apple Newton)
- Lack of interest (Tablet PC?)
- Changing standards (SONY Betamax)
- Lack of brand identity in image-driven category (Coleco “Adam” computers)
- Ignorance of buyer behavior for product category (Remote Control Walkman)
- Mispositioning (Retail on the Internet, better than reality issue)
- Failed opportunity (Xerography)
### Unlikely successes - passed Pre Project Testing

- Personal computers
- DVD players
- George Foreman Grill
- Cable TV
- Expensive water
- SUVs
- Brand names, prominent on clothes
- Bose Wave Radio
- Designer house paint
- $150 sneakers

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### Sure things

- Digital photography
- Fuel efficient cars
- White boards
- Cell phones

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### Pre-Project Testing - (5 besides marketing)

- Marketability
- Purpose
- Feasibility
- Preparation / Coverage
- Chance of Success / Effect of Failure
- Culture (development and delivery)
Purpose

- Is there a business or economic justification for the project?
- Is there a societal justification?
- Is there an academic justification?
- Is there majority or managerial support?

Feasibility

- Can a SW Requirements Spec be written to solve the problem at hand?
- Can finances support 2x the project cost?
- Can the customer support 2x the project schedule?
- Can the "delivery environment" support the solution?
- Where does the best solution fall on a technology scale?

The Technology Scale

- Animal
- Manual
- Mechanical Tension/Movement
- Hydraulic Pressure
- Pneumatic Pressure
- Mechanical Engine
- Electrical Magnetic - switch closure
- Electrical Assist - amplification
- Electrical Control - stimulus and response
- Computational Assist
- Computational Origination
Preparation and Coverage

- Is an adequate / optimal team available?
- Is an adequate / optimal development environment possible?
- Is the solution technology achievable?
- Is there adequate financial backing?
- Where’s the contingency?

Chance of Success / Effect of Failure

- Has the path of least resistance been chosen? - All factors.
- Is a dissimilar backup system required?
- Is a failed system worse than not implementing the system?
- Will a competitive system threaten your delivery?

Development Culture

- Chance of turnover, burnout limit
- Team or management resistance to optimal development scheme
- Management support/catalyst and help
- Team culture / parallel development
- Personalities
Delivery Culture

- Customer support/catalyst and help
- Education, training required of users
- Acceptance
- Satisfaction
- Gratitude

6 Questions often asked in Pre Project Testing

1. Is it the right system?
   Will it solve the right problem?
   It is possible to over automate - some systems don’t justify their costs.
   People problems do not need, and will not respond to technological solutions.
   If it ain’t broke, don’t go broke fixing it.

Question 2

2. What is at risk?
   Systems for which failure = disaster are a poor bet.
   Are partial results better than nothing?
   Is intermittent operation better than nothing?
   Is a subset of full function available upon failure? Is the subset better than nothing?
Question 3

3. How big and complex will it have to be?

Smaller, simpler software projects have distinct advantages over large, complex ones.

Question 4

4. How will it fit into the existing universe?

The nondigital portions of a system dwell in the real world, whose behavior is constrained by physical laws. Keeping much of the system nondigital may yield a more predictable system.

Question 5

5. What will it require of its users?

It is inhumane to use people as passive monitors, and then require them to intervene suddenly when things go astray. We don’t improve the situation when we turn airline pilots or nuclear power plant operators into scapegoats for bad system design.
Question 6

6. Will it require extensive security?

Data wants to be free. People will find ways to get information.