Presentation Video Link

Please use the following link to view the presentation recording which includes this slideshow, cost estimator application, and code review (19:57)

Final SEPM Team Project.mp4

SEPM presentation Team 3 Response to EDC

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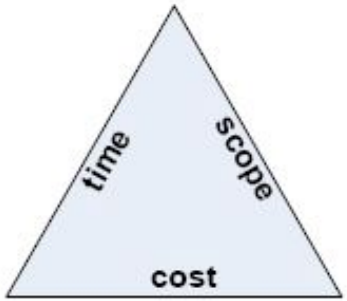
Agenda

1. Project Assumptions (triple constraints)
2. EDC Complaints
3. EDC Response
4. Project Plan
5. Risks
6. Cost Estimator App Demo
7. Cost Estimator App Code Review

Project Assumptions



Triple Constraints Triangle, 1950’s. (Atkinson, 1999)

Project Assumptions - Time

- **Project Length**: 13 months
- **Project Stages**: ~~Requirements~~, Design, Build, Test, Deliver, (Maintain)
    - **Iterative Development** (Larman, 2003)
        - **Agile Principles** (2001)
        - **Scrum Framework** (Rising & Janoff, 2000)
- **Component specific timeframes**

Project Assumptions - Cost

- **Budget**: £500,000
- **System Sales Price**:
    - **System Marketed Price:** £399.99
    - **Upgraded System Price**: £439.99
- **System Costs -** Free Resources, System Components, Licenses, Staff Wages
    - **Estimation Techniques**
        - **COCOMO** (Boem, 1981)
        - **Task-based prediction** (inhouse)
- **Infrastructural Costs**
    - **Operational Architecture:** Sufficient
    - **Risk Costs**

Project Assumptions - Scope

- **Stakeholders**: EDC, Internal
- **Vision**:
    - **EDC Specification**
        - Business Application
    - **Internal Development Research**
    - **Marketing Research**
        - Upgradability
        - Gaming Application

History - Design v0.0.1

- ★ 68008 CPU
- ★ 4 Glue chips
- ★ 32KB ROM
- ★ 4*32KB onboard RAM (soldered)
- ★ 2 Syn cartridge drives
- ★ 1 serial port
- ★ 1 joystick port
- ★ Integrated keyboard
- ★ Custom composite video port (no supplied cables)
- ★ 512*256 display with 32 colours
- ★ Case-mounted monophonic speaker

History - EDC response about Design v0.0.1

EDC disappointed and says 80% (at least 6) of the requirements should be met.

Adjusted Requirement Checklist (by Priority)

1. Board supports GUI and mouse
2. 1 industry standard removable drive
3. 512KB of RAM
4. Minimum of 2 RS 422/485 standard serial ports
5. SCSI expansion capability
6. Industry standard Operating System
7. At least a 68000 CPU (requirement already met)

History - Our Response to EDC

How requirements will be addressed:

- ★ MCC OS, with GUI, UWM window manager.
- ★ Pro Expansion board with socket for 68000 CPU, ULA, 4 RAM chips, 25 port centronics connector and SCSI capability (£15 per machine)

Adjusted Requirement Checklist

- ❑ Industry standard Operating System
- ❑ 512KB of RAM
- ❑ 1 industry standard removable drive
- ❑ SCSI expansion capability
- ❑ ~~At least a 68000 CPU~~ (requirement already met)
- ❑ Minimum of 2 RS 422/485 standard serial ports
- ❑ Board supports GUI and mouse

Plan - Our Response to EDC

How requirements will be addressed:

- ★ 2x 256KB RAM
- ★ GDISP XVX
- ★ 3.5” floppy storage
- ★ OP-J + IOP-J-2

Adjusted Requirement Checklist

- ❑ ~~Industry standard Operating System~~ (requirement already met)
- ❑ 512KB of RAM
- ❑ 1 industry standard removable drive
- ❑ ~~SCSI expansion capability~~ (requirement already met)
- ❑ ~~At least a 68000 CPU~~ (requirement already met)
- ❑ Minimum of 2 RS 422/485 standard serial ports
- ❑ Board supports GUI and mouse

Plan - Design v0.0.2

Hardware

- ★ 68008 CPU
- ★ *Pro Expansion Board
- ★ 40KB ROM (8KB + 32KB)
- ★ 512KB RAM (2x 256KB)
- ★ i8042
- ★ XVX GDISP
- ★ OP-J, IOP-J-2 I/O Chip
- ★ Resistors, Caps, etc
- ★ Desktop Case
- ★ 3.5” Floppy

Software

- ★ MCC OS
- ★ *Telebasic (£25 license per machine)

< System Budget of: £250

Plan - EDC official response

How quickly the modified systems can be manufactured:

- Hardware
  - Full System (inhouse) - 24 worker weeks
- Software
  - OS - 8 weeks design, 16 weeks coding
  - PTR/E - 8 weeks design, 16 weeks coding
  - ~~GEM - 12 week design, 26 weeks coding~~

Design Software while building Hardware

Development Time: 56 worker weeks

Project schedule

- Eight 6-week-long Governance cycles for project analyst's involvement
  - Project Updating & Resourcing
  - Project Tracking
    - **Failure Rate x Cost of Failure** (Maxim, 2008)
  - Project manager available fortnightly, analyst available at the beginning of each cycle
- Two or Three Sprints per Governance cycle
  - Software Priorities: 2:1:3 ratio for Design, Manufacturing, Testing (Brooks, 1975)
  - Hardware Priorities: 1:2:3 ratio for Design, Manufacturing, Testing
  - 3-person software team, and 3-person hardware teams -
    - **Budget allows both teams working in parallel, with 2 workers per team**

Project Milestones

- ➔ Week 12 - First machine is hardware complete,
- ➔ Week 28 - First machine Software Complete
- ➔ Week 32 - 2000 system hardware complete
- ➔ Week 48 - 2000 systems software complete
- ➔ Week 56 - 2000 machine delivered to EDC
- ➔ Future
  - ◆ From week 32 hardware effort available for designing gaming system
  - ◆ From week 48 software effort available for designing gaming system

Project Risks

Project Overruns in Time, Scope, or Cost - Likelihood: 7/10 - Impact: 8/10

- Mitigation Strategy: Implement a robust project management methodology, like Agile or Scrum, to allow for flexibility and regular reassessment of the project timeline and budget. Utilize iterative development to make adjustments as needed.
- **Post-mitigation score**: Likelihood: 4/10 - Impact: 5/10

Insufficient Staffing or Skill Gaps - Likelihood: 5/10 - Impact: 6/10

- Mitigation Strategy: Plan for adequate training and development of current staff. If necessary, hire additional skilled personnel. Regularly evaluate the team's performance and provide resources for skill enhancement.
- **Post-mitigation score:** Likelihood: 2/10 - Impact: 3/10

Poor Communication Among Team Members or with Stakeholders - Likelihood: 7/10 - Impact: 6/10

- Mitigation Strategy: Establish clear communication channels and regular update meetings. Use collaboration tools to enhance team interaction and maintain transparency with stakeholders.
- **Post-mitigation score**: Likelihood: 3/10 - Impact: 2/10

Quality Issues in the Final Product - Likelihood: 4/10 - Impact: 8/10

- Mitigation Strategy: Implement a rigorous quality assurance process. Conduct regular testing phases throughout the development cycle and address issues promptly.
- **Post-mitigation score**: Likelihood: 2/10 - Impact: 4/10

Thank you!

References

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