Unit 11 – Fully Costed Project Plan and System Strategy

Synputer Case Study

1. Fully Costed Project Plan Overview

This section presents a fully costed project plan for the modified Synputer system, explicitly aligned with the fixed development budget of **£500,000**, the pre-advertised retail price of **£399.99**, and the delivery timeframe of **13 months**.

The project adopts a single revised technical architecture designed to minimise technical risk, ensure commercial viability, and meet the core requirements of EDC while remaining marketable to existing Synful users and potential new customers.

The development budget is allocated as follows:

- **Hardware development and procurement:** £180,000
- **Software development and licensing:** £100,000
- **Labour (engineering, integration, testing):** £170,000
- **Miscellaneous and contingency:** £50,000

Total development budget: £500,000

This budget supports the design, prototyping, integration, testing, and preparation for production of a revised desktop-based system.

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2. Updated System Requirements and Justification

The revised system requirements were selected based on technical feasibility, stakeholder priorities, and risk mitigation within the fixed budget and schedule

constraints. Table 1 summarises the updated requirements, their priority, associated assumptions, and justification.

Table 1 – Updated System Requirements

Requirement	Type	Priority	Assumption	Justification
Desktop form factor	Non-functional	Must Have	EDC accepts a desktop solution when supported by technical evidence	Case analysis shows that weight ≤2 kg and ≥2 hours battery life are not achievable within scope; a desktop design removes weight and power constraints
Industry-standard operating system	Functional	Must Have	A third-party OS can be licensed within budget	Significantly reduces development risk and satisfies EDC's requirement for stability and compatibility
≥512 KB RAM	Non-functional	Must Have	Increased memory cost is offset by removing portable hardware	Required to support multitasking OS and business applications
TeleBasic compatibility	Functional	Must Have	A native interpreter or licence is available	Essential for migration of existing EDC customer applications

Standard removable storage	Functional	Must Have	Floppy storage is accepted as an industry standard	Enables data exchange with other business systems
External keyboard support	Functional	Must Have	Standard keyboard interface is sufficient for initial release	Critical for business usability
Bundled office suite	Functional	Must Have	A third-party suite is available within schedule	Core element of the commercial value proposition
Expandable architecture	Non-functional	Should Have	Expansion slots can be added without exceeding cost targets	Extends system lifespan and competitiveness
Graphical user interface	Functional	Should Have	GUI can be partially implemented or ported	Improves usability for graphical applications
Portable form factor	Non-functional	Won’t Have	—	Demonstrably infeasible within budget and schedule
Proprietary OS or storage	Functional	Won’t Have	—	Unacceptable technical and schedule risk

These requirements reflect a deliberate reduction in speculative innovation in favour of feasibility, stakeholder value, and controlled delivery.

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3. Component Cost Breakdown and Unit Economics

The modified system is designed to achieve a **target unit manufacturing cost of approximately £250**, enabling compliance with the advertised retail price of **£399.99** while maintaining a sustainable commercial margin.

Table 2 – High-Level Per-Unit Cost Breakdown

Cost Category	Estimated Cost (£)	Notes
CPU (Motorola 68k series)	45	Balanced cost–performance selection
RAM (512 KB)	70	Largest single hardware cost driver
Storage (standard floppy)	35	Industry-standard removable storage
Motherboard and I/O	40	Serial interfaces, display, keyboard
Power supply and case	30	Desktop enclosure
Licensed operating system	15	Per-unit third-party OS licence
Bundled office suite	10	Volume licensing
Assembly and QA	5	Standardised production
Total estimated unit cost	**≈ £250**	Within cost target

Component-level costs are derived from the approved Bills of Materials (Appendix 1 and Appendix 2) and aggregated to provide traceability between hardware selection, software licensing, and overall unit economics.

Commercial Implications

- **Advertised retail price:** £399.99
- **Estimated unit cost:** ≈ £250
- **Gross margin per unit:** ≈ £150

This margin supports distribution, support, overhead, and contingency while preserving commercial viability.

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4. Prototype Delivery and Project Timeline

The project follows a **13-month delivery plan** combining staged governance with iterative development.

- **Months 1–3:** Requirements validation and architectural design
- **Months 4–8:** Hardware development, procurement, and software integration
- **Month 8: Prototype hardware available**
- **Months 9–11:** System integration and testing
- **Months 12–13:** User acceptance testing and release preparation

Prototype systems are therefore expected to be available **by the end of month 8**, enabling sufficient time for integration testing and risk-controlled delivery.

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5. One System or Two: Strategic Decision

A deliberate decision was made to implement **a single technical system with two commercial variants**, rather than developing two separate systems.

Rationale

- A single hardware platform reduces engineering duplication and cost
- Technical risk is minimised by avoiding parallel development tracks

- Commercial differentiation is achieved through branding and software bundling rather than hardware divergence

Market Accommodation Strategy

Stakeholder	Key Needs	Accommodation Strategy
EDC (business market)	Compatibility, stability, data exchange	Industry-standard OS, TeleBasic compatibility, bundled office suite
Existing Synful users	Backward compatibility	Native support for TeleBasic applications
New users	Usability and productivity	Graphical interface and pre-installed productivity software

This strategy balances stakeholder needs while maintaining architectural simplicity, cost control, and delivery confidence within the fixed budget and schedule.

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6. Conclusion

The revised project plan demonstrates a clear understanding of technical feasibility, commercial constraints, and stakeholder requirements. By adopting a single desktop-based architecture, licensing industry-standard software, and controlling scope, the project delivers a viable system within **£500,000**, meets the **£399.99 retail price constraint**, and achieves a realistic **unit cost of approximately £250**.

The approach ensures that EDC's critical business requirements are met while preserving compatibility for existing users and usability for new customers, thereby supporting both short-term delivery and long-term commercial success.