**Topic 4 – Workshop – Suggested Answers**

**Scenario 1: IT in Amy’s Candles**

Amy’s experience of setting up and running a small business is a common one, in that management of the information needed to run the business efficiently is more difficult than expected. She has had a system created and built for her but finds that it doesn’t quite meet her needs. Some of the specific problems are:

- A customer’s details cannot be stored without a valid order number

- A dye that is no longer available from the supplier, and which has a replacement, is out of stock and Amy keeps receiving reminders to reorder the ‘midnight moon’ dye.

In your discussion group, suggest reasons as to why these two anomalies have arisen.

**Let's delve into the reasons why the two anomalies have arisen in Amy's IT system:**

*1. A customer’s details cannot be stored without a valid order number*:

Reasons:

a. Lack of Comprehensive Requirement Gathering: It's possible that when the system was being designed, a thorough requirement gathering process did not take place. Bob might have assumed that only confirmed orders were important, hence a customer without an order didn't need to be in the system.

b. Misunderstanding of Business Rules: Bob might have misunderstood or made an assumption about what defines a "customer" for Amy's business. He equated a customer strictly with someone who has made a purchase, which may not always be the case in real business scenarios.

c. Integrity and Validity Checks: Bob likely implemented stringent data integrity checks to ensure consistency in the data. While this is generally good practice, the rules applied here were too rigid. This could have been avoided if the implications of these checks had been discussed with Amy.

d. Focus on Transactional Data: The system may have been set up with a focus on transactions rather than relationship management. In many businesses, nurturing potential customers is key, and not being able to capture their information is a significant oversight.

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*2. A dye that is no longer available from the supplier keeps triggering reorder reminders:*

Reasons:

a. Static Inventory System: The system Bob set up for Amy might be operating on static information. It doesn’t have an easy way to adapt to changes in the supplier's inventory or product lineup.

b. Lack of Flexibility: Bob's system seems to have pre-defined reorder points for each item. But it lacks the flexibility for Amy to adjust or turn off these reminders based on changing conditions or product discontinuations.

c. Missing Feature for Discontinued Products: There seems to be no feature to mark a product as 'discontinued' or 'replaced'. Without this feature, the system doesn't recognize that the dye has been replaced and thus keeps sending reorder reminders.

d. Absence of Manual Override: A good inventory system should have a manual override option for situations just like this, where the business owner knows something the system doesn't. It appears Bob’s system didn't offer this flexibility.

e. Lack of Supplier Integration: Modern inventory systems can sometimes integrate directly with supplier databases to get real-time information on product availability. Amy's system might not have this capability, hence it isn’t aware that 'midnight moon dye' is no longer in production.

Conclusion: Both anomalies highlight the importance of understanding the nuances of a business when designing its IT systems. It also underscores the significance of flexibility in system design to accommodate real-world challenges and changes.

**Scenario 2: Master Data in Match Lighting**

In this scenario, Mr Cook, the IT Manager, is getting complaints from the various systems at Match Lighting are providing incorrect information. It is suggested this has happened because the various departments have developed their own information systems to deal with their own problems.

In your discussion group, discuss

- The problems that were caused in Match Lighting by this approach to systems development, and what impact those problems would have

- Mr Cook has created two master files for Customer and Product. In the university, there is a master file for Student. List some systems in the university that you think would use this master file. What other entities do you think would require this type of approach?

- What do you think would be some of the possible barriers to the adoption of the master files at Match Lighting?

**Let's break down your questions related to the scenario at Match Lighting:**

**1. Problems caused by department-specific systems development and their impact:**

Problems:

a. Data Redundancy: Multiple departments storing the same or similar data in different systems.

b. Data Inconsistency: Different departments might have different versions or representations of the same data.

c. Integration Issues: Merging data from various systems can become cumbersome, especially if they use different formats or identifiers.

d. Operational Inefficiencies: Replicating similar processes across departments can be redundant and time-consuming.

e. Difficulty in Updates: Making changes to product or customer information requires simultaneous updates across multiple systems.

f. Increased Costs: Maintaining and managing multiple systems incurs unnecessary operational costs.

Impact:

a. Decreased Trust: Users may lose trust in the systems if they consistently provide incorrect or inconsistent information.

b. Reduced Productivity: Extra work and time spent in consolidating and rectifying data discrepancies.

c. Operational Mistakes: Inaccurate data can lead to wrong business decisions or operational mistakes.

d. Resource Wastage: Resources spent on maintaining redundant systems and rectifying errors could be better utilized elsewhere.

**2. University's master file for 'Student' and other potential master files:**

Systems that might use the 'Student' master file:

a. Enrollment System: For registering courses and managing schedules.

b. Library System: For tracking book loans and returns.

c. Hostel Management System: To manage student accommodations.

d. Billing and Fees System: For managing tuition fees, hostel fees, and other charges.

e. Examination System: For tracking student performance and grades.

f. Alumni System: To keep in touch with graduates for events and contributions.

Other entities that might require a master file approach in a university:

a. Courses: Information about all the courses, their syllabus, professors, schedules, etc.

b. Faculty: Details about faculty members, their specializations, schedules, and publications.

c. Assets: Information about university's assets like labs, computers, infrastructure, etc.

d. Research Projects: Details about ongoing research, funding, participants, and findings.

**3. Possible barriers to the adoption of master files at Match Lighting:**

a. Resistance to Change: Employees who are accustomed to their department-specific systems might resist moving to a new centralized system.

b. Training Requirements: Employees will need training to understand and use the new system effectively.

c. Data Migration Challenges: Transferring data from multiple departmental systems to a centralized master file might pose integration and data quality challenges.

d. Initial Costs: There will be upfront costs associated with setting up the new system and migrating data.

e. Downtime: Transitioning to the new system might require a temporary halt or slowdown in regular operations.

f. Technical Challenges: The new system must be robust, scalable, and capable of handling data from various departments without hitches.

g. Potential Loss of Department-Specific Features: The new centralized system might lack some features that were specific to the departmental systems.

Discussing these points should provide a comprehensive understanding of the scenario and its implications.

**Scenario 3: Opportunity for Amy’s Candles to Work with Match Lighting**

In this scenario, Amy has been approached by Match Lighting who want to stock and sell her candles. If she is to do this, she will need to make substantial investments in machinery and improve her information systems. Looking at the CATWOE’s in 4.3, you will see the differences in views between Amy and Mr Alvis.

In your discussion group, discuss:

- Reasons why would Amy be considering the arrangement with Match Lighting? Why is Match Lighting considering working with Amy?

- When you look at the three conceptual models (4.5, 4.6 and 4.7), how do you think the arrangement will change the way that Amy does business?

- What changes to her systems do you think Amy will be required to make?

**Based on the scenario presented, let's break down the discussion points:**

**1. Reasons for considering the arrangement:**

Amy's Perspective:

a. Expansion Opportunities: Partnering with Match Lighting would give Amy's Candles the opportunity to reach a broader audience and expand her sales.

b. Increased Revenue: Selling to major retail outlets would likely increase her revenue due to the higher sales volume.

c. Business Stability: Working with an established company like Match Lighting could provide a more consistent and predictable sales pattern, adding stability to her business.

d. Brand Recognition: Being associated with Match Lighting might boost the reputation and visibility of Amy’s Candles in the market.

Match Lighting's Perspective:

a. Unique Product Offering: Amy's Candles offers handcrafted, unique designs that can differentiate Match Lighting's product range from competitors.

b. Local Craft Appeal: Handcrafted, bespoke products are often appealing to consumers looking for unique, quality items.

c. Mutual Growth: Introducing a new, quality product line can drive traffic and sales for Match Lighting, leading to mutual benefits for both businesses.

d. Diversification: Adding candles and wax sculptures can diversify their product range, potentially attracting a new customer segment.

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**2. Changes in Amy's Business Model:**

Conceptual Model Analysis:

a. Operational Scale: Amy would shift from a small-scale, bespoke business model to potentially a large-scale, mass production one.

b. Business Focus: While currently focused on unique handcrafted designs, the partnership could emphasize mass production, potentially affecting the uniqueness and handcrafted nature of her products.

c. Supply Chain & Logistics: The partnership might necessitate new suppliers, bulk purchasing, and a more complex distribution model to meet the demands of major retail outlets.

d. Customer Interactions: Previously dealing directly with her customers, Amy might now have to liaise more with intermediaries like Match Lighting or other major retail outlets.

**3. Changes to Amy's Systems:**

a. Upgraded IT Systems: Amy will need to enhance her IT systems to facilitate online order processing, order tracking, and potentially integrate with Match Lighting's systems.

b. Inventory Management: With increased production, Amy will need a more sophisticated inventory management system to track raw materials, in-process items, and finished goods.

c. Quality Control: Mass production may require more rigorous quality control systems to ensure product consistency.

d. Sales & Forecasting: Amy may need new tools for sales analytics and demand forecasting to plan production and meet the requirements of major retail outlets.

e. Human Resources & Training: Expansion might necessitate hiring more employees and setting up training systems for them.

f. Finance & Accounting: With increased business scale, Amy might need more comprehensive financial tools for budgeting, accounting, and financial analysis.

These points should serve as a foundation for the discussion group. Further analysis and debate can lead to deeper insights based on individual perspectives and interpretations of the scenario.