# STATUS REPORT

## Acme Manufacturing Risk Assessment

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# Content

# Acme Manufacturing (AM) Profile Assumptions

AM manufactures Spork categorised as the fabricated metal products or Section C in the UK Standard industrial classification of economic activities (Office for National Statistics, 2018). The literature review provides the following profile assumptions:

- Ability to hire more employees as Department for Business, Energy & Industrial Strategy (DBEIS) (2020) reported that 41% of medium-sized businesses (MEs), or 30% of manufacturing SMEs expect employment growth.
- Expected increasing turnover in 12 months as DBEIS (2020) reported 81% MEs had increased profit, and 47% had increased turnover since 2015.
- Financially stable and holding a greater risk appetite with the DBEIS (2020) supportive reference of 86% of MEs successfully obtaining external finance.
- Low IT capabilities and resource poverty (Premkumar,2003)
- Vulnerable to natural hazards, especially Extreme Weather Events (Crichton, 2006, as cited in Wedawatta et al., 2010)

# Business Risks

- As DBEIS (2020) reported, AM has the success obstacles of 1) market competition, 2) regulations, 3) taxation, and 4) staff recruitment. 32% of manufacturing SMEs apply new or significantly enhanced processes (DBEIS, 2020), improving competitors' competitiveness.
- May encounter significant technological and environmental uncertainties because of little influence over market prices (Welsh & White, 1981, as cited in Raymond et al., 2019:1),impacting strategy and competitiveness (Bili & Raymond, 1993; Levy & Powell, 1998, as cited in Raymond et al., 2019: 1).
- The relocation of financial services (Alvarez & Marsal, 2018), re-evaluation of business projects, lack of talents in human resources (Clarence-Smith, N.D.), uncertainty in the cash flow and economy of immediate years to come, all due to still-unknowns of Brexit, play a vital role in the organisations' decision whether to invest for an Information Risk Management platform at this point. Uncertainty in decision-making is a major issue.

- Cybersecurity attacks, impacting business, against SMEs, including manufactures, are so common due to 1) cybersecurity underestimation, 2) limited budgets, 3) shortage of skilled security staff, and 4) huge cost of security awareness training and security auditing solutions (Saleem et al., 2017; Heikkilä et al., 2016).

## Technical and business risks against proposed Enterprise Resource Planning (ERP) solutions - summary of Appendix A and B

| Solution | Technical Risks | Business Risks |
|---|---|---|
| Commercial Off the Shelf | - Vendor lock-in | - Return on Investment |
| Open-Source | - Termination of community support<br>- Lack of IT capabilities | - Lose competitiveness by the launch delay |
| In-House | - Low quality product<br>- Lack of IT capabilities | - Lose competitiveness by the launch delay or failure |

*Table 1:: Technical & Business Risks*

## Selection of Methods

Implementing an ERP system is costly and risky (Markus & Tanis 2000) and literature review reported that more than 70% failed to achieve expected benefits (Technology Strategies, 1998, as cited in Al-Mashari, 2000: 977). As Tomas (2005, as cited in Poba-Nzaou et al., 2008: 531) suggested, we apply a risk management plan to mitigate the risk.

Management and estimation are the primary focus of selecting the risk assessment methodologies. Qualitative approach is not applicable as restricted staff access. We apply and combine The Open Group Standard (TOGS) Factor Analysis for Information Risk (FAIR) and International Organization for Standardization (ISO) 27005 to ensure an effective process (TOGS, 2021).

ISO 27005 details management of risk while FAIR is the methodology, a four-stage process, as Chart 1 describes, that focuses on identifying, analysing, and evaluating the risks (TOGS, 2010). The following should be performed to establish an organisational risk management process (TOGS, 2010):

- risk identification assessments;
- development of risk treatment plans;
- defining and implementing policies and procedures for selected controls; and
- monitoring controls and the overall risk management process.

| The FAIR risk management framework incorporates the below | | | |
|---|---|---|---|
| Stage 1 | Stage 2 | Stage 3 | Stage 4 |
| Identify, document, and scope all company assets | Estimate probable threat event frequency (TEF) | Estimate the worst-case loss | From findings, describe the risk level |
| Identify the threats that can impact the company assets | Estimate the probable Threat Capability (TCap) | Estimate Probable Loss Magnitude (PLM) | |
| | Identify and describe existing planned controls | | |

*Chart 1:: 4 stages of FAIR risk management*

Once risks are defined, the team collates a risk treatment plan (TOGS, 2021), including risk reduction, avoidance, transfer and retention.

# Timeline

Risk analysis and disaster recovery planning are the core activities for the timeframe. These tasks can start simultaneously while the cost-benefit analysis needs to factor in the early results of the risk analysis. The tasks regarding the creation of the report can begin as soon as the analysis is nearing its end, closing with the final quality check.

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# Appendix

## Appendix A: Technical Analysis against three possible solutions

Appendix A describes further details of technical analysis against hardware, maintenance contract, functionality, reliability, performance, support, future productivity, security and risk of the ERP solution provider.

| Technical | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Solutions | Hardware | Maintenance Contract | Functionality | Reliability | Performance | Support | Future productivity | Security | Risk of the ERP solution provider |
| COTS | Proprietary Machine, Cloud Support? | Telephone Support at $50k p.a. | Enough functionality as for commercial use | Reliable enough for the commercial use. | Limited to the vendor spec. | Vendor Telephony Support | Vendor Lock-in | Able to rely on the vendor. | Vendor Lock-in. Termination of the support. |
| Open-Source | Commodity Hardware | None | Depending on the maturity of the open-source community. | Depending on the maturity of the open-source community. | The higher the hardware spec, the higher the performance. | Community or IT team support. | Increasing productivity (learning curve). | IT staff skill dependent. | Termination of community support. Lack of security/technical/operational capabilities |
| In-house | Depend on skillset of the student | Maybe with the student | Depend on skillset of the student | Depend on skillset of the student | Depend on skillset of the student | The student support or IT team support. | Depend on the student and IT team. | IT staff skill dependent. | Low quality product (maintenance, stability, scalability, security) because of heavily dependent on the student Lack of security/technical/operational capabilities |

*Appendix A Technical Analysis against hardware, maintenance contract, functionality, reliability, performance, support, future productivity, security and risk of the ERP solution provider*

## Appendix B: Business Analysis against three possible solutions

Appendix B describes further details of business analysis against cost, feasibility, easiness to implement, time to release, easiness to maintain, uncertainty and business risks with discussion points and comments.

| Business | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Solutions | Cost | Feasibility | Easiness to implement | TIme To Release | Easiness to maintenance | Uncertainty | Business Risk | Comments |
| COTS | High | High | Easy | Fast | Easy | Lower uncertainty as the vendor specific | Cost vs Benefits. ROI. Cost may be larger than benfits. | Depending on the risk appetite and budget agaisnt the ERP. |
| Open-Source | Medium | Medium | Medium: Cusotomization and configuration needed. | Medium: Cusotomization and configuration needed. | Medium | Medium uncertainty. Depend on the level of community support. No one possibly support the solution anymore. | Lose competitiveness by delay of launch. | If the solution is outdated and no maintenance, the compnay can change the solution to COTS solution if they have time. |
| In-house | Low | Low | Difficult: Fully dependent on the student. | Questionable: takes time as it requires development from scratch. | Hard | High uncertainty. A student is reliable enough to complete the work? | Lose competitiveness by delay or failure of launch. | Questionable. No benefits except cost. If including opportunity loss costs, this may have no benefits. |

*Appendix B: Business Analysis against cost, feasibility, easiness to implement, time to release, easiness to maintain, uncertainty and business risks with discussion points and comments*