Factors Determining Turnaround Strategies for Declining, Large, High-tech organizations

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ABSTRACT

This study aims to identify the factors that should determine turnaround strategies for declining, large, high-technology companies. Goswami (2022) indicates that many high-tech organizations have been declining recently due to an external crisis triggered by inflation and high interest rates, with many implementing turnaround strategies. This study offers an evidence-based approach to identify the factors that should be considered when selecting a turnaround strategy at declining, large, high-technology companies. An evidence-based approach was used since Pfeffer and Sutton (2006) suggested that using data to drive decisions improved management decisions. The qualitative Rapid Evidence Assessment (REA) methodology suggested by Barends et al. (2017) was used to find 14 articles (quantitative, qualitative), critically appraise, and code to synthesize the evidence and provide findings and recommendations for the turnaround of high-technology companies. The main findings of this research are that a) the selection of the turnaround strategy should differ based on whether the crisis is externally or internally triggered and should consider stakeholder management, in addition to strategic and operational factors b) An external crisis requires managerial cognition of the crisis, flexibility to adapt to the current market, aligning of the strategy of the organization with the environment and pursuing new sales markets which have not been impacted by the external crisis, focus on innovation, increased R&D spending, and increased sales/marketing. c) An internal crisis requires managerial cognition of the crisis, along with employee incentives, customer focus, communication with all stakeholders, retrenchment, restructuring, new product introduction, quality, process focus, decentralizing decision-making, and engaging in external relationships such as acquisitions/mergers/joint ventures.

KEYWORDS

Turnaround strategy, high-tech turnarounds, organizational strategy, stakeholder management

ARTICLE INFORMATION

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1. Introduction

Many businesses that were successful in prior years are no longer around. The US Bureau of Labor Statistics states that ~65% of businesses fail after ten years (Gustafson, 2022). Perry (2021) indicates that only 52 companies on the Fortune 500 list in 1955 were present in 2021. This indicates that businesses that were once thriving decline and fade away. Once organizational decline has been identified, the organization attempts a turnaround with the help of turnaround specialists (Ellis, 2012). The phrase “turnaround” has been defined by Barker and Duhaime (1997) as: “when a firm undergoes a survival-threatening performance decline over the years but can reverse the performance decline, end the threat to firm survival, and achieve sustained profitability (pp. 18)”.

Oliver (2020) indicated that two technology giants, Yahoo and Google, faced differing turnaround results, with one firm facing chronic failure and the other succeeding. This indicates that firms operating in the same market space, with similar environmental pressures, can either be successful or decline based on the strategy followed by the company. Therefore, a firm must examine all relevant factors before narrowing down to a specific turnaround strategy.

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1.1 Problem Statement
There are several strategies for organizational turnaround like, retrenchment (Robbins & Pearce, 1992), filing for bankruptcy (Moulton & Thomas, 1993), debt restructuring (Sudarsanam & Lai, 2001), re-organization of the top management team (Trahms et al., 2013), mergers and acquisitions (Arend, 2008). Though these strategies are well known, not all turnarounds are successful. Cuneo (2011) indicates that nine out of 10 turnarounds fail. The recent decline in large, high-tech organizations motivated the context for this research, which leads to the question: What factors should determine the selection of turnaround strategies in declining, large, high-technology firms?

To better define this review question, a firm is classified as declining if it has filed for bankruptcy or has experienced a decline in ROI (Return on Investment), ROS (Return on Sales), or ROA (Return on Assets), or decline in sales, or decline in profits for one year. This definition has been derived from the existing scholarly literature on turnarounds (Pearce & Robbins, 1993; Trahms et al., 2013). A firm is classified as high technology if it is from the aerospace, computer, electronic, optical, or pharmaceutical/medical devices industries (OECD, 2011).

A firm is classified as ‘large’ if it has over 250 employees (OECD, 2020). Large firms employ different turnaround strategies than smaller firms. Boyle and Desai (1991) indicated that smaller high-tech firms with few slack resources could not survive retrenchment strategies due to the high demand for new products, while larger firms can survive retrenchment.

Post-2022, many news articles reported a decline in large, high-tech firms (Popli, 2022). Most research in corporate turnarounds focuses on the textile or manufacturing industries where cost retrenchment turnaround strategies are applied (Schweizer & Nienhaus, 2017). These strategies need to be revised in the high-technology sector since there is a high demand for new products, which requires a constant focus on R&D and a growth mindset (Morrow et al., 2004). Several papers evaluate case studies of turnarounds within different high-technology firms. However, no systematic review specific to the context of large, high-technology turnarounds was found during the search of databases. Therefore, this review question attempts to address the gap in turnaround strategy research in the high technology sector. The answer to the review question provides practical knowledge, which is helpful for both top-level and mid-level leadership teams at organizations so that they can choose organizational turnaround strategies by recognizing the factors causing the decline in the organization.

1.2 REA question
The REA question was framed using the CIMO (Context, Intervention. Mechanism, Outcome) framework as suggested by Denyer et al. (2008). The CIMO framework frames a design-oriented research question, which helps offer practical interventions/solutions to issues faced by management professionals and organizations across different contexts (Costa et al., 2018). Using the CIMO framework to identify the different keywords that should be part of the search strategy also helps to determine the scope of the research (Kebede et al., 2020).

The question affects all organizational stakeholders—this can include CEOs, turnaround specialists, shareholders, and employees. Table 1 frames the CIMO question and specifies the search strings that will be used to address each of the CIMO elements.

The REA question based on the CIMO framework is as follows:

What factors should determine the selection of turnaround strategies in declining, large, high-technology firms?

<table>
<thead>
<tr>
<th>CIMO framework</th>
<th>REA scope</th>
<th>Search strings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context</td>
<td>A large, high-tech organization facing decline</td>
<td>large AND high-tech OR comput* OR IT OR electroni* OR pharma* OR aerosp* OR (medical devi*) AND (organization OR firm OR company OR business OR corporat*)</td>
</tr>
<tr>
<td>Intervention</td>
<td>Factors influencing the selection of turnaround strategy</td>
<td>This answers the research question.</td>
</tr>
<tr>
<td>Mechanism</td>
<td>Selection of apt turnaround strategies</td>
<td>turnaround strateg* OR (corporate strateg*)</td>
</tr>
<tr>
<td>Outcome</td>
<td>Successful or failed turnaround</td>
<td>effective OR success* OR fail* OR declin*</td>
</tr>
</tbody>
</table>
2. Theoretical framework

The theoretical lens used to view the REA question is the contingency theory. The contingency theory suggests that there is no best way for an organization to organize, but rather, the best way to lead or organize is determined by the situation or environment influencing the organization’s current state (Burns & Stalker, 1961). In the context of the research question, the organization’s current state is a declining state. Organizational decline, as defined by Weitzel and Jonsson (1989), is “a life cycle stage that organizations enter when they fail to anticipate, recognize, avoid, neutralize, or adapt to external or internal pressures that threaten the organization’s long-term survival” (p. 94). Certain decisions/strategies need to be adopted to change the state of decline in the organization. Such decisions/strategies are known as turnaround strategies. These strategies impact the current state of the organization either positively or negatively. The right turnaround strategy should be chosen to ensure a positive impact. To determine the correct turnaround strategy, the external and internal factors that cause the organization’s current state need to be analyzed to apply corrective action that leads to a successful turnaround. Figure 1 depicts the theoretical framework used for this study.

Several studies claim various reasons for the organizational decline (Trahms et al., 2013). Broadly, these reasons can be classified as either external or internal (Panicker & Manimala, 2015). The top turnaround strategies are strategic or operational (Trahms et al., 2013). The strategy can be modified based on feedback from the turnaround outcome. Based on this explanation, the conceptual model for this study is displayed in Figure 2. Figure 2 shows that the context is large, declining, high-technology organizations; the intervention would be the factors influencing the selection of turnaround strategies. The mechanism would select the appropriate turnaround strategy based on context, and the outcome indicates whether the strategy succeeded or failed.
3. Methodology

This study is exploratory; hence, an evidence-based, qualitative, configurative review approach and thematic synthesis will be used, as Gough et al. (2012) suggested. Of the many evidence-based methodologies, the Rapid Evidence Assessment (REA) methodology was chosen to answer this review question. The REA takes between 4-8 weeks and provides high-quality evidence, making it a more viable choice to provide rapid evidence (Moons et al., 2021). A company facing a decline needs to make quick decisions, and the REA facilitates making quick decisions based on evidence.

3.1 Search Strategy

A structured search strategy was implemented, as suggested by Gough et al. (2017). The inclusion/exclusion criteria for this study were peer-reviewed, primary research and empirical studies published in scholarly journals in English from 2000 to 2022, focused on the high-tech industry, with the organization being the unit of analysis. Bustin and Nolan (2016) suggest that peer-reviewed, scholarly journals have high transparency and reliability. The studies from 2000-2022 will be used since the trade openness index crossed 50% in 2000 and has been between 50-60% since then, indicating a period of stable trade openness that impacts high-tech export/import and, therefore, impacts the success of high-tech organizations (Douglas, 2020).

The search query was based on search strings designed using the CIMO framework, as Table 1 shows. The databases used for the search were Business Source Ultimate, ScienceDirect, Directory of Open Access, Academic Search Ultimate, APA PsycInfo, Emerald Insight, ABI/Inform, JSTOR, Scopus, and Google Scholar. The results of the search are displayed in Table 2, along with the methodology of the study and the geography of the study.

The search strategy is documented with a PRISMA, as shown in Figure 3. PRISMA was chosen since it is an evidence-based method of reporting study selection to avoid publication bias (Brooks & McNeeley, 2013). A total of 674 articles were retrieved after searching all databases. After deduplicating and applying the exclusion criteria, 20 articles were finally chosen for critical appraisal.
### Table 2: Search Databases and Result Classification

<table>
<thead>
<tr>
<th>Databases</th>
<th>Number of Results</th>
<th>Article found</th>
<th>Article Type</th>
<th>Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Source Ultimate</td>
<td>54</td>
<td>(TenBrink et al., 2017)</td>
<td>Quantitative</td>
<td>USA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Roy &amp; Bhattacharya, 2011)</td>
<td>Qualitative</td>
<td>India</td>
</tr>
<tr>
<td>Science Direct</td>
<td>7</td>
<td>(Tangpong et al., 2021)</td>
<td>Qualitative</td>
<td>USA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Gowen III &amp; Tallon, 2002)</td>
<td>Quantitative</td>
<td>USA + Japan</td>
</tr>
<tr>
<td>Directory of Open Access Journals</td>
<td>4</td>
<td></td>
<td>Quantitative</td>
<td>USA</td>
</tr>
<tr>
<td>Academic Search Ultimate</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APA PsycInfo</td>
<td>9</td>
<td>(Walters-Malcolm, 2007)</td>
<td>Quantitative</td>
<td>USA</td>
</tr>
<tr>
<td>Emerald Insight</td>
<td>4</td>
<td>(TenBrink et al., 2018)</td>
<td>Qualitative</td>
<td>USA</td>
</tr>
<tr>
<td>Scopus</td>
<td>2036</td>
<td>(Vikas, 2015)</td>
<td>Qualitative</td>
<td>India, USA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Shahri &amp; Sarvestani, 2020)</td>
<td>Qualitative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Abraham &amp; Kumar, 2020)</td>
<td>Qualitative</td>
<td></td>
</tr>
<tr>
<td>ABI/INFORM</td>
<td>1508</td>
<td>(Gupta &amp; Wang, 2004)</td>
<td>Qualitative</td>
<td>China</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Kailasam &amp; Wongsurawat, 2016)</td>
<td>Quantitative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Patnaik, 2014)</td>
<td>Qualitative</td>
<td>USA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Oliver, 2020)</td>
<td>Qualitative</td>
<td>USA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(O’Kane &amp; Cunningham, 2014)</td>
<td>Qualitative</td>
<td>USA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Pai, 2015)</td>
<td>Qualitative</td>
<td>Ireland</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Alhassan &amp; Isha, 2014)</td>
<td>Qualitative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Balgobin &amp; Pandit, 2001)</td>
<td>Quantitative</td>
<td></td>
</tr>
<tr>
<td>JSTOR</td>
<td>319</td>
<td>(Kaplan &amp; Orlikowski, 2013)</td>
<td>Qualitative</td>
<td>USA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Smith, 2014)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backward snowball on (O’Kane &amp; Cunningham, 2014)</td>
<td>20</td>
<td>Ndofor et al. (2013)</td>
<td>Qualitative</td>
<td>USA</td>
</tr>
</tbody>
</table>
Figure 3: PRISMA for search strategy

Identification of new studies via databases and registers

Records identified from:
- Databases (n = 9):
  - Business Source Ultimate (n = 54)
  - Science Direct (n = 7)
  - DOAJ (n = 4)
  - Academic Search Ultimate (n = 17)
  - APA PsycInfo (n = 9)
  - Emerald Insight (n = 4)
  - Scopus (n = 616)
  - JSTOR (n = 319)
  - ABI Inform (n = 1,508)
- Citation searching (n = 20)
- Registers (n = 0)

Inclusion criteria
a. Between 2000-2023
b. Scholarly Journal
b. English

Records removed before screening:
- Duplicate records (n = 412)
- Records marked as ineligible by automation tools (n = 1,472)
- Records removed for other reasons (n = 0)

Marked as ineligible if “Subject” is NOT Business Management OR Turnaround management

Reports excluded using title screening, abstract screening and full text screening
- Not high-tech industry, 261
- Not large firms, 129
- Not focused on turnarounds, 278
- Unit of analysis is a business unit and not organization, 5

Records screened (n = 674)

Records excluded (n = 653)

Reports sought for retrieval (n = 21)

Reports not retrieved (n = 1)

Reports assessed for eligibility (n = 20)

Reports excluded:
- Low appraisal score (n = 6)
  - None (n = 0)

New studies included in review (n = 14)
Reports of new included studies (n = 0)
3.2 Critical appraisal

Critical appraisal of the studies is a crucial step since Kepes et al. (2014) suggest that the trustworthiness of the evidence should be established to get meaningful results. Multiple tools can be used to appraise a study critically. Many appraisal tools such as TAPUPAS (Pawson et al., 2003), TAPUPASM (Ryan & Rutty, 2019), MMAT (Hong et al., 2018), MMAT variation (Munro et al., 2021), JBI (Munn et al., 2020), CASP (Long et al., 2020), QATSSD (Fenton et al., 2015) were evaluated. The MMAT variation tool and weighted TAPUPASM tool scored high. Hence, both tools were combined to evaluate each of the 20 articles.

The combined MMAT+TAPUPASM framework assigned a scale of three for each criterion, with the highest possible score being 39 and the lowest possible score being zero. Any article with a score of 20 and above was selected for the study. A total of 14 articles were selected based on this selection criterion. The list of appraisal scores for each of the 20 articles is displayed in Table 3.

Three of the studies were randomly assessed for inter-rate reliability (IRR). The IRR scores for each article by each of the reviewers were within a 10% difference. A fully crossed design for inter-rate reliability was executed, eliminating systematic bias within the appraisal process and increasing the study’s internal validity (Hallgren, 2012).

3.3 Data Extraction

A table featuring the author, title, sample description, methodology, hypothesis, primary findings, and limitations of each study selected using the appraisal process was formed. This data extraction process minimizes bias and assesses the studies for the relevance of the sample (Munn et al., 2014). After data extraction, a data descriptor describing the data set was constructed, as shown in Table 4, to make the data open, discoverable, and transparent (Hrynaszkiewicz, 2014).

Out of the 14 articles selected, all had samples from publicly traded companies, with 11 articles from the USA and one from India, China, and Europe. Though the articles are spread geographically between the USA, India, China, and Europe, it was decided to keep them since all four countries display similar openness to trading and have similar economic growth rates (Marelli & Signorelli, 2022). Ten of the articles were published between 2010-2022, and four of them during 2000 – 2010. The articles had a good mix of successful and failed turnarounds, ensuring that survivorship bias does not affect the results of this study (Dirk, 2021).

3.4 Coding

The inductive coding method was used to code the articles since the study is exploratory. Skjott and Korsgaard (2019) suggested that inductive coding is best applied to exploratory studies. Five cycles of coding using a combined coding approach were executed on the findings, case study details, and the discussion section of each article, as shown in Figure 4.

The combined coding approach consisted of bottom-up and top-down coding techniques, reducing confirmatory bias (Blair, 2015). Atlas.ti, a computer-assisted qualitative data analysis software (CAQDAS), was used to code the data since inductive coding generates a lot of code (Skjott & Korsgaard, 2019).
Table 3: Appraisal Results

<table>
<thead>
<tr>
<th>Scholarly Article</th>
<th>MMAT variation score (Max score: 20)</th>
<th>Weighted TAPUPASM score (Max score: 19)</th>
<th>Total Score (Max:39)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(TenBrink et al., 2017)</td>
<td>13</td>
<td>9</td>
<td>22</td>
</tr>
<tr>
<td>(Roy &amp; Bhattacharya, 2011)</td>
<td>12</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>(Tangpong et al., 2021)</td>
<td>18</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>(Gowen III &amp; Tallon, 2002)</td>
<td>17</td>
<td>16</td>
<td>33</td>
</tr>
<tr>
<td>(Vikas, 2015)</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>(Gupta &amp; Wang, 2004)</td>
<td>17</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>(Kailasam &amp; Wongsurawat, 2016)</td>
<td>10</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>(Patnaik, 2014)</td>
<td>13</td>
<td>11</td>
<td>24</td>
</tr>
<tr>
<td>(Kaplan &amp; Orlikowski, 2013)</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>(Smith, 2014)</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>(Walters-Malcolm, 2007)</td>
<td>13</td>
<td>12</td>
<td>30</td>
</tr>
<tr>
<td>(TenBrink et al., 2018)</td>
<td>13</td>
<td>9</td>
<td>22</td>
</tr>
<tr>
<td>(Shahri &amp; Sarvestani, 2020)</td>
<td>19</td>
<td>14</td>
<td>33</td>
</tr>
<tr>
<td>(Abraham &amp; Kumar, 2020)</td>
<td>17</td>
<td>11</td>
<td>28</td>
</tr>
<tr>
<td>(Oliver, 2020)</td>
<td>13</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>(O’Kane &amp; Cunningham, 2014)</td>
<td>20</td>
<td>16</td>
<td>36</td>
</tr>
<tr>
<td>(Alhassan &amp; Isha, 2014)</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>(Balgobin &amp; Pandit, 2001)</td>
<td>19</td>
<td>17</td>
<td>36</td>
</tr>
<tr>
<td>Ndofor et al. (2013)</td>
<td>19</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td>(Pai, 2015)</td>
<td>14</td>
<td>15</td>
<td>29</td>
</tr>
</tbody>
</table>

Figure 4: Combined coding technique

1st level
- Line by line inductive coding (emergent coding)
- 256 codes bottom-up codes

2nd level
- Axial coding
- 96 codes -> 11 categories

3rd level
- Focused top-down context coding
- Three code groups

4th level
- Research question focused coding
- Color coding - positive and negative turnaround attempts

5th level
- Selective coding
- Three themes
Table 4: Data Set Descriptor

<table>
<thead>
<tr>
<th>Descriptor</th>
<th>Sub-Descriptor</th>
<th>Article Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Reader Population</td>
<td>Turnaround Practitioners, Organizational management professionals, Academicians</td>
<td></td>
</tr>
<tr>
<td>Number of Articles</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Year of publication</td>
<td>2000-2010</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>2011-2022</td>
<td>10</td>
</tr>
<tr>
<td>Research Design</td>
<td>Qualitative</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Quantitative</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Mixed-Methods</td>
<td>0</td>
</tr>
<tr>
<td>Sample distribution</td>
<td>USA publicly traded</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>India publicly traded</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>China publicly traded</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>UK, publicly organization</td>
<td>1</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Successful turnaround</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Failed turnaround</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Successful and failed turnaround</td>
<td>6</td>
</tr>
</tbody>
</table>

The initial round of coding with Atlas.ti generated 256 codes. The second level of coding used 256 codes and further condensed them to 96 codes using axial coding. The 96 codes were categorized into 11 categories – environment scanning, decision-making, external relationships, innovation, marketing/sales, operationalization process, restructuring, retrenchment, stakeholder, and organization management. This categorization identified stakeholders, innovation, retrenchment, organization top management team, and marketing/sales as the top five areas impacting turnarounds. In the third level of coding, the 96 codes from coding level two were assigned code groups based on the context of the code. The fourth and fifth levels of coding helped to answer the research question better and to establish the thematic codes that emerged from the prior rounds of coding. Table 5 shows each category and the categories that formed each theme. A thematic synthesis of the codes extracted indicated that strategic, operations and stakeholder management are key factors to consider when selecting turnaround strategies.

Table 5: Categories and Themes

<table>
<thead>
<tr>
<th>Categories</th>
<th>Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Decision making</td>
<td>Organizational Strategic Management</td>
</tr>
<tr>
<td>2. Environment scanning</td>
<td></td>
</tr>
<tr>
<td>3. External relationships</td>
<td></td>
</tr>
<tr>
<td>4. Innovation</td>
<td>Organizational Operations Management</td>
</tr>
<tr>
<td>5. Marketing/Sales</td>
<td></td>
</tr>
<tr>
<td>6. Operationalization process</td>
<td></td>
</tr>
<tr>
<td>7. Restructuring</td>
<td></td>
</tr>
<tr>
<td>8. Retrenchment</td>
<td></td>
</tr>
<tr>
<td>9. Stakeholder</td>
<td>Organizational Stakeholder management</td>
</tr>
<tr>
<td>10. Organization management concerns</td>
<td></td>
</tr>
<tr>
<td>11. Culture</td>
<td></td>
</tr>
</tbody>
</table>
4. Findings
This study attempted to find the factors that should be considered while selecting turnaround strategies for declining, large, high-tech organizations. The study provided both practical and theoretical findings, as specified below. Each of the findings was assessed using CERQual (Confidence in Evidence from Reviews of Qualitative methods) to increase the confidence and transparency of this review. Lewin et al. (2018) suggest that CERQual is an evidence-to-decision framework that is structured and provides transparency to the qualitative review.

CERQual uses four criteria to determine the level of confidence that can be placed in the findings of a qualitative synthesis - methodological limitations, coherence, adequacy of data, and relevance (Lewin et al., 2018). A summary of the qualitative findings table with the CERQual assessment for each finding and the list of articles that supported the findings was prepared. All findings presented across ten or more good-quality articles were deemed as high confidence, seven or more good-quality articles were deemed as moderate confidence, and the rest were deemed as low-confidence findings.

The review question was: *What factors should determine the selection of turnaround strategies in declining, large, high-technology firms?* The commonly known factors used to determine the selection of turnaround strategies are the situational variables that Hofer (1975) defined as the current environment, market, supplier issues, and competitors. For this study, the firm size and industry were maintained as constants to explore the other factors that should determine the selection of turnaround strategies. This exposed the next layer of complexity where when the context is a constant, organizations can still decline due to 1. mismanagement of strategy, 2. mismanagement of operations, and 3. mismanagement of stakeholders in the event of either an externally triggered or internally triggered crisis.

The study's findings indicated that the selection of the turnaround strategy should be based on whether the crisis is externally or internally triggered and should consider mismanagement in the areas of strategy, operations, and stakeholders as factors while formulating the turnaround strategy. The fundamental causes of externally triggered high-tech industry crises were globalization, recession, increased competition, and political/currency fluctuations. The fundamental causes for the internally triggered crises were a lack of innovation, quality, and centralized decision-making. These findings answer the review question.

**Finding 1 - Strategic, operations, and stakeholder management are critical factors in determining organizational turnaround strategies.**

Of the 14 studies that were reviewed, most of the studies indicated that remediation of strategic management (12 studies - High CERQual confidence), operations management (14 studies - High CERQual confidence), and stakeholder management (13 articles - High CERQual confidence) are critical factors in determining organizational turnaround strategies. This indicated that organizations used a mix of strategic, operations, and stakeholder remediation in times of crisis for successful turnarounds. For each area, the strategy selected during a successful or failed turnaround during an external or internal crisis was examined to get more practical insights.

**4.1 Strategic Management**
1. During an external crisis, aligning the strategy of the organization with the environment and pursuing new sales markets/industries that have not been impacted by the external crisis have been critical factors in determining a successful turnaround. This finding has been corroborated by five out of 14 articles (low CERQual confidence). Lack of managerial cognition and customer focus led to a higher chance of failed turnarounds. This finding was corroborated by five out of 14 articles (low CERQual confidence).

The research indicated that the three critical strategic management remediation actions for successful turnarounds were changing customer plans and offerings to adapt to the customer’s business models, entering new sales markets, and decentralizing decision-making. Kailasam and Wongsurawat (2016), Patnaik (2014), and TenBrink et al. (2018) argue that changing plans and offerings to keep in line with the changing business models of customers was required to align the organization with the external environment and ride through the external crisis. Balgobin and Pandit (2001), Kailasam and Wongsurawat (2016), and Patnaik (2014) indicated that strategic decisions to seek new sales markets in regions or domains that have not been affected by the external crisis caused due to either changing customer business models or competition was also a crucial step to successful turnarounds. All five articles supporting this finding agreed that decentralized decision-making was necessary to sense the external environment better and respond quickly to changes. However, Kailasam and Wongsurawat (2016) indicated that centralizing functions within the
organizations worked toward a positive turnaround since the aggressive expansion of an organization requires that all functions work together to facilitate the quick implementation of decisions.

2. During an internal crisis, strategies that involve decentralizing decision-making within the organization and engaging in external relationships such as acquisitions/mergers/joint ventures have proved beneficial. This finding has been corroborated by 12 out of 14 articles (high CERQual confidence). Lack of environmental scanning and aggressive expansion have led to a greater possibility of failed turnarounds. This finding has been corroborated by five out of 14 articles (low CERQual confidence).

The research suggests that during an internal crisis, the best remediation actions for strategic management are engaging in external relationships and decentralizing decision-making. Though 12 articles suggest that external relationships such as acquisitions/mergers/joint ventures caused an inflow of knowledge, expertise, energy, and resources into the organization, which helped the organization manage the internal crisis, aggressive expansion should be exercised with caution. Gupta and Wang (2004) argued that aggressive expansion coupled with decentralization causes an issue of autonomy where each unit is separated from the organization's vision and goals, causing a decline within the organization.

Decentralization of units within the organization was considered beneficial when it was not coupled with aggressive expansion. In addition to decentralization, Pai (2015) and TenBrink et al. (2018) suggested that delayering of the organization is also beneficial since it facilitates quick feedback and communication and increases the speed of adaptation to changes. Roy and Bhattacharya (2011) indicated that using data and metrics to track the decentralized units' progress ensured better planning and forecasting. Oliver (2020) and Pai (2015) indicate that a lack of environmental scanning to determine the changing needs of the market contributes to failed turnarounds. However, this lack of scanning is remediated by delaying and decentralization, which increase the organization's sensing capacity and improve market responsiveness (Balgobin & Pandit, 2001; TenBrink et al., 2017).

4.2 Operations Management
1. During an external crisis, focus on innovation, increased R&D spending, and increased sales/marketing have resulted in successful turnarounds. Six out of 14 articles corroborated this finding (moderate CERQual confidence). Physical retrenchment has led to the risk of failed turnarounds. Two out of 14 articles corroborated this finding (low CERQual confidence).

This research indicates that operations should increase R&D and sales/marketing to overcome an external crisis. In terms of R&D, Gupta and Wang (2004) and Patnaik (2014) suggest that focus should be given to customer-driven R&D, which can be commercialized, and Kailasam and Wongsurawat (2016) suggest that focus should be on innovation that helps to lower customer costs. However, Kailasam and Wongsurawat (2016) indicate that care should be taken to ensure that substantial R&D investments are not made on small opportunities, which could lead to failed turnarounds. In terms of sales/marketing, increasing sales staff and participation in global events to increase visibility was deemed beneficial by Balgobin and Pandit (2001) and Kailasam and Wongsurawat (2016). However, Gowen III & Tallon (2002) and Walters-Malcolm (2007) suggest that increased operations costs due to slack resources can be detrimental to turnarounds. Hence, organizations should ensure capacity utilization of sales/marketing and R&D before increasing expenses.

2. During an internal crisis, retrenchment, restructuring, new product introduction, quality, and process focus have been the strategies that influenced successful turnarounds. This finding has been corroborated by 10 out of 14 articles (high CERQual confidence). Lack of innovation has resulted in failed turnarounds. This finding has been corroborated by eight out of 14 articles (moderate CERQual confidence).

4.3 Stakeholder Management

1. During an external crisis, managerial cognition of the crisis and the flexibility to change to adapt to the current market was the key strategy. This finding has been corroborated by nine out of 14 articles (moderate CERQual confidence). Lack of managerial cognition and customer focus has led to a higher chance of failed turnarounds. This finding has been corroborated by five out of 14 articles (moderate CERQual confidence).

Managerial cognition of the external crisis includes scanning all the stakeholders to determine the competitive environment, formulate strategies that orient towards the external environment, and perceive the potential uses of an organization’s resources to respond to an environmental change (Noman et al., 2020). The research indicates that high managerial cognition helped the organization perceive changes faster and reconfigure faster to achieve successful turnarounds. Gupta and Wang (2004), Oliver (2020), Pai (2015), TenBrink et al. (2018), and Balgobin and Pandit (2011) indicate that a lack of managerial cognition, resulting in a lack of attention to stakeholders leads to failed turnarounds.

2. During an internal crisis, managerial cognition of the crisis, along with employee incentives, customer focus, and communication with all stakeholders, led to successful turnarounds. This finding has been corroborated by 12 out of 14 articles (high CERQual confidence). Seven out of 14 articles indicate that lacking these strategies results in failed turnarounds (moderate CERQual confidence).

Stakeholders consist of both internal and external stakeholders. During an internal crisis, Abraham and Kumar (2020), Gowen III and Tallon (2002), Gupta and Wang (2004), and Patnaik (2014) indicate that employee incentives motivate employees to facilitate successful turnarounds. Abraham and Kumar (2020), Balgobin and Pandit (2001), Gupta and Wang (2004), Kailasam and Wongsurawat (2016), Oliver (2020), and Patnaik (2014) indicate that increased customer focus with amplified communication across all stakeholders was vital to successful turnarounds during an internal crisis.

Changing the top management team during an internally triggered crisis showed positive effects, but changing TMT during an externally triggered crisis showed adverse effects. A possible explanation for the differing effects of changing TMT is that if the crisis is internal, the leadership team has a part in creating the crisis, and so a change is needed; however, during an external crisis, the existing TMT has better know-how of the organization and may possess the capability to ride the external crisis.

4.4 Revised conceptual framework.

The conceptual framework was revised to include the results of the findings. The reasons for the external and internal decline were identified, along with the intervention areas and the mechanism of selecting a turnaround strategy for each intervention area. Figure 5 shows the revised conceptual framework. The revisions to the conceptual framework are highlighted in italics. Stakeholder management was an additional intervention technique added to the framework, and the mechanism for each intervention was identified. After the intervention, a feedback loop is established to ensure the expected outcome is obtained.
5. Discussions
This research identified that organizations could decline due to external or internal factors. Irrespective of the type of factor causing decline, organizations can still re-organize to balance the adverse effects. The key areas they need to re-organize would be strategy, operations, and stakeholder management.

During an internal or external crisis, managerial cognition of the crisis was the first essential action to identifying whether strategic or operational management changes are needed. Noman et al. (2020) suggest that managerial cognition is achieved by environment scanning, and Mendelow (1981) suggests that environment scanning constitutes the scanning of stakeholders. Since the organization's different stakeholders instruct managerial cognition, stakeholder management is a critical factor in determining the selection of turnaround strategies.

During an external crisis, the key stakeholder to focus on was the customer. Changes to the customer’s business model, current competition, supplier availability, and government regulations should be perceived early by the organization. Failure to perceive these changes eventually leads to decline. Once the changes are perceived, the organization should be able to adapt quickly. Strategic adaptability in terms of decisions to adapt to a customer’s business model, decisions to change the product’s cost structure, and decisions to enter new sales markets unaffected by a crisis are critical.
In addition to the strategic decisions, the selection of decentralization as a turnaround strategy also facilitates successful turnarounds since, with decentralization, it was easier to perceive customer changes in requirements and competition in each region and adapt quickly to the changes. However, decentralization without monitoring each decentralized unit to assess for performance and alignment with the organization led to chaos. This finding aligns with (Andersson et al., 2019; Tavakolian, 1989), which indicated that decentralization with monitoring for alignment is needed to improve organizational performance.

Operational adaptability in terms of customer-focused innovation, commercializing R&D, and increasing sales and marketing to compete in different markets resulted in successful turnarounds. It is critical to note here that customer-focused innovation and commercialized R&D are facilitated by decentralization. This finding aligns with the findings of Lee et al. (2016) and Siggelkow and Levinthal (2003). Both strategic and operational adaptabilities can only be selected if there is cognition of the crisis and if the organization’s stakeholders - employees, shareholders, customers, and lenders are flexible to change.

Abraham and Kumar (2020) indicated that aggressive market expansion without expansion of operations and decentralization leads to crises within the organization. During an internal crisis, the key stakeholder to focus on was the internal organization – employees. Diffusion of knowledge to employees through external relationships in the form of acquisitions/mergers/joint ventures to encourage innovation and decentralization coupled with delayering was the critical strategic turnaround strategy. Decentralization may also be a suggested turnaround technique since the context for this research is a large organization. Decentralization in small organizations may not be required due to the size of the organization, but in a larger organization, it helps to manage different sections of the organization effectively.

Delayering caused retrenchment and restructuring, which were vital operational strategies to facilitate successful turnarounds. In terms of operations management, retrenchment, which is a strategy primarily associated with turnarounds, works well only if the crisis is internally triggered. If the crisis is externally triggered, increasing the budget for sales/marketing and aligning strategy with the environment by providing customer-focused innovation is the key to successful turnarounds. This indicates that retrenchment is not a cookie-cutter approach that can be applied in all situations. Also, employee incentives and stakeholder communication significantly influenced successful turnarounds in case of an internal crisis mainly because retrenchment and restructuring are key strategies that are selected during an internal crisis, and both these strategies tend to demotivate employees and break stakeholder trust (Duncan et al., 2013; Wandera, 2013). Amplified communication along with employee incentives, therefore, helps to raise morale among the stakeholders, thereby influencing successful turnarounds.

5.1 Theoretical implications
The existing knowledge on turnarounds strategies indicates that only strategic and operational interventions are needed to facilitate turnarounds (Arogyaswamy et al., 1995; Bhattacharyya & Malik, 2020; Robbins & Pearce, 1992; Trahms et al., 2013). This study extends the current knowledge by indicating that it is critical to consider stakeholder management to drive a better chance of successful turnarounds in addition to business strategy management and operational management. Lack of stakeholder management with the presence of strategic and operational management decreases the possibility of a successful turnaround.

5.2 Practical implications
Four practical recommendations are suggested based on the evidence presented by this study. These recommendations provide practical guidance to C-suite leaders, turnaround specialists, and other organizational stakeholders.

The first recommendation is that organizations focus on stakeholder management during turnaround situations. The organization’s stakeholders are the employees, customers, government, lenders, suppliers, shareholders, society, and competitors (Mendelow, 1981). To manage the stakeholders, organizations facing decline should create a scanning committee that periodically scans the stakeholders to identify potential issues. The scanning can be through surveys, focus meetings, or market research. The scanning committee should be responsible for providing three quarterly reports to the C-suite along with a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis that encompasses all the below three reports.

a. PESTLE report on the external environment (Nandonde, 2019)
b. An analysis of competition using Porter’s five forces model (Goyal, 2020)
c. An analysis of the organization’s internal stakeholders.
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Based on the SWOT analysis received the C-suite and the organization’s board of directors should ensure that turnaround strategies that negate the threats strengthen the weaknesses and capitalize on the opportunities by aligning the organization with the stakeholders are chosen.

The awareness of external and internal winds helps with organizational cognition of the situation, which is the first key factor in determining successful turnarounds. Organizations that do not identify and resolve threats from the external or internal environment are prone to chronic failure (Oliver, 2020)

The second recommendation is that organizations select strategic turnaround strategies that align organizational goals with external stakeholders. If the external stakeholders (customers, government, lenders, suppliers, society) are triggering the crisis, the focus should be to align the organization with the external stakeholders. If a change in the customer business model triggers the crisis, decisions to adapt to the changing business model will help. If a societal change in technology usage triggers a crisis, the organization should adopt decisions that adapt to the technology usage changes. If government regulations or political unrest is causing the crisis, the organization should decide to enter different geographic sales markets unaffected by the crisis. If lenders/high-interest rates are causing the crisis, the organization should hold any cost that involves further borrowing. If suppliers are causing the crisis, the organization should move to high-quality suppliers at different geographic locations.

The third recommendation is to select operational turnaround strategies aligning organizational goals with the internal stakeholders. If the internal stakeholders (employees, shareholders) are triggering the crisis, the focus should be to align the organization with the internal stakeholders. Yang and Hsu (2010) indicate that organizational process alignment is positively associated with an adaptability culture that emphasizes responsiveness and flexibility, facilitating organizational innovation. If the crisis is due to the lack of innovation, then the organization should engage in external relationships to bring new knowledge flow into the organization. Organizations should consider changing the current quality processes if the crisis is due to quality issues. Offer incentives to employees if employee morale is the issue. A strategy of decentralization by restructuring and delayering the organization to eliminate middle personnel should be adopted if the crisis is due to organizational inertia caused by centralized decision-making. Use the retrenchment strategy if the crisis is due to too many unutilized slack resources.

The fourth recommendation is for a change management team to be put in place to communicate and implement the decision changes that align the organization with the external and internal stakeholders. This team will be responsible for amplified communication within the organization and will gather feedback from the internal organization.

The change management team should be aligned with other teams within the organization to facilitate the execution of the turnaround strategy. Leaders in the change management team should communicate with the business unit leaders across the organization to drive changes in different business units as required. Knowledge-sharing processes to disseminate existing knowledge should exist. Monitoring, reporting, and feedback processes to report, monitor, and provide feedback on the progress of the execution of the turnaround strategies should be present.

5.3 Limitations and Future Research Areas

The rapid evidence assessment methodology used for this study may have resulted in the need for more articles. Multiple databases were queried with different search strings to increase the depth of the study. The empirical studies chosen for this study were from the high-tech industry, with most studies using the case-study methodology. Since the high-tech industry operates with different dynamics than other industries, the evidence obtained by this study is not generalizable to other industries. Even though we have the limitations above, the study will serve as a good indicator of the factors that influence the selection of a successful turnaround strategy in the high-tech industry, thereby filling the research gap that we see in turnaround strategies in high-tech industries.

The study indicated a need for quantitative articles exploring turnaround strategies in large, high-tech organizations over the past five years when there has been massive technology growth due to remote working arrangements triggered by the COVID-19 pandemic (De’ et al., 2020). More quantitative articles on turnaround strategies can be an area of future research that can help corroborate the results of this study.
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