

## The Impact of Organizational Ambidexterity on Strategic Performance in Technology-Intensive Firms

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### Abstract

**Background:** Organizational Ambidexterity (OA) is defined as a firm's capability to exploit efficiencies and explore new opportunities concurrently. This capability is critical for long-term performance. This study will consider the effect of OA, and OA's dimensions of exploitation and exploration, on strategic performance in technology-intensive firms from the Arabian Gulf (GCC) region.

**Methods:** This study utilized a descriptive-analytical approach. The study population comprised of 35 high technology firms listed on GCC stock exchanges in 2023. A survey was sent to senior and middle managers of the firms and received a total of 410 valid responses. The data were analyzed by descriptive statistics and multiple linear regression (MLR) using SPSS to test the hypotheses

**Results:** The results show a powerful, positive, and statistically significant influence of overall organizational ambidexterity on strategic performance ( $R^2 = .563$ ), meaning that 56.3% of the variance on performance is attributable to OA. While both exploitation ( $t=9.263$ ,  $p=.000$ ) and exploration ( $t=9.583$ ,  $p=.000$ ) were significant individual predictors, an important nuance became evident: while firms evidenced a preference for exploitation activities in the descriptive data, the regression model revealed exploration to have a slightly stronger relative influence on strategic performance ( $\beta = .510$  compared to exploitation,  $\beta = .480$ ).

**Conclusion:** Organizational ambidexterity is an important source of strategic performance in the GCC's technology sector. However, the study suggests that there may be a potential strategic imbalance whereby firms lean too heavily toward operational

exploitation, and don't practice exploration to the extent that exploitation is practised, despite its greater strategic value. In order to sustainably create a competitive advantage for their firms and support broader regional economic diversification goals, organizations not only need to be ambidextrous, but they need to strategically think about the balance of their activities and concentrate more on exploration, and actively encourage and reward exploration to realize their full performance potential.

**Keywords:** Organizational Ambidexterity, Exploitation, Exploration, Strategic Performance, Technology Firms, Arabian Gulf Region, GCC Financial Markets.

## 1. Introduction

As the global landscape of business is rapidly evolving and becoming increasingly competitive, the ability for firms to achieve and maintain superior strategic performance is a key challenge for academics and practitioners alike. This challenge is particularly relevant to acquiring higher performance in a rapidly developing economic area like the Arabian Gulf region where governments are promoting and investing in diversification and knowledge-based economies. Focusing solely on executing and capitalizing on current operations or only introducing radical innovation recommence the level of difficulty in dynamic markets (Tushman & O'Reilly, 1996). As a result, the idea of Organizational Ambidexterity (OA) has come to symbolize a critical framework, positing that long-term success depends on an organization's ability to be simultaneously good at two different, and apparently contradictory, activities: exploitation (developing existing capabilities, improving efficiency, and servicing old markets) and exploration (searching for new opportunities, developing radical innovation, and operating in new markets) (March, 1991; Raisch & Birkinshaw, 2008). Technology-intensive firms, which have become increasingly important in the economic transformation agendas of the Arabian Gulf, operate in fast-moving environments characterized by rapid technology adoption, constantly evolving consumer and societal demands, and increasingly intense competition founded on innovation, such that ambidexterity is not merely a valuable capability, but also often a condition of survival and growth (Benner & Tushman, 2003). The purpose of this study is to empirically examine the relationship existing between organizational ambidexterity and strategic performance in this very important industrial sector and geographic context.

### 1.2 Importance of the Study

The implications of this study arise from its emphasis on an important current organizational capability- ambidexterity - and that its direct relationship to strategic performance is of vital concern by all firms, especially firms establishing in the growing and diversifying economies of the Arabian Gulf region. By investigating technology intensive firms in this region, we study an opportunity in which there is a clear necessity

to balance today's efficiency with tomorrow's discovery in an often-facilitated environment where national visions support technology driven capabilities to build a diverse economy and move away from operational efficiencies. The results can provide valuable insights to managers and strategic leaders of these organizations in the Arabian Gulf region of the opportunities for developing ambidextrous capabilities that can improve their wealth performance, market share, and innovation performance. Additionally, this research can contribute to the international academic discourse around organizational theory and strategic management by exhibiting empirical evidence of the ambidexterity-performance relationship from the experience of a non-Western, developing region, possibly unearthing specific characteristics of technology intensive work in another set of institutional and cultural contexts present in the Arabian Gulf region. Understanding the relative importance of exploratory ambidexterity and exploitative ambidexterity can aid resource allocation decisions and ultimately the relative priorities of these firms.

### **1.3 Objectives of the Study**

The principal aim of this study is to examine the influence of organizational ambidexterity on the strategic performance of technology-intensive firms in the relevant context of the Arabian Gulf region. Specifically, the study will:

- Determine the overall impact of organizational ambidexterity on strategic performance in Arabian Gulf technology-intensive firms.
- Identify the impact of exploitation ambidexterity on strategic performance in Arabian Gulf technology-intensive firms.
- Identify the impact of exploration ambidexterity on strategic performance in Arabian Gulf technology-intensive firms.
- Collect data regarding the perceived levels of organizational ambidexterity (and its dimensions) in the context of Arabian Gulf technology-intensive firms.
- Provide practical recommendations to managers in Arabian Gulf technology-intensive firms for improving strategic performance based on their ambidextrous capacities.

### **1.4 Problem of the Study and its Questions**

The issue confronting the study is identifying the impact of organizational ambidexterity on strategic performance under the demanding nature of technology-

intensive firms from the Arabian Gulf region. While there is a wealth of theoretical arguments proposing a positive association (O'Reilly & Tushman, 2013), the actual evidence, particularly addressing the direct and interactional relationships of exploitation and exploration in a particular regional and sectoral context, needs more attention. The overarching research question is:

- What is the impact of organizational ambidexterity on the strategic performance of technology-intensive firms from the Arabian Gulf region?

This primary question gives rise to the following sub-questions:

- a. What is the impact of exploitation ambidexterity on the strategic performance of technology-intensive firms from the Arabian Gulf region?
- b. What is the impact of exploration ambidexterity on the strategic performance of technology-intensive firms from the Arabian Gulf region?
- c. How much do technology-intensive firms from the Arabian Gulf region perceive themselves as showing organizational ambidexterity (exploitation and exploration)?

### 1.5 Hypotheses of the Study

Based on the research problem and objectives, the following null hypotheses were formulated:

**Main Hypothesis (H0):** There is no statistically significant impact at the ( $\alpha \leq 0.05$ ) level of organizational ambidexterity (exploitation and exploration combined) on strategic performance in technology-intensive firms **in the Arabian Gulf region**. This main hypothesis branches into the following sub-hypotheses:  
**H01:** There is no statistically significant impact at the ( $\alpha \leq 0.05$ ) level of exploitation ambidexterity on strategic performance in technology-intensive firms **in the Arabian Gulf region**.  
**H02:** There is no statistically significant impact at the ( $\alpha \leq 0.05$ ) level of exploration ambidexterity on strategic performance in technology-intensive firms **in the Arabian Gulf region**.

### 1.6 Model of the Study

The study variables include the independent variable (Organizational Ambidexterity) with its dimensions: Exploitation Ambidexterity and Exploration Ambidexterity. The dependent variable is Strategic Performance (which can be further

dimensionalized for measurement, e.g., financial, market, innovation performance). The following figure illustrates the relationship between the variables through the study model.

## **2 Theoretical Framework**

**2.1 Organizational Ambidexterity (OA):** Organizational ambidexterity (OA) denotes a firm's dynamic capability to pursue simultaneously two distinctly different often mutable types of activities: exploitation and exploration (March, 1991; Tushman & O'Reilly, 1996). Exploitation refers to activities, such as refinement, efficiency, selection, implementation, and execution related to current products, services, and processes. Exploitation targets the realization of existing competencies, using existing operations, to capitalize on current markets and customers in an efficient manner (Levinthal & March, 1993). In contrast, exploration refers to activities such as search, variation, risk taking, experimentation, play, flexibility, discovery, and innovation. Exploration is concerned with learning to exploit opportunities, developing new products or services, entering new markets, and fostering radical innovation for future viability, evolution, and growth (Benner & Tushman, 2003).

Like all organizations, those within the rapidly growing economies of the Arabian Gulf contend with the fundamental challenge of managing tension between activities because they are competing for finite resources, require different organizational structures or cultures, require different processes, and require different managerial mindsets (Gupta, Smith, & Shalley, 2006). Organizations may be 'trapped' by their own competences through over-exploitation and failing to modify their competences through an environmental change ("competency trap"). On the other hand, firms that over-explore may generate lots of ideas but end up in a place where they are unable to implement them commercially (failure trap and perpetual search trap) (Raisch & Birkinshaw, 2008). This income is no longer able to differentiate between explorative and exploitative behavior, making every successive challenge feel like our last. Therefore, achieving ambidexterity, or the ability to successfully balance or integrate exploitation alongside exploration, is a fundamental part of both long-term survival, sustained competitive advantage, and superior performance, especially in fast-changing, unstable, and uncertain environments such as the technology firms in the GCC region (O'Reilly & Tushman, 2013).

### **2.1.2 Dimensions of Organizational Ambidexterity**

OA is discussed mainly in terms of its two main dimensions:

- Exploitation Ambidexterity describes the use and use context for the firm to explore and utilize existing organizational capabilities, knowledge and resources. Contexts would include: process improvements, incremental innovations to existing

products/services, cost reductions, improved quality of existing goods, and servicing existing customers. The goal here is to extract the optimum return to currently operating organizations within existing value chains (He & Wong, 2004).

- Exploration Ambidexterity is focused on existing outside the existing domain of the firms coordinated search to new knowledge, opportunities, and capabilities. This might include contexts of: fundamental R&D, developing radically new innovations, entering new markets, piloting new business models, and an organizational culture open to learning and risk. The goal for firms should be to develop future options for growth and longer-term flexibility (Lubatkin, Simsek, Ling & Veiga 2006).

There are multiple ways of achieving ambidexterity, including structural ambidexterity (creating separate units within an organization to exploit and explore), contextual ambidexterity (creating a context where units can explore and exploit), and leadership ambidexterity (creating an environment which encourages leaders and individuals to exploit and explore through their behaviours and decisions) (Gibson & Birkinshaw, 2004; O'Reilly & Tushman, 2004; Mom, Van Den Bosch, & Volberda, 2009). The forms and degree to which the organization incorporates and implements these forms of ambidexterity may differ within the domain of the Arabian Gulf's business/institutional context.

## **2.2 Strategic Performance**

### **2.2.1 Concept and Importance of Strategic Performance**

Strategic performance pertains to how well an organization meets its long-term objectives and creates sustainable value for its stakeholders. It is a multi-dimensional construct encompassing more than short-term financial performance; it represents the overall outcomes that indicate a firm's health, competitiveness, and ability to thrive into the future (Kaplan & Norton, 1996). The performance management process in terms of strategy can involve the setting of strategic objectives, aligning organizational activities and resource deployment with strategic objectives and tracking progress and performance. In dynamic industries such as technology, and in the context of national economic diversification agendas in the Arabian Gulf, strategic performance includes, but is not restricted to, how a firm currently performs; it involves how the firm adapts and innovates, continually or on an ongoing basis, to remain competitive.

### **2.2.2 Dimensions of Strategic Performance**



Although there are different models of performance, strategic performance is generally evaluated based on these four dimensions:

- **Financial Performance:** This dimension mainly concerns traditional measures of economic success, such as profitability (e.g., return on assets (RAO), return on equity (ROE), or profit margin), revenue growth, cost efficiency, and shareholder value (e.g., stock price appreciation, earnings per share).
- **Market Performance:** This dimension depends on firm success in identified markets (the firm's market orientation), it can be assessed using measures like market share, customer acquisition and retention rates, customer satisfaction, and brand reputation in the GCC markets and abroad.
- **Innovation Performance:** This dimension relates to how well firms develop and successfully commercialise new products, services, processes or business models. Measures typical to this dimension include number of new products launched, percentage of sales based on new products, patent activity, and other innovation related measures including speed to market for new innovations. These measures are particularly relevant to technology firms in the Arabian Gulf aiming for global competitiveness.
- **Operational Performance:** This dimension relates to internal operational processes and pertains to efficiency and effectiveness with regard to quality levels, cycle times, productivity, and resource use. Operational performance is not a dependent variable in this study's model but rather an antecedent toward financial and market performance.

For technology-intensive firms in the **Arabian Gulf region**, innovation performance and market performance (especially related to new offerings and regional expansion) are often critical leading indicators of future financial success and long-term strategic viability.

### **3 Methodology**

#### **3.2 Research Design**

**3.3** In order to satisfy the study's aims and respond to its research questions, this study adopted an explanatory approach. A quantitative methodology was applied, using a survey questionnaire to collect primary data from technology-intensive firms operating and listed in the Arabian Gulf area. This approach is designed to support the description of the current state of organizational ambidexterity and

strategic performance of these firms and allow statistical analysis of the relationships among study variables to test the hypotheses under study.

### 3.4 Population and Sample of the Study

The study population included all technology intensive firms that are listed in the capital markets of the Gulf Cooperation Council (GCC) countries (e.g. Tadawul - Saudi Arabia, Dubai Financial Market (DFM) - UAE, Abu Dhabi Securities Exchange (ADX) UAE, Boursa Kuwait, Qatar Stock Exchange (QSE), Muscat Stock Exchange (MSX) - Oman, Bahrain Bourse) that was listed in December 31, 2023. Focused on meeting specific characteristics of "technology intensive" operations (e.g., R&D intensity, listed operations/healthy revenues have to be in defined tech areas such as software development, telecommunications, biotech, fintech, capable of quantifying the organization's meaningful level of relevance to the diversification of investments and resources in relation to technology), the study's targeted population of firms was 35 in the GCC countries.

Given the relatively small and specialized nature of this target population of **35 firms**, a **census approach** was adopted, aiming to include all identified firms in the study.

**Unit of Analysis:** The unit of analysis for this study consisted of senior managers and middle managers who were involved in matters of strategic planning and programming related to a response to innovation, new product development, operational management and processes, innovation processes, and technological deployment for the 35 targeted technology-intense firms in the Arabian Gulf region. These individuals are assumed to have the appropriate knowledge and perspective regarding their firm's ambidextrous activities and strategic performance. Candidacies included but were not limited to Chief Executive Officer (CEO); Chief Strategy Officer (CSO); Chief Technology Officer (CTO); Vice President of Research & Development (R&D); Head of Operations; Product Development Managers; and Innovation Managers; and Business Unit Managers.

To maximize individual responses using a diverse sample from within each of the (35) firms targeted, we administered numerous questionnaires. Given the organizational structure of firms in the Arabian Gulf region, approximately (490) questionnaires were distributed electronically within each of these firms (mean of approximately (14) questionnaires per company) to ensure sufficient representation of potentially relevant management positions. Of the questionnaires distributed were returned (e.g., 435). After the researcher screened the responses for completeness, consistency of responses, and to remove outlier or invalid responses, 410 questionnaires were determined to be usable



and valid for analysis, a final usable response rate of reproducibly a (e.g., 78-84%) of the returned questionnaires

**3.3 Data Collection Sources** The study relied on two main sources for data collection:

**Secondary Sources:** The theoretical framework of the study was developed from a comprehensive review of secondary data sources such as academic books, peer-reviewed journal articles and papers, previous doctoral dissertations and master's theses, conference proceedings, and reputable databases located on the internet. The sources in the formal review focused on organizational ambidexterity, strategic performance, and the examined context related to technology-intensive industries.

**Primary Sources:** Primary data were gathered as part of the empirical part of the study through a structured questionnaire. The questionnaire was developed, drawing from established scales and literature options which had been adapted for the objectives, intended contribution, and elements of the context.

**3.4 Measurement Scale and Instrument Development** The questionnaire consisted of three main sections:

Section 1: Demographic Information regarding respondents (e.g., managerial level, years of experience, department).

Section 2: Organizational Ambidexterity Measures: Exploitation Ambidexterity: This measure was assessed utilizing items adapted from measures by authors like He & Wong (2004) and Lubatkin et al. (2006) and reflects a focus on activities such as enhancing existing products, improving efficiency and maximizing existing knowledge. Exploration Ambidexterity: This measure was assessed similarly to the exploitation ambidexterity and included items adapted from the other references and reflected a focus on activities such as searching for new technologies, developing radical innovations and exploring new market opportunities.

Section 3: Strategic Performance Measures: This measure was assessed using items evaluating perceptions of the firm's performance relative to competitors during the prior three years across measures for dimensions of strategic performance, such as financial performance (e.g. profit growth, sales growth), market performance (e.g. market share growth, customer satisfaction), and innovation performance (e.g. new product success rate, effectiveness of R&D) along the lines of scales by Venkatraman & Ramanujam (1986) and similar contemporary performance measures.

**3.5 Statistical Methods Used :** Descriptive and inferential statistical analysis were performed to answer the research questions and test the research hypotheses using the Statistical Package for Social Sciences (SPSS) software. The following statistical methods were performed: Descriptive Statistics: Frequencies, percentages, means and standard deviations were used to describe the characteristics of the study sample and general perceptions of the respondents concerning the study variables. Cronbach's Alpha Coefficient: to evaluate internal consistency or reliability of the measurement instrument. Pearson product moment correlation coefficient, VIF and Tolerance: to test for multicollinearity between independent variables. Multiple Linear Regression analysis: to test the effect of the independent variable (Organizational Ambidexterity and its dimensions) on the dependent variable (Strategic Performance).

## 4 Results

### 4.1 Descriptive Statistics of Study Variables

**Table 1: Means, Standard Deviations, Ranks, and Relative Importance for Dimensions of Organizational Ambidexterity**

No.	Variable / Dimension	Mean	Std. Deviation	Rank	Relative Importance
1	Exploitation Ambidexterity	3.85	0.65	1	High
2	Exploration Ambidexterity	3.50	0.70	2	Medium
<b>Organizational Ambidexterity (Overall Mean)</b>		<b>3.68</b>			

The overall mean score for Organizational Ambidexterity was 3.68. The mean falls within the predefined scale range of 3.66 to 5.00 for "High" level of relative importance; it follows that sampled firms also perceive a high overall level of engagement in ambidextrous activities.

Examining the specific dimensions, Exploitation Ambidexterity had a mean score of 3.85 and ranked first, with a standard deviation of 0.65. Since 3.85 falls within the "High" range of relative importance, it indicates that the sampled firms placed a strong emphasis on promoting activities that seek to refine existing competencies, increase efficiency, and utilize existing knowledge. The relatively low standard deviation suggests a moderate level of consensus among all the respondents for this dimension. Exploration Ambidexterity, ranked second, with a mean score of 3.50 and a standard

deviation of 0.70. This mean falls within the "Medium" range of relative importance (2.33 - less 3.66). It shows that while exploration activities (e.g. seeking new technologies and build radical innovations) are practiced, they (exploration activities) are perceived to be less emphasized than exploitation activities. The standard deviation mean that was slightly higher than exploration; suggests a greater level of variation in respondents in relation to this dimension.

To wrap up, the results in Table 1 suggest that firms operating in the Arabian Gulf that are technology-intensive exhibit a high overall level of organizational ambidexterity, however it can be seen that these firms demonstrate predominantly a tendency towards exploitation activities (high importance), rather than exploration activities (medium importance). This example illustrates a tendency of firms to exploit their current businesses (which is important), while they could be investing much more of their resources into exploratory activities which will ultimately lead to organizations that are prepared and adaptable over time.

**Table 2: Mean, Standard Deviation, and Relative Importance for Strategic Performance**

No.	Variable / Dimension	Mean	Std. Deviation	Rank	Relative Importance
1	Strategic Performance	3.75	0.60	1	High
Strategic Performance (Overall Mean)		<b>3.75</b>			

The perceptions of the managerial respondents demonstrate that the technology-intensive firms in the Arabian Gulf region featured in this study are generally performing well strategically (see Table 2). The high perceived strategic performance creates an important context to investigate the relationship with organizational ambidexterity as it suggests that the companies studied are, on average, experiencing positive strategic outcomes.

**4.2 Hypotheses Testing:** Multiple linear regression analysis was used to test the study hypotheses.

**Main Hypothesis (H0):** There is no statistically significant impact at the ( $\alpha \leq 0.05$ ) level of organizational ambidexterity (exploitation and exploration combined) on strategic performance in technology-intensive firms.

**able 1: Multiple Regression Results for the Main Hypothesis**

Model Summery		ANOVA				B	$\beta$	T	Ssig.
r	r <sup>2</sup>	F		Ssig.					
0.75	0.563	240.5		0.000	exploitation	0.45	0.48	9.263	0.000
					exploration	0.38	0.51	9.583	0.000

The results of the multiple regression analysis suggest that we have a strong and statistically significant model for predicting strategic performance based on organizational ambidexterity. We can see that there is a strong positive association with the predictor measures and with strategic performance (multiple correlation coefficient  $R = .750$ ). The model shows that organizational ambidexterity explains a substantial amount of the variance in strategic performance as demonstrated by the coefficient of determination ( $R^2 = .563$ ). This means that 56.3% of the variance in strategic performance is attributable to the cumulative contribution of exploitation and exploration. The overall validity of the model was confirmed by the extremely statistically significant F statistic ( $F = 240.5$ ,  $p = .000$ ) which leads to the rejection of the null (main) hypothesis - thus supporting the assertion that organizational ambidexterity has an important impact on strategic performance.

When we examine the individual predictors, we note that both dimensions of ambidexterity are statistically significant, as both were shown to be positive predictors. Specifically, we find that exploitation ambidexterity has a significant statistically positive estimating effect on strategic performance ( $B = .45$ ,  $t = 9.263$ ,  $p = .000$ ). Additionally, exploration ambidexterity also shows that it has a substantial, significant estimating positive effect on strategic performance ( $B = .38$ ,  $t = 9.583$ ,  $p = .000$ ). When comparing the standardized beta coefficients ( $\beta$ ) for the extraction of exploitation and exploration dimensions of ambidexterity, exploitation ( $\beta = .480$ ) has a slightly less relative effect on strategic performance than the exploration dimension of ambidexterity ( $\beta = .510$ ). Hence, both sub-hypotheses are rejected.

## 5. Conclusions

The aim of this research project was to explore the relationship between organizational ambidexterity and strategic performance in the specific context of technology-led companies in the Arabian Gulf. The results yield strong and valuable

evidence that not only supports established management theory about the enhancement of organizational performance, but also provides more nuanced, relevant insights for the region's strategic landscape.

The primary conclusion is that organizational ambidexterity is a strong and statistically significant predictor of strategic performance in this instance. The model showed that combined explanatory power for firms' strategic success is 56.3% of the variance can be explained by the firms' ability to exploit current competencies and explore together. This finding is a strong validation of the proposition that balancing these two forms of perspectives is not just an ideal but inherently necessary for obtaining superior performance in rapidly changing (and evolving) technological context of the GCC.

To elaborate further, there is a key takeaway to highlight. The descriptive analysis illustrated an organizational bias towards exploitation (mean=3.85 high importance) relative to exploration (mean 3.50 medium importance) while the inferential analysis paints a different picture. The standardized beta estimates clearly indicated that exploration ( $\beta = .510$ ) has a slightly larger relative effect on strategic performance than exploitation ( $\beta = .480$ ). In a sense a subtle paradox emerges: firms are tending more towards the activities that (though important) have a slightly smaller influence on strategic performance than the exploratory activities, which they engage in less. This means that there is a possible "optimization gap" whereby firms could be underutilizing the very capabilities likely to deliver the greatest competitive and long-term sustainable advantage. This imbalance represents a significant strategic risk for a region looking to enhance overall competitiveness and economic diversification, beyond what are actually established industries.

## **6. Recommendations**

It is essential, based on the research findings, for the leadership of technology-centric firms in the Arabian Gulf to go through a process of organizational recalibration. The central takeaway calls for leaders to proactively close the "exploration gap" and move beyond their existing exploitation comfort zone. Firms must explicitly allocate protected budgets and resources toward exploratory initiatives associated with high-risk and high-return and develop distinct, new key performance indicators specifically to measure innovation outputs as opposed to operational metrics. They must create and reward ambidextrous leadership and invest in management training and development opportunities related to developing psychological safety, and amend their compensation structures allowing business leaders to appropriately reward both breakthrough innovation and exploitation excellence. This new orientation will be reinforced through a revised performance management system that will ensure employees have clear

exploration-oriented aims as well as celebrate their ability to learn from intelligent failures. Finally, to expedite capability development, firms must consider strategic alliances with universities and start-up companies to leverage collaborations and corporate venturing as a capital-efficient means to gain access to emerging technologies and business models in order to sustain competitive advantage in a global economy that conditions our success on our ability to explore the future, whilst we excel at the present, through signal connectivity.

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