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Predicting Explicit and Valuing Tacit Synergies of High-Tech Based Transactions: Amazon.com's Acquisition of Dubai-Based Souq.com

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Abstract: Although the interdependence between the core competencies of the collaborating partners and synergy as an important consideration when companies decide to go for a merger is theoretically understood and evident, further empirical research is needed to integrate two concepts into a coherent empirical construct. The paper aims to develop an empirical framework useful for scholars and practitioners to incorporate real options theory into resource-based views (RBV) to measure collaborative synergies of M&As. Having done the empirical research on the case study of the Souq.com acquisition by Amazon.com as one of "the biggest-ever technology M&A transactions in the Arabic world", the paper provides a conceptual construct of research that encompasses not only Amazon.com and Souq.com but can be useful to other companies pursuing strategic growth by M&As.

Keywords: real options; resource-based view; acquisition; core competence; synergy

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1. Introduction

Corporate foresight is a clear and systematic firm's orientation toward the future (Fergnani 2022, p. 825) and ensures opportunities to reorchestrate core competencies of an acquirer firm by incorporating idiosyncratic resources and dynamic capabilities of a target firm (Čirjevskis 2023a) and, thus, create market value added. Yet, putting into practice the value-creating opportunities of collaborative strategies is very challenging (Bower 2001; King et al. 2004; Schweizer et al. 2022). Within the most salient future research opportunities on corporate foresight, Fergnani recommends two-stage mediation as follows: corporate foresight > new business opportunities > resource-based changes > performance (Fergnani 2022, p. 836).

This paper contributes to corporate foresight research by providing the ARCTIC framework as an extension of the VRIO model (Barney and Hesterly 2018) to foresee an explicit competence-based synergy in collaborative ventures and value a tacit collaborative synergy by real options theory. By contributing to the real options application for merger and acquisition (M&A) deals, Kogut (1991) argued that "the firm obtains an option to expand or acquire in response to future market developments while retaining the option to defer complete commitment" (Tong and Reuer 2007, p. 38). Indeed, having executed an acquisition of Souq.com, Amazon.com has exercised the growth real option to induce explicit collaborative synergies and add market value by tacitly creating synergism.

Thus, the paper contributes to multidisciplinary research by bridging strategic management research on collaborative synergism with the ARCTIC framework application and financial management research on value-adding praxis with real options application. Moreover, having explored the case study of the acquisition of Souq.com by Amazon.com, this paper contributes to the real options theory by empirically testing whether the target's core competencies might exert synergetic influences on an acquirer's core competencies and illustrating the strategic synergism measurement process by real option application.

The remaining part of the paper is organized as follows. Based on an in-depth literature review, the ARCTIC framework is provided, explained, and extended. Next, the author discusses the measurement technique of competence-based synergies as the market value-added of M&A deals with real options application techniques and develops a theoretical proposition. Then comes an explorative case study of the acquisition of Souq.com by Amazon.com justifying empirically the provided proposition with an application of the Black-Sholes Option Pricing Model and Binominal Option Pricing Lattice techniques. To conclude, the research results, theoretical and empirical contributions, limitations of the research, and future work are discussed.

2. Measuring Explicit Collaborative Synergy of Corporate Integrative Strategies

The paper adopts the core competence (Prahalad and Hamel 1990) perspective in general, and, particularly, the RBV approach (Barney 1996) to illustrate the strategic significance of the collaborative partners' capabilities to reciprocally explore, absorb, and exploit their core competencies and generate collaborative synergies. Recently, the ARCTIC research framework (Čirjevskis 2023b) has been developed to test the prerequisites of explicit collaborative synergy in M&A deals (Čirjevskis 2021). The ARCTIC framework predicts a collaborative synergy by analyzing complementarities, transferability, and compatibility of distinctive competencies of the collaborative partners.

The construct was formed as six simple questions: do those competencies create a basis of competitive advantage (A?); are core competencies relevant to external demand and create value for customers (R?); are distinctive competencies' transfer supported by absorptive capacity of collaborative partners (C?); is process of integration of partners' core competencies (T?) time-efficient; is a plan of the integration core competencies put in place (I?); and what about partners' cultural fit or misfit (C?). This new framework observes the visible partners' competencies at the moment of the merger and can assess and predict an explicit collaborative synergy of forthcoming or already completed M&A deals.

A more complex method to assess, predict, and value is a tacit collaborative synergy (Hao et al. 2020). Within the collaboration of the business partners, a new set of core competencies can be reciprocally created and developed that they never would have been produced by working in splendid isolation and competing. A tacit collaborative synergy is impossible to predict qualitatively with an application of VRIO analysis and/or using the ARCTIC framework as a VRIO model extension. However, a tacit synergy valuation can be done by real options valuation.

3. Valuing Tacit Collaborative Synergies

Real options reveal the importance of managerial flexibility in assessing collaborative synergies. Traditional methods of valuation synergies based on discounted cash flows have the following disadvantages: they assume the immutability of the decisions of managers, do not have their dynamic managerial capabilities, and do not consider the opportunities to develop new core competence in collaborative deals such as alliances and M&As. The most valuable feature of real options valuation is giving a dynamic perspective providing opportunities for flexibility and growth opportunities in collaborative deals.

Recently, Dunis and Klein (2005) provided a brilliant contribution to M&As' synergies valuation using the Black, Scholes, and Meton option pricing model (BSOPM). Even though the BSOPM provides a highly precise result, it is devoted to the European type of option that can be exercised on the maturity date only and can be considered a special case of an American option that can be exercised at any time. An American option can be valued with a Binominal Option Pricing Model that visualizes like a "road map" all possible movement of changes in the value of the merging company (first lattice of the underlying value) and possible changes in the value of collaborative synergy (second lattice of real options value).

Amram and Kulatilaka (1999) determined the Binomial Option Pricing Model (BOPM) as a method based on a representation of the progression of the value of underlying assets that in each time step can take only 1 (up) or 2 (down) possible values. To apply the BOPM,

first the joint value of assets of collaborative partners (the sum of the market capitalization of an acquirer and a target) is determined in node A. After the next time step, this value can move up to Au or down to Ad; at the next time step, these possible outcomes can be interpreted as Au2 and Ad2, and so on. At the final time step (the date of getting collaborative strategy according to management expectations), the distribution of asset values can be developed into horizontal form as all possible outcomes as shown in Figure 1.

After that, by using the Risk Neutral Probability (NP) approach (Mun 2016), the second lattice of real options valuation is developed and the real option value is calculated in the opposite direction, back to the starting A node. Thereby, the value of collaborative synergy is valued in node A of the second lattice of real options. Figure 1 shows the graphical representation of binomial lattice and value at risk or VaR model. Once an acquirer sets the VaR or threshold level, this threshold level can be applied to the binomial lattice. "Any node that plunges below the VaR threshold level is categorized as the unacceptable node or eliminated node" (Teoh and Sheblè 2007, p. 3).

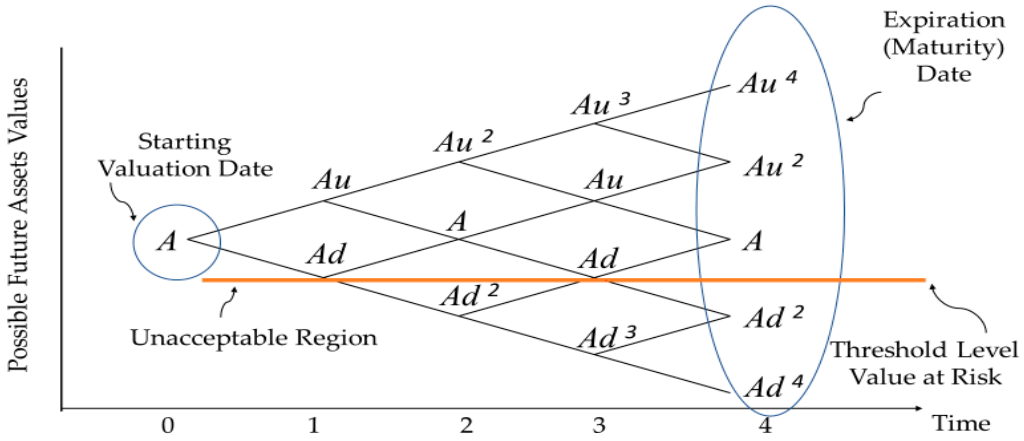

Figure 1. Graphical Representation of the Binomial Option pricing model (the lattice of underlying assets value) and Value at Risk (VaR) model. At node time 1, there are two possible underlying values, Au and Ad; at node time 2, there are three possible underlying values, Au2, A, and Ad2; and so on. Source: Adopted from (Amram and Kulatilaka 1999; Teoh and Sheblè 2007).

The Binominal Option pricing model valuation of collaborative synergy is more flexible than BSOPM and more intuitively understandable by practitioners; however, it provides less accurate valuation results. This problem may be solved by the application of both techniques together, namely, BSOPM and BOPM. Thus,

Proposition 1. *An explicit collaborative synergy can be measured using the ARCTIC framework and a tacit collaborative synergy can be valued with a real options application.*

To empirically justify the proposed theoretical proposition, the case study of Amazon.com's acquisition of Souq.com has been prepared using secondary available data.

4. Method

This case study "Souq.com by Amazon.com in 2017" is a study of a phenomenon (the ARCTIC framework and real option valuation application) in the M&A deal. The single case study research possesses the opportunity to open a black box that arises by looking at deeper causes of the phenomenon and gaining a better understanding of not only "what" but also "how" things happen (Fiss 2009; Ridder 2016; Yin 2018). The author asks two research questions: What are the prerequisites of explicit competence-based synergies in M&A deals in the global ICT industry? How to measure tacit competence-based synergies as market value added with an application of real options? The research questions are the

phenomenon-driven type, and it is appropriate to use a single case if phenomenon-driven questions are subjects to answer (Eisenhardt and Graebner 2007).

There are two stages of the current research to get the answers to research questions. To answer the first research question, the ARCTIC model was applied. Having justified the proposed theoretical proposition, an extensive archival search of secondary data was carried out to operationalize variables and sub-variables of the ARCTIC model for this strategic M&A context.

The second stage of the research involves a demonstration of the valuation technique of collaborative synergy with the application of real options using available published financial data from Amazon.com and Souq.com. To operationalize real option variables with applications of the Binominal Option Pricing Lattice, the author adopted the recommendation of Dunis and Klein (2005, p. 8) on real options variables to measure collaborative synergies. The source of secondary data obtaining real options variables is provided in Table 1.

Table 1. The correspondence between financial options and real options.

Financial Options Variables	Real Option Variables	Sources of Data
Share price	The cumulated market value of collaborative business partners before the announced deal terms, excluding the week of an announcement (four-week average)	https://ycharts.com/ (accessed on 12 February 2023). https://www.reuters.com/ (accessed on 12 February 2023). https://www.google.com/finance (accessed on 12 February 2023).
Strike price	The hypothetical future market value of the separated entities forecast by the DCF or EV-based multiples	www.helgilibrary.com (accessed on 12 February 2023). www.marcotrends.net (accessed on 12 February 2023). Own calculation
Standard deviation	The annualized standard deviation of stock within one week after the announcement	https://vlab.stern.nyu.edu/docs/volatility/GARCH (accessed on 12 February 2023). Own calculation
Risk-free rate	Domestic three-month rate to the leading collaborated partner	https://ycharts.com (accessed on 12 February 2023). https://www.statista.com/ (accessed on 12 February 2023).
Time to maturity	One year or by the expectation of management on getting collaborative synergy	The synergy life cycle.

Source: Adopted from Dunis and Klein (2005, p. 8) and extended by the author.

5. Case Study Amazon.com Acquisition of Souq.com. Data Analysis and Interpretation of Results

5.1. Rationales behind Entering the Acquisition of Souq.com by Amazon.com and the Impact of Core Competencies on Explicit Collaborative Synergies

On 29 March 2017, a brave foray of Amazon.com into the Arabic market was announced, namely, the acquisition of Dubai-based start-up Souq.com. The rationales behind this were to enter a new geographic market and to acquire Souq.com's core competencies, capabilities, and technology to "navigate a complicated region" (MAGNiTT 2017, p. 1).

5.2. Predicting an Explicit Collaborative Synergy in Amazon.com's Acquisition of Souq.com

The central rationale to collaborate with Souq.com was also to promote more Amazon services and products to the wide Middle Eastern region customer base (Fahy 2017). According to Banerjee (2021), consumers in the Middle East can buy Amazon.com products using the Souq.com platform. What is more, merchants of the Middle East would get "access to a wider market via Amazon's network" (Banerjee 2021, p. 8). The prerequisites of explicit collaborative synergies are analyzed and shown in Table 2.

Table 2. The ARCTIC framework: Amazon.com's acquisition of Souq.com.

The Core Competencies of Souq.com and Amazon.com	(A?)	(R?)	(C?)	(T?)	(I?)	(C?)
"Souq.com has the largest online retailer and marketplace platform in the Arab world, offering more than 400.000 products across 31 categories" (BSIC 2017)	Yes	Yes	Yes	Yes	Yes	Yes
"Souq.com presents in several markets of the region including Egypt, Saudi Arabia, Kuwait, Qatar, and Oman". (BSIC 2017)	Yes	Yes	Yes	Yes	Yes	Yes
"Souq.com develops a logistic infrastructure by creating its delivery system (partnering with local logistic companies)" (BSIC 2017)	Yes	Yes	Yes	Yes	Yes	Yes
"Souq creates a prepaid card purchasable in brick-and-mortar stores, as well as developing its payment gateway, Payfort" (BSIC 2017)	Yes	Yes	Yes	Yes	Yes	Yes
"Amazon is the world's largest online shopping retailer, operating in 189 countries and employing more than 341.000 people across 5 continents" (BSIC 2017)	Yes	Yes	Yes	Yes	Yes	Yes
"Amazon.com delivers innovation across its multiple businesses, ranging from drone delivery systems to the manufacturing of electronic devices" (BSIC 2017)	Yes	Yes	Yes	Yes	Yes	Yes
"Amazon.com has a continuous focus on external growth, running more than 50 acquisitions in the last ten years" (BSIC 2017)	Yes	Yes	Yes	Yes	Yes	Yes

Source: Developed by the Author.

A concise and precise description of the case study results, their interpretations, and the empirical conclusions can now be drawn. The ARCTIC framework has identified six prerequisites of explicit competence-based synergies. Amazon is the world's largest online shopping retailer and Souq.com has the largest online retailer and marketplace platform in the Arab world. Thus, first, the core competencies of both firms possess complementarity ("A" and "R") and compatibility (first "C" and "T").

According to Banerjee (2021), the operation of the two companies was complementary ("A" and "R"):

> " . . . *With this deal, Amazon expected to extend its resources and infrastructure to Souq's operation and Souq was to benefit in terms of both delivery capabilities and customer selection. At the time, Amazon would have access to the largest online customer base of the region thus enabling potential cross-selling synergies, it would also be able to leverage Souq.com infrastructure to store and deliver products*" (Banerjee 2021, p. 8).

Regarding the compatibility of core competencies of both companies in terms of absorption capabilities of their core competencies and time of integration to exploit them (first "C" and "T"), Souq.com's co-founder Ronaldo Mouchawar said:

> " . . . *By becoming part of the Amazon family, we'll be able to vastly expand our delivery capabilities and customer selection much faster, as well as continue Amazon's great track record of empowering sellers*" (Reuter 2017, p. 1).

Amazon.com's senior vice president for its international consumer business, Russ Grandinetti, added:

> " . . . *We are working to quickly integrate Souq.com and Amazon capabilities, in terms of both customer experience and fulfillment, to provide an ever-improving shopping experience for customers in the Middle East*" (Fahy 2017, p. 1).

When it comes to transferability of core competencies in terms of an integration plan of their core competencies and compatibility of their business culture ("I" and last "C"), Ronaldo Mouchawar, the co-founder and chief executive of Souq.com said:

> " . . . *It is an exhilarating time for the e-commerce industry in the region. Integration of Amazon's technology and global resources with our local expertise will help us to offer a great service to our loyal customers*" (Fahy 2017, p. 1).

Moreover, Ronaldo Mouchawar argued:

> " . . . *Amazon is a great fit for us. We have a lot of common values, and it is all about innovation, technology, and the type of customer experience and thinking that Amazon has*" (Sayegh and Cornwell 2017, p. 1).

The ARCTIC analysis has justified the proposition that Amazon.com's acquisition of Souq.com was a highly synergetic deal in terms of the generation of explicit collaborative synergies.

5.3. Valuing a Tacit Collaborative Synergy of Amazon.com's Acquisition of Souq.com with Binominal Option Pricing Model

The real options parameters have been calculated following Dunis and Klein's (2005) recommendation. Regarding the parameter Stock price (So) of real options, the market capitalization of Amazon on 28 March 2017 was USD 408.82 billion (YChart 2022a). The Financial Times has disclosed a USD 650–750 million price that Amazon would have paid to Souq.com (BSIC 2017). The market value of Souq.com was estimated at USD 750 million on 28 March 2017; thus, the So before the announcement equals USD 409.57 billion.

The hypothetical market value of Amazon.com working without the acquisition of Souq.com was calculated employing EV/EBITDA multiples. Concerning Souq.com's valuation, EV/Revenues (Enterprise Value) multiple was used. The future market value of Souq.com without collaboration with Amazon.com was estimated at USD 1.024 billion.

Then, having used Amazon's EBITDA on 31 March 2017 trailing 12 months USD 12.844 billion (Macrotrend 2022) and EV/EBITDA multiple in 2017 was 34.70 (YChart 2022b), the hypothetical future market value of Amazon.com without acquisition of Souq.com was calculated at USD 445.69 billion. Thereby, the Strike price (K) (K) equals USD 484.71 billion. The next parameter is a risk-free rate (rf) that was defined as Long-Term Government Bond Yields (10 years) for the United States, which was 2.42% (YChart 2022c) on 28 March 2017. The annualized standard deviation (σ) of stock within one week after the announcement was 23% (VLab 2022). The time of achieving synergies (T) was assumed two years considering the rebranding of Souq.com in May 2019 when Souq.com UAE became Amazon. ae (Amazon 2019). Moreover, Ronaldo Mouchawar, Co-Founder of Souq and Vice President of Amazon MENA said:

> "*Today marks a proud day for Souq and Amazon, a day that we have been working towards since the two companies came together in 2017. Amazon. ae brings together Souq's local know-how and Amazon's global expertise, something we believe will be of significant benefit to UAE customers*" (Amazon 2019, p. 1).

Summing up, the real options valuation parameters are provided in Table 3 below.

The value of the tacit collaborative synergies of Souq.com's acquisition by Amazon.com in 2017 has been calculated employing Excel spreadsheets as shown in Tables 4–6.

Table 3. The parameters of real options pricing model's input variables: Amazon.com's acquisition of Souq.com.

Financial Call Options	Option Variables	Real Options Data
Stock price (in USD billion)	S	409.57
The strike price (in USD billion)	K	446.71
Time to expiration (in number of years)	T	2.0
The standard deviation of stock returns within one week before the acquisition announcement	σ	23.0%
Risk-free rate	rf	2.42%

Table 4. Binominal option pricing model: a lattice of the underlying values of Amazon after the acquisition of Souq.com (in USD billion).

0	1	2	3	4	5
					847.62
				732.87	
			633.65		633.65
		547.87		547.87	
	473.70		473.70		473.70
409.57		409.57		409.57	
	354.12		354.12		354.12
		306.18		306.18	
			264.73		264.73
				228.89	
					197.90

Table 5. Real Options Binomial Option pricing model parameters: Amazon.com acquisition of Souq.com.

Parameters of the binominal tree	Equations	Numbers
Time increment (years)	$\delta t = \frac{t}{N}$	0.40
Up factor (u)	$u = e^{\sigma\sqrt{\Delta T}} = \frac{1}{d}$	1.157
Down factor (d)	$\frac{1}{u}$	0.865
Risk-neutral probability (p)	$p = \frac{e^{r\Delta T} - d}{u - d}$	0.497

Table 6. Binominal option pricing model. Real options lattice: a value of Amazon tacit synergies of the acquisition of Souq.com (in USD billion).

	1	2	3	4	5
					400.91
				290.46	
			195.50		186.94
		125.39		105.46	
	77.69		58.53		26.99
46.90		32.07		13.28	
	17.39 €		6.54		0.00
		3.22		0.00	
			0.00		0.00
				0.00	
					0.00

The lattice of the underlying values of Amazon after the acquisition of Souq.com is shown in Table 3 and demonstrates the threshold level at USD 409.57 billion. The threshold level of this acquisition equals the market capitalization value of Amazon on 28 March 2017 after the acquisition of Souq.com without collaborative synergies.

The binominal option pricing model (BOPM) provides a straightforward understanding and visualizes how M&A uncertainty represented by volatility influences option value during its lifetime as shown in Table 5.

The tacit synergy of Amazon.com's acquisition of Souq.com equals USD 46.90 billion. The real market capitalization of Amazon.com on 29 March 2019 was USD 876.22 billion (YChart 2022a), which was almost twice as big as the forecasted market value added with BOPM. The reason for such significant differences can be Amazon.com's acquisition of Whole Foods in 2017, which was also strongly synergetic (Čirjevskis 2023a).

Therefore, research also exemplifies the limitation of the real option application to measure a collaborative synergy of sequential acquisitions of international ventures. It is difficult to validate the synergetic effect of one isolated acquisition deal when several acquisitions happen within the anticipation of the duration of achieving synergies such as Amazon did successfully in 2017. To conclude, the result of the real options demonstrates

that the value of a tacit collaborative synergy can be estimated as the market value added provided in M&A strategic deals that justify the theoretical proposition.

6. Findings and Discussion

This paper constitutes a novel theoretical and empirical contribution to foreseeing an explicit competence-based synergy in international collaborative ventures from the resource-based view and values a tacit competence-based synergy by applying real options. This is the main theoretical contribution of this paper. Moreover, the paper makes several theoretical and empirical contributions to the strategic management, international business, and corporate finance disciplines. This paper contributed to the scientific recommendation of Fergnani (2022, p. 836) by operationalizing the following discourse on mediation stages of foresight: corporate foresight (collaborative strategies) >> new business opportunities (employing VRIO analysis to explore VRIN resources and capabilities of collaborative business partners) >> resource-based changes (exploring an explicit collaborative synergy with the ARCTIC framework) >> performance (valuing a tacit collaborative synergy with real options) as provided in Figure 2.

Figure 2 justifies that this research is bridging the gap between real options theory, a resource-based view in the strategic management discipline, and global strategy practice in search of critical success factors of explicit and tacit collaborative synergy in M&A deals and their quantitative measurement.

When it comes to the contribution to global strategy, an application of the ARCTIC framework goes beyond the application of VRIO resources to the operations of an individual corporation in individual foreign countries (Ghemawat 2007; Kogut 1985). Moreover, recent research (Chi et al. 2019) points out the ability to switch as another source of competitive advantage built into multinational corporation-acquired affiliates.

This paper empirically justifies this proposition and illustrates how over the past decade, Amazon.com has profoundly changed its strategies to leverage the opportunities of globalization and to organize activities across the geographical boundaries of the United States. Thus, the research contributes to examining Amazon.com's global strategies, its leveraging of cross-border connectivity, and the management of its "outbound" activities of the global value chain in the Arabic world.

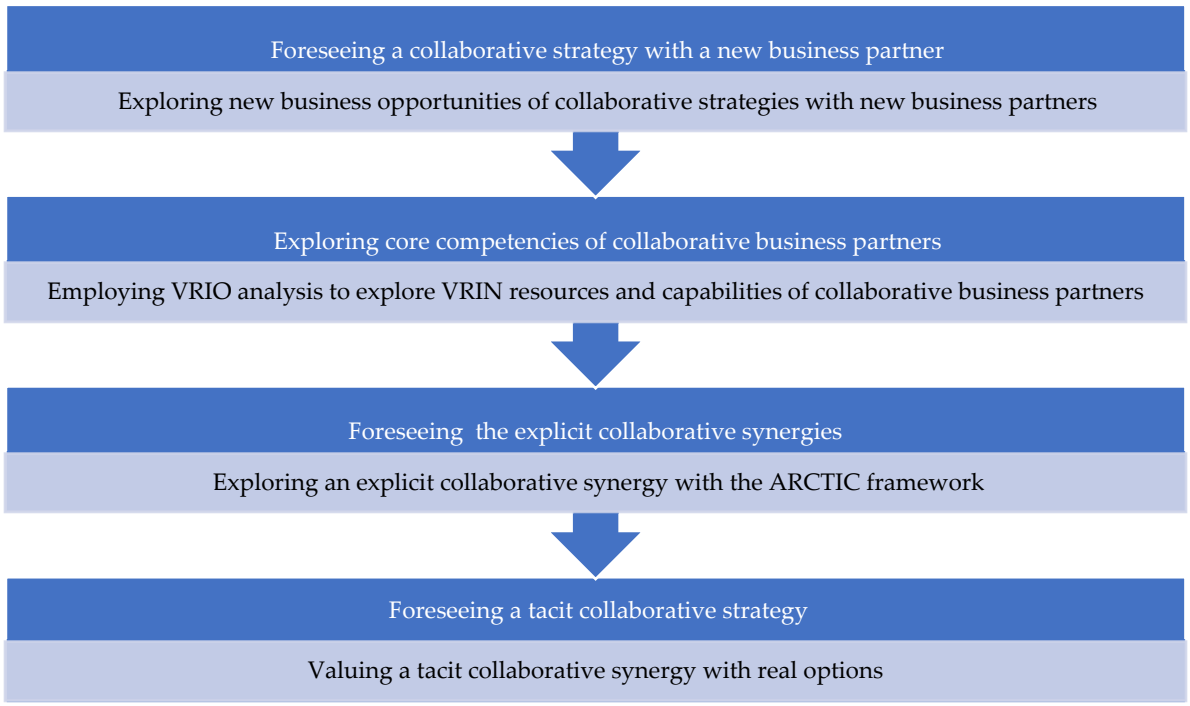

Figure 2. The conceptual construct of research of an explicit and tacit collaborative synergism.

7. Conclusions, Limitations, and Future Work

Having researched Amazon.com's acquisition of Souq.com as "the biggest-ever technology M&A transaction in the Arabic world" (Sayegh and Cornwell 2017), the paper provides a conceptual construct of research for scholars and practitioners that encompasses not only Amazon.com and Souq.com but can be useful to other companies pursuing strategic growth by M&As as shown in Figure 2. Moreover, the current paper also contributes to and advances the strategic management discipline by answering the question of the Strategy Practice group of the Strategic Management Society: "How can we better leverage a multi-disciplinary approach to inform and advance the strategy practice agenda?" (Strategic Management Society 2020).

Having used a real option to value competence-based synergy in a real case study, the paper also contributes to the real options theory application in strategic management. The current paper has contributed to the understanding of option pricing models to value a competence-based synergy of collaborative strategy and make them more accessible and compelling to the broad strategy and finance scholarly community (Hannah et al. 2021). "Although the academic literature on real options has grown enormously over the past three decades, the adoption of formal real option valuation models by practitioners appears to be lagging" (Lambrecht 2017, p. 166).

Usually, the challenge with strategic decisions is that they are in many cases based on strong intuition and qualitative information only (Kyläheiko et al. 2002). With relevant quantitative information about merging companies and real option variables, it becomes possible to get more transparency to the strategic decisions and make outcomes of explicit and tacit synergy measurable at least in high-tech-based M&A deals. Therefore, this paper contributes not only to real options theory and the ARCTIC framework development by bridging them onto a new theoretic level, but also underpins theoretical advancements with the practical managerial illustration. Kyläheiko et al. (2002) argued that the real options approach can contribute to managerial practice twofold: a real option is future-oriented, and it gives a quantified valuation of the strategic management decisions.

The paper contributes to this scientific conversation by adding a fresh look at the cutting-edge managerial practice of ICT industry-type M&A dealing with the application of real options valuation. The "real option" perspective is not new in financial management literature. However, Lambrecht argued that existing studies on real options focus on only a few industries (Lambrecht 2017). "Hopefully future studies will cover a wider variety of industries and investment decisions" (Lambrecht 2017, p. 170). In this vein, this paper contributes to this conversation, bridges a real options approach with a resource-based view (RBV) framework, and demonstrates that ICT-type M&A deals create strategic growth options that enable an acquirer to rapidly address various technological and environmental changes and maximize market value-added.

When it comes to computational limitations, the connection of the theoretical value with the market actual value largely depends on the timing of the prices taken, and it is entirely difficult to justify market value-added precisely in such kinds of studies. Kyläheiko et al. (2002) argued that "In the future particularly the management of dynamic capabilities—like the ability to choose the right R&D portfolio, to generate Schumpeterian new combinations or to find fruitful partnerships or acquisition opportunities—will be major success determinants. Hence, the genuinely dynamic perspective is necessarily required" (Kyläheiko et al. 2002, p. 65). Having extended those arguments, this paper adds a perspective of future research to dig deeper into those dynamic capabilities (Teece et al. 1997); a perspective in conjunction with real options application is necessarily required.

After all, real option valuation, which combines corporate finance and corporate strategy, is not only a science but an art (Lambrecht 2017). Therefore, future research papers could discuss and contribute to related issues on the influencing mechanisms of the synergetic effects of deals and real option application perspectives. What is more, the paper provides an arena for future research that can deepen the scientific discussion on the issues given and contribute to the empirical research on synergetic effects of M&As dealing

with more advanced real options applications techniques (e.g., compound, rainbow, with changing volatilities, and other types).

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