

The Sustainability of Korean Management in Global Market: Competitive Strategy and Performance in Korean ICT Industry

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Abstract

ICT contents market is globally considered as an industry of high added value, where sustainability is accomplished through stories that cover wide range of consumers. However, the need for long-term internationalization strategy is growing as countless number of applications and games has pushed the local market to its limit. Thus, this research explored on the industrial characteristics and the internationalization of ICT contents firms through acquisition of competency. Based on Resource Dependence theory, the authors studied how pursuit of legitimacy and autonomy functioned in the expansion process of ICT contents firms. A survey analysis of 212 key decision makers of Korean ICT content firms were performed, to reveal that resource environment and interdependence must undergo a thorough consideration.

Keywords: ICT internationalization, Seeking legitimacy, Seeking autonomy, Resource Dependence theory, ICT industry, Sustainability

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1. Introduction

The internationalization of ICT enterprises are becoming a necessity to all nations. The shortage of customer base and business diversification reported by online-based content platform managers leads the field professionals to speculate that advancing to the global industry is the only path to survival [1].

Unfortunately, the international performance of Korean ICT content industry is subpar. The mobile messenger service 'Line' released by NHN is reported to have 3.5 billion users, while that of Kakaotalk reaches 1 billion. Yet 38 million users are local Korean users, and the rest are known to be Korean immigrants; it is perhaps precise to conclude that the service is highly bound to Korean users. The difficulty continues as efforts to expand into European and North American market has shown unsatisfactory performance against the Swiss, German, and Chinese game industries. In summary, the internationalization of Korean ICT contents industry calls for an in-depth strategic approach. Thus, our research aims to suggest an empirical and logical analysis on methods to achieve competitiveness and sustainment of Korean ICT Contents Industry. In addition, this report discusses the issue of resource dependency and internationalization in perspective of Korea's institutional logic and global business strategy.

Previous researches on this necessity of internationalization were limited to simply applying traditional business theories to analyze the international performance [2][3]. Though it is true numerous amounts of researches employed various approaches to achieve internationalization such as cultural norm, user knowledge, geological aspect, social capital, absorptive capacity, and more, these researches fail to offer an industry-specialized frame and are merely analysis on phenomenon of ICT contents industry. A professional Business- and industry- level suggestions on practical applicability also remains unanswered as well [4][5].

Modularity, a result of technological interdependence among firms, is another variable that the ICT industry must consider. A dominant platform manager exists in the center of the industry ecosystem – their role is to maintain control and distribute profits [6][7][8]. Thus it is inevitable for ICT industry firms to acknowledge and comply with the platform manager's influence. Likewise, carrying out an internationalization strategy must also take place with awareness of opportunities and threats that the relationship with the platform may result in. The organizational theory names this relationship as a state of resource dependence [9][10].

A platform offers a supply channel to content-based firms, because the platform possesses and manages the customer base. Not surprisingly, the firms compete to have their products chosen by the platform [7]. As a result, this relationship morphs into a hierarchical structure where leading platform services such as Kakaotalk or Line wield absolute authority over content providers. In order for less competitive firms to survive this asymmetric relationship, a research on internationalization modes of ICT content-providing firms is in highly demanded. In fact, many ICT content providers are already seeking to expand more opportunities outside of Korea, due to complex organizational frictions and profit distribution issues. Because domestic resource dependence is not only an opportunity but also a restriction, minimizing uncertainty and exposure to wide spectrum of potential customers is the biggest intention behind the goal of internationalization.

Hence our study aims to understand the internationalization of Korean ICT content industry and reveal its properties of extreme competition – based on the Resource dependence theory, which lays its focus on the interdependence among firms. The theory assumes that

when firms face a problem of uncertainty in resource supply, they will turn to cooperation and business relationship in search of a solution. Yet this sort of dependence creates political issues among the business relationship, and causes disarray due to inappropriate influences that firms create against each other. To avoid such an outcome and to establish a long-term self-sufficiency, it is only natural for the firms to isolate themselves from such political realm. For instance, the firms' effort to step into the international stage is a strategic decision to release them from the resource dependency. Our research investigates this state of resource dependence in two aspects: resource distribution perspective and relationship perspective. We will attempt to perform a statistical justification of our research by verifying the hypothesis through 106 decision-makers of various Korean ICT content firms. The layout of this research takes place as the following sequence. Firstly, in-depth literature review on internationalization of Korean ICT content firms will be laid out. Next, resource dependency theory – based improvements and hypothesis to the introduced researches will be suggested following their underdeveloped and immature areas. Then, interpretation of the result and discussion will assist the validation of the propositions on methods to promote ICT industry and business strategy research.

2. Related Work

2.1 Internationalization of ICT Contents Business

Traditional research on internationalization of ICT Contents enterprises tended to discuss the overall IT industry instead of focusing on specific segments such as user-specific service, game, and application [1][3]. Many of those researches mentioned strategic change, social assets, and absorptive capacity in the process of studying the new fields, and insisted that organizations will achieve innovational performance when as utilize these knowledges [2][4]. Thus, majority of the researchers at the time assumed that it was the best practice to discover the new international market, expand the growth potential, and shape a multilateral business portfolio [5]. Some other proposals on the internationalization of ICT enterprises that internationalization of R&D must accompany stage-by-stage approaches, and suggestions of considerations in addition to simply operating in the global stage [6]. For example, India leads the world in ICT industry's outsourcing, because of the inexpensive labor and English-based communication. And because entrance of an ICT contents firm into a new market requires adaptation of the firm to the new market's economic condition, regulations, culture of the site, and more, the entering firms must actively communicate and investigate the new market instead of reproducing previous success factors, to acquire appropriate business values [7].

Then, what would be the role of ICT firms attempting to expand into the international market? Traditional theories criticize on the competitive structure yet avoid addressing the issues directly. Traditional discussions explained the difficulty of the industry's long-term profitability with the fact that the ICT content industry is a naturally competitive market due to limited customer base and its low entry barrier [8]. Other reasons include overwhelming number of firms with resembling services, influence of platform managers, and conservative governance of the industry. Thus, this research expands its scope to cope with such issues. Likewise, traditional researches limit their subjects to the ICT contents industry participants, though other key players such as government, financial sector, venture capital, platform firms, cooperating firms and more must be taken into consideration. And although ICT content enterprise researches do mention the pertinence of the resource in an environment where firms influence each other with modularity, technological interdependence, and more, the discussion

on how they behave under an imperative decision making process cannot be found. Thus, in order to apply the characteristics of resource and interrelationships, this research will ponder on resource dependence theory, which is a blend of authority theory and resource exchange theory.

2.2 Internationalization based on Resource Dependence Theory

Resource dependence theory states that in order for a firm to protect and improve itself, it must acquire the needed resource from another firm in some way, creating an unbalanced interrelationship and influence among firms [9][10]. Many resource dependence related researches studied the strategies that bypass this instability. For example, if a firm is eager to acquire financial resource, it would recruit a professional financial consultant into its interlocking board and make use of him or her to secure the needed resource [11]. And if another firm seeks technological advancement to overcome the fierce competition, it would form an alliance with another capable in-house R&D firm. In summary, resource dependence theory - based on the researches focused on the relational arrangement that firms form in order to acquire core resources or to maximize the survivability of their own sake [12].

In terms of resource dependence theory's perspective, how can an ICT contents firm's effort and motivational factor to move out of a local market and invest into the international market are explained? We point at the resource distribution, needed to maintain the dependence and business relationships with the personnel of interest, to be responsible for the said motivation. ICT contents firms are interrupted and influenced by platform suppliers who design the technical frame such as telecommunications and device manufacturers. A firm must continuously communicate and share the values, while securing the opportunity to approach the consumers [9][13]. On the other hand, the government, the regulator of ICT contents supply community, and the financial sector, the decision-makers on strategic investments, make considerable players in this field [14][15]. Thus, their influences are both an opportunity of successful resource supply and a constraint as imposers of restrictions. If a change of market's environment or its rent-seeking costs the sacrifice of ICT contents firms, the local market would rather be a more appropriate atmosphere to mature [16][17].

The degree of resource distribution is another key factor in decision-making of internationalization [4][7]. Resource dependence theory suggests munificence and security as the two most important factors [9][10]. For instance, assume that a hypothetical market has high potential for profitability. Even with high compliance in game/service contents and superior marketing environment through WoM (Word of Mouth) and user community, a lack of institutional trust may cause unlawful replications and infringements that ruin the business activity – a case especially common in China [15][17]. Thus, it is imperative to locate an attractive industry. Above case may be interpreted as the firm's exposure to customers being limited, and hence difficult to accumulate resource availability. The availability of skilled labor required to develop new contents is another value to consider – China and India, a market with plethora of skilled labor, provide inexpensive labor and flexible employment supply as opposed to Korea's low resource availability as an outcome of high education standards [18].

Finally, resource concentration is an indispensable component of internationalization process [19][20]. If an industry is overly monopolized, the market's governance is shaped in favor of the firm in possession of the monopoly and hampers the chance of coexistence with other firms [21][22]. The source of disruption may be telecommunication enterprise in perspective of an ICT contents firm [1][8]. Large-scale enterprises with endless access to users such as Facebook, or those with control over the device market such as Apple, Samsung, or

Shaomi may be the monopolizing syndicate to many other firms. With accumulated resource and unchallengeable influences, these large enterprises choose which firm to work with - greatly in their own favor and in consideration of a possible long-term partnership.

Socially structured nature of Resource dependence theory names two most essential variables to consider: autonomy and legitimacy [14]. Although firms fundamentally rely on other organizations to acquire the required resources, repeated profitability and business success usually results in an attempt to reduce dependency and possible political risk [15]. For example, many mobile game firms that survived through mobile messengers as platform declare independence from the platform provider when long-term profit is highly probable. Likewise, many ICT startups seek large-scale enterprises expecting to benefit from umbrella effect, yet this decision may impair the brand's reputation. Resource dependence theory considers autonomy and legitimacy as restricted by the properties of market environment; in other words, it has limited carrying capacity. Thus, if acquisition of autonomy and legitimacy is distant, it is highly likely that seeking opportunities in the global market is often a wiser decision.

3. Research Hypotheses

Intra-industry dependence is defined as the relationship formed between an ICT contents firm and an organization that resource is supplied to, such as platforms, alliances, or other firms of the field [7]. Resource dependence researches claim that an asymmetric relationship develops if a firm's core resource is owned by another firm. Pfeffer [12] insisted that a firm is greatly influenced by other firm's behavior and results in increased uncertainty under the state of resource dependence. Within ICT business ecosystem, game, SNS, and other applications or services, it is common for the content providing firms to modify their software specifics or the profit model. Likewise, because large-scale telecommunication firms have control over the technological standards and regulate the online and offline supply chain, ICT contents firms have no choice but to be dependent on this network.

In such environment, what ICT contents must acquire is self-sufficiency [5][7]. By developing internal R&D activities, firms obtain patents and release innovative services to build up its competency. This self-driven effort to shape an ICT firm's development is defined as autonomy. Prior discussion on resource dependence stated that firms attempt to rely on core resources through political relationship in the short term, yet seek independence in the long-term [9][10]. A firm expanding into global market is bound to rely on other global firms for the knowledge and network needed to carry out the business, but seek to establish an independent enterprise once resource acquisition and confidence is built. Thus, the following hypothesis is declared.

Hypothesis 1. Intra-industry dependence strengthens seeking legitimacy.

Efforts to escape the state of dependence not only enhance an ICT content firm's competency, but also continue to promote social reputation and the relationship with the institutional environment [19][21]. This study defines seeking legitimacy as the effort to build brand asset through propaganda, relationship with governmental agencies, and obedience of social rules [20]. Legitimacy is an intangible asset that includes reputation and trust by audience in order to sustain the business activity [19]. A firm may be known as stable within a single, large-scale platform manager and form a dyadic relationship [17]. For example, game firms in early stage advertised the platform that their content is supplied to, in order to share the brand identity and

develop social reputation. However, once the attractiveness of independent products grows and public support is built, it is common to seek change through alliance with different partners or by managing the degree of the relationship. Thus, the following hypothesis is declared.

Hypothesis 2. Intra-industry dependence supports seeking autonomy

Dependence to external field is defined as ICT content firm's relationship with other organizations such as government, the press, venture capital, financial sector, and etc. [15][17]. Many ICT content firms rely on debt financing, such as investments or loans, to start the business [8]. Governmental support on startups and promotions build the base funds, and continuous in-house R&D takes place to achieve innovation [14][16]. Similarly to typical manufacturing and service fields, most of the external funds have pre-defined usage in which ICT content firms publicize or report the details on where and how the funds were spent in. The government demands a yearly report of business performance to be shared, in trade of the governmental support. Thus, individual firms attempts to achieve development of their own contents and market entrance in order to overcome the limitation that their long-term business purpose has set. Occasionally, venture capitals or the government defines the incentive policies in order to evaluate the innovation of firms and induce further development. Thus, the following hypothesis is declared.

Hypothesis 3. Dependence on external field strengthens seeking autonomy.

Dependence on external field offers two functions within the ICT industry ecosystem. Firstly, it operates as a monitoring system to prevent opportunistic behaviors of firms [7]. Once public funds are invested on firms, the recipient firms are bound to disclose its usage and publicize that the capital is used on lawful business management; this results in the ICT contents firms receiving institutional support. On the other hand, legitimacy can also be built by recruiting directors who possess wide social asset or through propaganda [13]. Not surprisingly, these decisions are sometimes demanded by the providers of the fund as a consulting manner [15]. In summary, legitimacy may be acquired by political embeddedness between dependent firm and the provider of the fund. Thus, the following hypothesis is declared.

Hypothesis 4. Dependence on external field strengthens seeking legitimacy

Uncertainty of resource availability is defined as the risk and difficulty either from the core resource's depreciation of value over time or abrupt change of the industry reducing possible partnership candidates [13]. For example, ICT contents firms may find their customer network uncertain due to immense advertising force exerted by SNS firms [7][8]. Once a firm is dependent on a source of resource, it becomes difficult to cooperate with other organizations – a lock-in effect. This is because an economic and social cost arises in the process of forming a new relationship. Thus, investment into specific resource dependence state equates a high risk, opportunity cost, and uncertainty in an ICT content firm's perspective. In this case, instead of relying platforms, individual firms must sharpen their marketing capability to secure their own channel, prepare for worst case scenarios, and expand internal discretionary authority. Thus, the following hypothesis is declared.

Hypothesis 5. Uncertainty of resource availability strengthens seeking autonomy

One of the strategies that firms choose in order to resolve the uncertainty of resource availability is to turn the business atmosphere in their favor by influencing either the external environment or the opinions of the related personnel of the field [12][15]. This phenomenon is named enactment of environment according to the resource dependence theory [17]. For instance, ICT contents firms actively advertise the values, strengths, and justification of their business [8]. Public campaigns and events take place in order to draw the attention of potential customers. These activities are aimed to impress the consumers with an image of a good-willed enterprise, a strategy to directly influence the environment to improve the firm's survivability [10]. This result is interpreted as uncertainty of resource availability reduced by constituting legitimacy [12]. Recent increase in the amount of investment on offline advertisement by mobile and online game firms explains their intent to improve their business image. This approach is not only aimed to increase brand attractiveness, but also to inflate the social influence of the game industry within the ICT contents field. Thus the following hypothesis is declared.

Hypothesis 6. Uncertainty of resource availability supports seeking legitimacy.

Resource is said to be concentrated when a resource that an ICT contents firm needs for further business development is possessed and monopolized by other players in the market [19]. In this case, the platform or network governor is either overly controlling the market or has significant influence over the market [8]. In such scenario, in order for an individual firm to successfully secure the needed resource, it has no choice but to obey the norm of the market [10]; some examples include platform governors claiming major portion of the profit, abusing the rating of the product in app market, and etc. [7][12]. This constrained opportunity causes ICT content firms to create new market or develop a unique field to bypass the discussed obstacle. Thus, the state of resource concentration, similarly with resource unavailability, implies that the business ecosystem accompanies the element of uncertainty - an abrupt and disastrous change in the business ecosystem, such as subprime mortgage or European debt crisis, may threaten the survival of even the largest enterprises in the market [6]. Thus, the state of resource concentration imbues uncertainty to both the search of opportunity and partnership, possibly forcing the ICT contents firm to survive on its own. Thus, the following hypothesis is declared.

Hypothesis 7. Resource concentration supports seeking autonomy.

In turn, business environment with high resource concentration imbues identity to the businesses belonging to the market [7][12]. Two monopolizing platform providers, Android-based Google Play and Apple appstore, are appropriate examples – different and unique applications, products, and participating firms give an impression of two encampments in conflict. Consumer's evaluation of each ICT contents firms in such scenario projects a passiveness of the market, highlighting the importance of brand advertisement investment strategies to overcome this state of dependence. Especially when the market has high resource concentration, it is difficult for content firms to be evaluated solely on the product's capability and attractiveness. It is more common to rely on political insight utilized to decide on which content firms to support [18][19]. In this sort of environment, each ICT contents firms tend to invest on legitimacy In order to improve brand value and social reputation.

Hypothesis 8. Resource concentration strengthens seeking legitimacy.

Our research considers that there exists a causal relationship between the efforts of ICT content firms to acquire unique capabilities and the goal to achieve legitimacy. In order to achieve autonomy, it is imperative to not only establish a customer base of its own, but to be seen and embedded as an independent and competitive enterprise [17][18]. Because ICT contents firms operate by interacting and engaging the audience to yield profit, the firm must maintain continuous persuasion and clarification of the values and experience that the firm's system will offer [7][8]. To achieve this, the firm must organize shared identity of the users by manipulating the user community [4][5], while emphasizing the application's aesthetic and functional values [7][10]. Seeking legitimacy is closely related to the audience's taken-for-granted value to influence the explicit and implicit behaviors [15][16]. For example, firms within the ICT contents ecosystem that succeeded in building independent competencies, such as Electronic Arts or Blizzard, actively advertise that using their products are nothing more than accepting the technology [7]. Likewise, these firms actively expose that there are specific group of users who fill up the majority of the sales profit. Their advertisements suggest that using their service is the newest trend and that the modern value is acquired from doing so. Thus, the following hypothesis is declared.

Hypothesis 9. Seeking autonomy strengthens seeking legitimacy

This research defines internationalization strategy as the effort of firms to unbind themselves from the local borderline and developing undiscovered markets. Most of ICT based contents modify and adapt the properties of their services and products in favor of the new users, or take a storytelling approach to release a new product specifically aimed for that market [4][7]. Different base of customers require differing culture, perspective, regulation, and marketing strategy [5][6]. In the process of developing a product that attracts the new base of customers, the firm's technological process changes as well. In order for this process to be successful, firms must continuously seek independence from platform providers and partnered firms because consumers vary in the platform that the service is provided. In addition, pursuing autonomy can be interpreted as more than repeatedly exploiting their own strengths – they are investing for future and exploring for opportunities [7][8][22]. By possessing their own discretionary authority, each firm are capable of securing their source of innovation and an organizational architecture which allow more active adaptation against the abrupt changes that the global market exerts [10][12][21]. Possessing a world-wide customer base is identical to wielding a negotiation power against the platform. Thus, planning a long-term growth through active internationalization strategy for pursuit of autonomy is one of the focal points of this research.

Hypothesis 10. Seeking legitimacy strengthens internationalization strategy.

The relationship between Legitimacy and internationalization strategy can be explained with the goal of successful entrance into the world market through the globalization of Korean firms. Many ICT contents firms that receive governmental support are in self-examining process whether they are prepared for the globalization [3][5], by employing international human resources and launching products in foreign markets. In some cases, they arrange specialized projects to test out internationalization and expand the political relationship

[2][3][6]. In perspective of seeking legitimacy, obeying the norms of the new market is closely related and thoroughly justified for the international strategy [12]. It is notable that products of high foreign interest tend to attract local consumers as well. Typically, a success of a product in foreign market is a good standard of quality and reputation. Thus, the following hypothesis is declared.

Hypothesis 11. Seeking legitimacy strengthens internationalization strategy.

4. Data Collection and Measurement Tools

This research considers Korean ICT contents firm as the objective of analysis. We performed a survey on firms that are verified to produce consumer-targeted ICT contents, and excluded any platform, device, or network producers according to the classification of industries reported by the Ministry of Science, ICT, and Future Planning (MSIP). A total of 110 firms were chosen, and two C-level decision-makers (CEO or CFO) were surveyed (**Table 1**). Based on the type of product, the firms were classified into Video, Map, Game, Education, Lifestyle and etc. Out of 220 surveyed, 212 completed surveys were returned. We believe that the high return rate were due to the fact that public institutions were cooperating with our research.

Table 1. Respondents Characteristics

N=212	Variable	Number
Gender	Male	172
	Female	40
Age	Under 30	30
	30-40	122
	40-50	20
	Above 50	40
Education	Undergraduate	131
	Master	60
	MBA	11
	Ph.D.	10
Years	Under 10 years	11
	10-20 years	160
	20 years	41
Career Experience	Strategy	111
	R&D, Design	71
	Marketing	30

In order to design the survey layout in relation to the variables and to establish validity, we executed common method bias [23]. This was because of the statistical convenience from the possibility that a surveyee of independent variable and that of dependent variable may overlap. Because this research made use of a single measurement method to distribute and collect the survey papers, we were unable to differentiate source of respondents or measurement environment. Thus we have examined and confirmed the single factor were less than 25%, making use of Harman's single factor analysis. As no related issues were found, we have concluded that common method bias did not exist in our research data. The characteristics of questionnaires are listed in the following (**Table 2**).

Table 2. Survey item

Constructs	Item	Reference
Dependence to Intra-industry	Dependence on Platform businesses or managers	[7]
	Highly reliant on appstores (such as Google Play)	
	Number of alliance with similar content firms is high.	
	Platform managers are crucial in our business.	
Dependence to External fields	Dependence on government, financial sector, and other external environment	[8][9]
	Receiving high amount of governmental support fund	
	Acquired high amount of resources from the financial sector(venture capital, bank)	
	Have strong support from the media/press	
Resource Concentration	Degree of Resource Monopoly	[9][14]
	There are few suppliers of the primary product	
	Market for primary product is dominated by 4 or 5 players	
	The top 5 providers of the primary product present 70% of the available product supply	
Resource availability Uncertainty	Uncertainty of Resource Availability	[12][13]
	Product availability in the market is highly uncertain	
	Uncertainties in creation and distribution are a problem	
	The market and its components are too complex	
Seeking autonomy	Pursuit of Unique Business and Identity	[12][15]
	Running a project to develop unique contents	
	Focusing highly on in-house R&D	
	In process of designing firm's own marketing strategy	
Seeking legitimacy	Efforts on Refining Brand Image and Reputation	[8][13]
	Investing greatly in online/offline advertisement	
	Attempting to establish a good relationship with the government.	
	Launching a user community for firm's public reputation	
Internationalization Strategy	Investment on internationalization Strategy	[3][4][5]
	Developing products specialized for the global market	
	Preparing for adaptation to foreign culture and language	
	Continuing employment and system investment efforts to successfully settle the product in the international market	

5. Analysis and Results

This research makes use of covariance-based Structural Equation Modeling to validate the hypothesis, and is using SPSS 18.0 and LISREL 8.54 as analysis tools [24][25]. The process of analysis is as follows. First, EFA(exploratory factor analysis) and CFA(confirmatory factor analysis) are performed to verify the fitness measurement model, ultimately to check on the reliability and convergent validity of the measurement tool [24][26]. Next, the correlation of latent variables was analyzed and discriminant validity was verified by constraint test. Once the fit indices of the structural model were confirmed, the validation of hypothesis took place.

5.1 Reliability and Validity of Measurement Tools

Varimax and principal component analysis were applied to execute EFA, and resulted with 7 components - all marked above 1.0 eigenvalues. All survey questionnaires did not contain cross loading, while all factor loading were greater than 0.6 [27]. They resulted in 76% explanatory power of the total variance. Table 3 lists the exploratory factor analysis results.

Table 3. Exploratory Factor Analysis Results

Variable	Item	Component						
		1	2	3	4	5	6	7
Seeking autonomy	SA2	.848	.095	.176	.152	.107	.124	.146
	SA3	.825	.086	.118	.095	.150	.132	.192
	SA1	.761	.173	.056	.174	.177	.070	.281
Seeking legitimacy	SL1	.145	.875	.075	.138	.075	.003	-.013
	SL2	.139	.854	.165	.169	.015	.083	.072
	SL3	.021	.844	.190	.024	.120	.023	.163
Resource concentration	RC1	.112	.102	.848	.179	.106	.014	.103
	RC2	.144	.142	.799	.161	-.013	.128	.203
	RC3	.079	.222	.726	.193	.024	.063	.192
Resource availability uncertainty	RAU1	.195	.102	.315	.802	.166	.133	.062
	RAU2	.189	.063	.280	.795	.199	.062	.114
	RAU3	.073	.217	.064	.752	.003	.086	.262
Dependence to intra-industry	DI1	.133	.069	.034	.191	.780	.219	.054
	DI2	.071	.119	.065	.021	.776	.198	.119
	DI3	.209	.017	.025	.095	.767	.148	.219
Dependence to External fields	DE2	.271	.000	.056	.021	.145	.824	-.044
	DE1	.183	.003	.208	.073	.245	.735	.161
	DE3	-.116	.111	-.036	.172	.232	.698	.189
Internationalization strategy	InS3	.288	.104	.311	.185	.138	.193	.741
	InS2	.338	.063	.255	.215	.249	.033	.683
	InS4	.327	.163	.226	.203	.259	.187	.642
Eigenvalue		2.629	2.468	2.449	2.249	2.246	1.984	1.899
Variance (%)		12.521	11.751	11.664	10.707	10.696	9.448	9.042
Cumulative Variance (%)		12.521	24.272	35.936	46.644	57.340	66.787	75.829

Next, CFA were executed. By examining the fit indices of the measurement model, we acquired, $\chi^2=641.62$, $df=168$, $RMSEA=0.06(<0.08)$, $RMR=0.03(<0.05)$, $CFI=0.97(>0.90)$, $GFI=0.92(>0.90)$, $AGFI=0.90(>0.85)$, $NFI=0.97(>0.90)$, $NNFI=0.97(>0.90)$, a sufficient number to fulfill the measurement model's overall construct validity.

Table 4. Results of Convergent Validity and Reliability Testing

Variable	Item	S. Loading	t-value	AVE	CR	Cronbach- α
Dependence to intra-industry	DI1	0.75	-	0.544	0.781	0.779
	DI2	0.77**	22.43			
	DI3	0.69**	19.38			
Dependence with external fields	DE1	0.82	-	0.533	0.772	0.731
	DE2	0.71**	19.65			
	DE3	0.65**	18.49			
Resource concentration	StI1	0.83	-	0.673	0.860	0.871
	StI2	0.84**	28.36			
	StI3	0.79**	24.62			

Resource Availability uncertainty	RC1	0.82	-			
	RC2	0.80**	24.43	0.615	0.827	0.824
	RC3	0.73**	21.69			
Seeking autonomy	SA1	0.81	-			
	SA2	0.87**	28.37	0.701	0.875	0.873
	SA3	0.83**	26.78			
Seeking legitimacy	SL1	0.86	-			
	SL2	0.91**	30.14	0.655	0.848	0.829
	SL3	0.63**	18.31			
Internalization strategy	InS1	0.79	-			
	InS2	0.84**	27.47	0.667	0.857	0.858
	InS3	0.82**	26.33			

Note: The first item loading in each latent variable is fixed at 1.00 and does not have a t-value (**p<.05)

Then, convergent validity and reliability showed that the standardized factor loading values were mostly above the standards [25]. The AVE values, Cronbach's Alpha, CR values of variables were all above the standard value, meaning that the survey elements had appropriate convergent validity and reliability. Detailed results on convergent validity and reliability verification are listed in Table 4.

The discriminant validity of the measurement model in Table 5 showed that the square-rooted value of AVE was found to be higher than proximate lateral and longitudinal correlation values, while the correlation values were mostly below 0.6.

Table 5. Correlations between Latent Variables

Variable	Mean(S.D.)	1	2	3	4	5	6	7
1	3.47(0.64)	0.74						
2	3.21(0.70)	0.64**	0.73					
3	3.54(0.77)	0.25**	0.19**	0.82				
4	3.04(0.79)	0.25**	0.34**	0.44**	0.78			
5	3.80(0.65)	0.48**	0.46**	0.34**	0.43**	0.84		
6	3.20(0.62)	0.43**	0.39**	0.37**	0.61**	0.48**	0.81	
7	3.67(0.70)	0.60**	0.53**	0.39**	0.66**	0.73**	0.61**	0.82

Note: 1 Dependence to intra-industry 2 Dependence with external fields, 3 Resource concentration, 4 Resource availability uncertainty, 5 Seeking autonomy, 6 Seeking legitimacy, 7 Internationalization strategy (Bold number shows the square roots of AVE for that construct, **p<.05)

Yet 6 combinations that did not meet the standard value (equal to or below 0.6) were validated through constraint test. As seen in Table 6, discriminant validity clearly exists in this research's questionnaires. In summary, the reliability, construct validity, convergent validity, discriminant validity was all satisfactory in terms of reliability and validity.

Table 6. Results of Discriminant Validity

Pair	Based χ^2 (DF)	Constrained χ^2 (DF)	χ^2 Test $\Delta\chi^2$ (Δ DF)
DI-DE	30.22(8)	251.85(9)	221.63***(1)
DI-InS	39.08(8)	449.24(9)	410.16***(1)
DE-InS	24.20(8)	575.52(9)	551.32***(1)
RC-RAU	29.47(8)	504.76(9)	475.29***(1)
RC-InS	44.24(8)	514.55(9)	470.31***(1)
RAU-InS	30.38(8)	688.05(9)	657.67***(1)

Note: DI(Dependence to intra-industry), DE(Dependence with external fields), RC(Resource concentration), RAU(Resource availability uncertainty), InS(Internationalization Strategy) ***p<.001

5.2 Testing the Research Hypotheses

As for the result of confirming the appropriateness of the structural model, the standard Normed $\chi^2=4.49$ ($\chi^2=771.43$, $df=172$) was slightly higher than 3.0, yet this is a common case with LISREL where the sample size is biased and causes χ^2 statistic to abnormally increase. The fit indices of other structural models appeared to be RMSEA=0.07, RMR=0.03, CFI=0.97, GFI=0.91, AGFI=0.88, NFI=0.96, NNFI=0.96, in which all figures satisfy the standard value.

Fig. 1 is analysis results on hypotheses through the SEM [24][25].

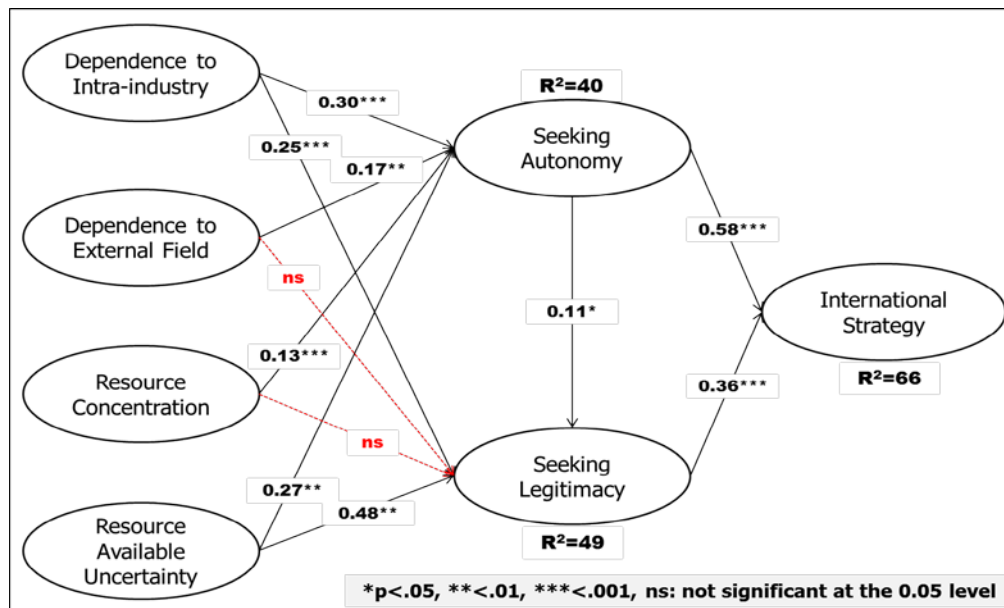


Fig. 1. Results of Structural Equation Modeling

To summarize the validation results, 9 hypothesis (H1, H2, H3, H5, H7, H8, H9, H10, H11)) out of 11 were supported, while the remaining two hypothesis (H4, H6) were rejected. The explanatory power of the structural model – seeking autonomy, seeking legitimacy – each had 40%, 49%, 66% respectively. Detailed validation results are as follows. First, H1 is validated (path coefficient=0.30, $t=5.32$) as the dependence to intra-industry was found to positively impact (+) the pursuit of autonomy. Secondly, dependence on firms of related field positively impacted (+) seeking legitimacy, validating H2 (path coefficient=0.25, $t=4.50$) Dependence on external environment and financial sectors positively impacted the seeking autonomy (path coefficient=0.17, $t=2.90$), validating H3 as well. However, its relationship between pursuit of

legitimacy could not be identified, and thus H4 was not validated (path coefficient=0.010, $t=0.19$). Thirdly, resource concentration positively impacted the seeking autonomy, validating H5 (path coefficient=0.13, $t=3.21$). However, its impact on autonomy was slightly insufficient to be convicted as positive (path coefficient=0.070, $t=1.82$). Fourthly, the uncertainty of resource availability positively impacted both autonomy (path coefficient=0.28, $t=6.19$), and legitimacy (path coefficient=0.48, $t=10.52$), validating H7 and H8.

Lastly, pursuit of autonomy positively increased ICT content firm’s pursuit of legitimacy (path coefficient=0.11, $t=2.30$) and the internationalization strategy (path coefficient=0.58, $t=14.15$). Likewise, pursuit of legitimacy positively impacted internationalization strategy (path coefficient=0.36, $t=9.76$). Thus, H9, H10 and H11 were all supported.

5.3 Post-hoc Analysis: Mediating Effects

In order to evaluate the influence of independent variable and appropriateness of MV, we have performed a supplementary validation on the interaction of MV and the experimental mediated effect **Table 7** [28][29]. In addition to the individual independent variables’ mediated effect, f^2 and Pseudo F statistical value were validated utilizing full model (with MV) and reduced model(without MV) to evaluate the appropriateness of mediator included in the covariance model. It is notable that the use of M7 (seeking legitimacy) and M8 (seeking autonomy) to basic model (M1) results in immense improvement in explanatory power. Research model M9, which includes both of the MV, shows the most effective explanatory power compared to the basic model (M1). As shown in M7 where interaction MV’s validation results relate to the dependence relationship, interaction of MV completely mediates the influence that dependence to external fields exert on international field, while partially mediating that of the remaining independent variables. The effect size (f^2) showed a high figure of 0.39. These analysis results answers the rejected hypothesis H4, as the interaction of MV was completely mediating dependence to external fields [30][31][32].

Table 7. Testing Results of Mediating Effects

Model	M1	M2	M3	M4	M5	M6	M7	M8	M9
Criterion(C)	InS	RC	RAU	RAU	InS	InS	InS	InS	InS
Independent Variables									
Dependence to intra-industry	0.39***	0.27***	0.27***				0.28***	0.35***	0.27***
Dependence to external fields	0.10*	0.17**	ns.				ns.	0.10*	ns.
Resource concentration	ns.	0.13***	0.09*				ns.	ns.	ns.
Resource availability	0.50***	0.25***	0.49***				0.40***	0.44***	0.37***
Uncertainty									
Mediating Variables									
SA (1)				0.48***	0.73***		0.40***		0.39***
SL (2)						0.61***		0.14**	ns.
R ²	0.64	0.36	0.46	0.23	0.53	0.37	0.74	0.65	0.74
Effect size (f^2)							Large (0.39***)	Small (0.03***)	Large (0.39***)
PseudoF							289.77	22.29	289.77

Note 1 : InS(Innovative), SA(Seeking autonomy), INE(Seek legitimacy)

Note 2 : M1(IV→C), M2(IV→MV1), M3(IV→MV2), M4(MV1→MV2), M5(MV1→C), M6(MV2→C), M7(IV,MV1→C), M8(IV,MV2→C), M9(IV,MV1,MV2→C), * $p<.05$, ** $p<.01$, *** $p<.001$, ns: insignificant at the 0.05 level. (Base Model: M1)

6. Discussion and Conclusion

This research has explored the primary factors of internationalization strategy that the ICT content firms under the state of resource dependence and static growth rate must consider. The motivation behind internationalization (such as Korean market's limitations) of ICT contents firms were discussed earlier, but researches on unique characteristics of networked ICT contents industry were clearly in shortage [5][32]. Thus, we have taken the perspective of resource dependence and studied the asymmetric relationship between ICT contents firms and platform, and influences that the relationship between ICT firms and government/financial sectors exerts on pursuit of legitimacy and autonomy [8][9][10]. As a result, it is shown that dependence to intra-industry is of high importance, yet dependence to external fields was only partially influential. This shows that current ICT contents firms set their strategy design and execution standards on internal industry rather than the external environment.

Resource distribution was an important factor to consider since the distributed opportunities determine the motivation of internationalization. Uncertainty of resource availability possesses strong influence. Resource concentration, referring to monopoly within an industry structure, shows limited effect. Thus, this research validated how risky it is to secure profit while under resource dependency. It is also validated that cooperation with other firms of similar field and the pursuit of legitimacy and autonomy has key relationship. The true motive behind the internationalization of ICT contents firms lie in overall uncertainty of the industry and the amount of influence that other firms exist is overly large. Thus, the decision makers who plan and execute the within the related industry would find such discussion useful.

Most researches contain drawbacks, and this research is no exception. Because the data was cross-sectional, secondary collection of longitudinal data is required. We suggest that further researches on this subject discuss the practical dependence relationships in addition to the decision-maker's dependence on resource. In a theoretical perspective, this research is meaningful as it applies the resource dependence theory on ICT contents industry. Most of the previous researches on this domain focus on exploring ICT contents industry as a zone of competition in an economic perspective, or observing the field's interdependency in a network perspective [6][8]. However, this research employs a more developed approach as it attempts to structurally study the incremental platformization of corrupted political relationships among the industrial participants. This research is also meaningful in a methodological perspective, as it performs a direct survey on decision-makers of individual ICT contents firms, enabling a detailed tracking of their strategic behaviors and intentions [12]. The scholarly contribution distinguishes this research from other studies that merely observe the changes of an industry with a quantifiable set of data.

Two practical implications exist for this research. Firstly, an intra-industry environment of competition and cooperation, rather than external factors such as influences venture capitals and governments, may be more effective in achieving internationalization of ICT contents firms. The government of Korea has been solely focusing on investment and production sponsorship for individual ICT contents ventures [8]. Not surprisingly, an essential consideration for the regenerability of firms within the industry and the quality of services as a source of competitive advantage were underestimated. Thus, it is imperative to not only make use of interdependency through governmental sponsorship and investments, but also to establish a self-driven growth through a thorough comprehension of the networks among intra-industry players of varying positions. Secondly, a more realistic and structured advices of the government on opportunity structure – a channel for individual firms to secure resources – is a necessity. Especially for resource-availability uncertainty, it is crucial for the

government to actively participate in a direct communication in order to acquire a comprehensive understanding about the obstacles that ICT contents ventures encounter. ICT contents industry of South Korea is expected to grow continuously with the creative industry. We account this research to initiate a more elaborative discussion on the success of firms through internationalization.

In the perspective of IT industry policy, many have criticized that Korea is under Galapagos syndrome [8], yet no research effort was made on where that constraint has aroused from. Since IT industry is co-innovation ecosystem – an investment on contents/service of a single firm impacts the overall network [7] – we were not able to completely detect all of the opportunities and limitations that this relationship creates. This research is meaningful as it offers the interpretation of complex scenarios that ICT content firms face, and as it attempted to explain the reason that ICT content firms not hesitating to leave the Korean ICT industry.

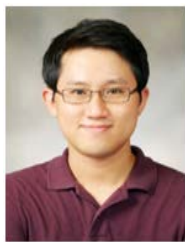
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