

Dynamic Analysis of Trust and Commitment Building

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Abstract

The aim of this paper is to create a deeper understanding of how small and medium-sized enterprises (SMEs) build relationships and commitment with partners who are distant locationally and culturally. We elicit the challenges in building global logistics value networks by examining Finnish SMEs entering and operating in emerging markets. Based on the interests and relevance of the companies involved, special focus is given to Finnish SMEs operating in China. Using a survey as a starting point, we introduce prevalent difficulties that Finnish SMEs are experiencing in overseas operations. Furthermore, building on the prevalent problems a system dynamics model is presented describing the dynamic nature of the identified factors. The model tries to capture the problems simultaneously from the viewpoint of the SMEs as well as from the partner's point of views. Both parties' interpretation of the actions of the other are biased, which is a significant factor in reducing trust between them. Trust and its cultural divergences are an important part of creating and maintaining commitment.

Introduction

An increasing number of Finnish small and medium-sized enterprises (SMEs) are doing business overseas. In today's highly competitive global business environment companies are looking for every bit of an edge in developed countries and are trying to be a part of the possibilities in emerging markets. For SMEs, finding new partners is very time consuming, costly and difficult, especially when operating in a new country with an unfamiliar culture and language. As a result, Finnish SMEs – together with others – are facing a lot of difficulties and setbacks in developed countries as well as in emerging markets.

It seems that SMEs perceive collaboration, especially the failure of collaboration, with partners as an external factor that is difficult to influence. Another point of view is to regard the level of collaboration as an internal variable that is highly dependent on the company's own actions. Obviously, for a mutually beneficial cooperation both parties need to be able to benefit financially, i.e. the product or service needs to be competitive,

the market segments need to be large enough to enable penetration into the market, the timing needs to be chosen wisely, etc. However, in this study we are assuming that these prerequisites are satisfactory for mutual collaboration. Our interest lies in the interconnections driving the collaboration and commitment in the long-term and how cultural aspects influence these. To obtain a deeper understanding of the cultural aspects, this paper concentrates on how Finnish SMEs operate in China.

We are interested in discovering how, when operating in a network of multiple actors, firms develop a mutually beneficial collaboration, and we have therefore focused our interest on SMEs' own commitments and their partners' commitments. The commitments of both parties are highly interconnected and cannot be understood in isolation. In order to understand how to increase a partner's commitment, we also need to understand how the partner perceives and is affected by the SME's commitment. In some cases, past company actions or inactions may produce an unintended environment in which a partner is acting opportunistically with purely their own self-interest in mind. To uncover the formation of such an environment, a system dynamics approach is applied that describes behaviour over time.

Many firms go into new markets incrementally in order to learn the culture and acquire knowledge of the markets before making large investments. This is a natural way to operate and is also suggested as a good strategy by Johanson and Vahlne (1977). Partnership building can be a time-consuming and slow process. However, the companies themselves see the importance of keeping partners motivated and also of having good personal relationships with them. This is especially important at the beginning of a relationship, when the trajectory of the mutual collaboration is set.

Lack of experience is seen as one of the reasons for slow progress when companies are penetrating new markets (Johanson & Vahlne 1977). Johanson and Vahlne argue that this is especially true with market-specific experimental knowledge, which is difficult to acquire. Basically, it can be acquired by hiring new personnel with the expertise or by engaging in the new market. The study by Barkema et al. (1996) also indicates that companies face cultural adjustment costs when engaging in new markets. Freeman and Sandwell (2008) have identified many sources of these cultural adjustment costs that act as barriers, for example, face-to-face communication, language, culture, daily work practices, and governmental regulations cause difficulties for firms. The interviews conducted in this project also support these findings. When companies form new partnerships with local companies operating in the new market, these sources of cultural adjustment costs play a significant role and affect the trust and commitment of both parties. Companies need to find collaborative partners in the early stages of their venture and build on top of these relationships. How can companies, especially SMEs with few resources, ensure that they choose their partners wisely? After choosing their partners, how can they ensure that the collaboration will be mutually beneficial? What are the systemic mistakes companies are prone to?

This is a difficult and topical question for SMEs, because they can rarely know beforehand whether the chosen partner is able and willing to provide long-term mutually beneficial collaboration, and thus the commitment building may be doomed to failure in any case. There are both internal as well as external reasons for the possible failure of the relationship; this paper will mainly concentrate on the internal reasons.

Problem Identification

A web-based survey was conducted in order to gather empirical evidence on company experiences in entering into and operating in emerging markets. In collaboration with the Management Institute of Finland (MIF), the survey was sent to approximately 5,500 company representatives taken from MIF’s contact database. The response rate was approximately 5% with 293 answers (see Table 1 for a profile of the respondents). Based on the survey, the prevalent risks and difficulties in operating in emerging markets were identified. The prevalent factors served as a basis for initial problem identification and focus for modelling efforts.

Table 1: The profile of the survey respondents. Total number is 293.

	Micro (fewer than 9 employees)	Small (10–49 employees)	Medium (50–249 employees)	Big (over 250 employees)
Export/sales	14	46	40	11
Procurement	1	2	1	0
CEO	53	65	26	5
Other	3	14	8	4
Total	71	127	75	20

In the survey, there were a series of closed-ended question relating to risks and risk management in emerging markets, and a few open ended questions relating to the challenges of operating in emerging markets. In the answers to the open-ended questions, there were two prevalent factors: 1) it is difficult, especially for SMEs, to find suitable and reliable partners, and 2) the resources of SMEs are often insufficient for operating effectively in emerging markets.

Two of the open-ended questions were: What are the biggest challenges in new export channels? If export activities to a particular country were to be abandoned, what would be the reasons for it? Answers to these questions revealed that one of the most difficult things for SMEs is building trust and efficient relationships with partners. There were numerous examples of unsuccessful attempts, and the next respondent comments capture a few of them

“The partner was a villain, as is the habit there.”

“Partner is constantly trying to deceive in small things.”

“We have terminated retail contracts because of local partners’ inefficiency.”

“Contract needs to be signed and sales started. How well the wholesaler is served will determine the rest.”

SMEs have rarely sufficient cash flow to support the expensive early investments into emerging markets or the costs of operating there effectively. This has consequences for finding new customers and partners as well as keeping old ones.

“Communications with partners needed to be reduced due to cost savings.”

“Agent network needs to be expanded but our sales resources are inadequate.”

The survey revealed that SMEs are well aware of the risks in, among other things, collaborative activities. Also, the SMEs see risk management tools as a useful method to manage risks; however, there the utilization of risk management tools is not in line with the perceived usefulness of the tools. There are many tools for managing collaborative risks, although, before dealing with how to manage collaborative risk, we first need to understand how the collaboration and trust is created in the relationship. For example, Hallikas et al. (2004) have identified the need for risk management approaches that could also address the dynamic complexity in the operating environment.

Trust and Commitment

Trust between individuals or organizations is an expectation that the partner will not behave opportunistically even in situations where there are incentives to do so. The commitment of partners is, then, the degree to which they expect to continue their relationship despite the existence of alternative partners. A committed partner is willing to make short-term sacrifices so as to create and maintain a stable long-term relationship (Anderson and Weitz 1992). The survey conducted indicates that Finnish SMEs are struggling to find committed and trustworthy partners in emerging markets. However, great commitment or an acceptable level of trust are not instantly formed, but instead, they are something that need nurture and management. Trust evolves over time as parties observe and interact with one another (Mayer 1995). The dynamic nature of the perception of a partner's trustworthiness was also apparent in the survey as reflected in one respondent's reply

“Local partner was unreliable, which became clear little by little.”

Zeffane et al. argue that feelings of loyalty and commitment are formed through trust, and that effective two-way communication are an essential element in building and maintaining trust (Zeffane et al. 2011). Luna-Reyes et al. studied the dynamics of interpersonal trust, analysing how one person develops trust in another and how past perceptions create a bias through which observations are filtered (Luna-Reyes et al. 2004). Black et al. explored trust building and knowledge sharing in intergovernmental collaboration (Black et al. 2002). Rahman et al. identified factors that influence the development of trust and cooperation in contractor–subcontractor relationships. They found openness in sharing and receiving information and partners' performance to be important factors in building trust (Rahman et al. 2008). Anderson and Weitz studied making promises as a way to build and sustain commitment in distribution channels. They indicated that making partner-specific – non-redeployable – investments raises commitment for both parties. They also found that commitment is affected by one's perception of how committed the other party is. (Anderson and Weitz 1992)

Luna-Reyes et al. suggest that early efforts to build trust are more effective than those made later in the relationship (Luna-Reyes et al. 2007). Interestingly, the early stages of a relationship are also the most uncertain as there is less knowledge and less experience of the partner. The time when investments have the highest impact and reward is also the time investments have the highest risk.

Cultural Aspects

The fast growing Chinese economy attracts an increasing number of Western companies. However, the cultural and social differences between China and Western countries challenge Westerners to build a successful collaboration with local actors (Studwell 2002). A fundamental philosophical thought to influence individuals' behaviour in China is Confucianism, which includes basic principles, such as rites, family orientation, respect of hierarchy and 'guanxi' (Tu 1984, Fang 1999). The Chinese prefer to express their opinions implicitly because of rites. For example, if a Chinese really likes or wants something, he or she may not say it out loud but may give a hint by praising it instead. It also holds true that the Chinese are modest: someone would say 'I'm not good at it' even when he or she is the expert in the field. This is a very typical example of high context communication: when the information is implicit, it requires more background information to understand the real meaning of the message (Hall 1976). Naturally, it creates an understanding gap for Westerners, who are used to express more explicitly in messages in a low context communication scenario. (Hooke 2012)

'Guanxi', an interpersonal or social relationship, is central to Confucianism. It demonstrates one's position or role in the social network to provide security and trust (Hammond and Glenn 2004). 'Mianzi', so called the Chinese face, is a key element in 'guanxi' development (Hwang 1987). For example, when a conflict emerges, a Chinese person will usually not react to it directly in order to save the other party's face; otherwise, it may easily cause a problem in the relationship if someone feels they are losing face. 'Renqing', so called favour, is another inherent element in the development and maintenance of 'guanxi' (Wu 1994). It involves the exchange of mutual benefits. The one who receives 'renqing' is supposed to pay it back when required; otherwise, he or she will feel they are losing face. Usually the 'guanxi' development takes time before the mutual trust has been built; therefore, long term orientation exists in the 'guanxi' network. It is not easy to break an established 'guanxi' once both parties wish to keep the relationship through 'renqing' and 'face'; however, it is also difficult to rebuild a broken 'guanxi' with the Chinese (Wu 1996, Mavondo and Rodrigo 2001). Meanwhile, the interpersonal relationship is a key part of interorganizational relationship in China (Ambler 1994, Mavondo and Rodrigo 2001), which reinforces the importance of 'guanxi'.

Apart from the long tradition of Confucianism, the Chinese contemporary situation also influences individuals' behaviour. The Cultural Revolution initiated by Chairman Mao in the 1960s, to some extent destroyed religious faith and deepened the trust gap between individuals and the government. The economy has been booming for more than 30 years since Deng Xiaoping's 'open door policy' in 1978. However, the former belief system has not been fully rebuilt and a new legal system is not yet mature. Hence, the

Chinese do not trust one another as much as they used to. The starting point for interpersonal trust is already lower than in rule-based societies such as Finland. This increases the difficulties for Westerners to find appropriate partners in China. Normally, there are three types of ways to find a partner in China: bottom-up, middle-tie and top-down. The bottom-up approach is via the individual's connection; however, it can hardly win the partner's trust if it is not based on the established 'guanxi'. The middle-tie is through the resources at the organizational level, so it depends very much on the company's own reputation and network in its field. The top-down approach is usually driven by the government, for example, a business delegation visit may facilitate the finding of potential partners, who are relatively trustworthy even without an established relationship.

Partner Dynamics

The purpose of the model is to understand the dynamics of the commitment building process. The model contains nine feedback loops (five reinforcing and four balancing), which will be discussed in more detail in the chapter following.

The model is built from the SMEs' point of view. SMEs are trying to build a strong relationship with partners in order to support sales and distribution of goods in a target market. For now on we will use terms *SME* and *partner* in order to distinguish the players and in order to make clear the position each player has, i.e. the *SME* is the one who is seeking opportunities in new markets (e.g. a Finnish SME operating in China), and the *partner* is the one operating in the market into which the SME is trying to penetrate.

Model Description

The model is based on variables and causalities identified from interviews conducted with six Finnish SMEs operating in emerging markets (e.g. China, Russia, the Middle East), on a survey directed at Finnish SMEs operating overseas as well as on a literature review. The model is kept quite general on purpose, and as such it serves as a guideline to improve understanding of the dynamics of commitment building. We are also interested in identifying heuristics so as to increase the possibility of developing good, mutually beneficial relationships with partners, and therefore we want to understand how the consequences of the actions of a SME seeking partners can undermine the work it is doing in establishing good relationships. The unintended consequences and side effects usually arise because of a lack of understanding of how the system works, and because there are only limited resources available at any given time.

The model has four stocks:

- *Partner's Commitment*: How committed the partner is to collaborate with the SME.
- *Partner's trust*: How much the partner trusts the SME.
- *SME's Commitment*: How committed the SME is to collaborate with the partner.
- *SME's Trust*: How much the SME trusts the partner.

The Partner's Commitment and the SME's Commitment depend on different variables. This is due to asymmetries in the relationship. The *Partner's Commitment* is mainly dependant: a) on how much the partner trusts the SME, b) on the partner's perceptions of the reward potential of the collaboration, and c) on the service level the SME can offer, whereas the *SME's commitment* depends mainly on how much it trusts the partner, on the reward potential coming from the collaboration, and from the perceived risk of the relationship. So, the main difference is that the SME is serving the partner and not vice versa, since the value to the SME comes from how well the partner is able to serve the customers.

Trust is an important factor in the model as well as in the SMEs' daily business, as the survey and literature illustrates. In the model, trust is dependent on the asymmetry of the commitment levels of partner and SME. The higher the commitment levels are, the larger asymmetries the parties are willing to tolerate. The default level for trust is set to one, and both parties adjust their trust level downwards if the commitment level of the other party is smaller than their own. Trust regenerates slowly all the time, and the target value is set to one. Also, no faster adjustment back to the default level is possible, even though one party's commitment level is higher than the other's. This means that their decision making is assumed to be biased.

Table 2: Stocks used in the model and the driving inflows and outflows for commitment and trust levels.

Stock	Units	Driving inflow	Driving outflow
SME's Commitment	Commitment Unit (0->)	<i>Reward Potential</i>	<i>Partner's Trust, Risk of Partners Opportunistic Behaviour</i>
Partner's Commitment	Commitment Unit (0->)	Time spent serving partner, Reward potential	<i>SME's Trust, Power Used over Partner, Number of Partners Used</i>
SME's Trust	Trust Unit (0-1)	Trust is built slowly all the time	<i>Asymmetries in Commitments</i>
Partner's Trust	Trust Unit (0-1)	Trust is built slowly all the time	<i>Asymmetries in Commitments</i>

partner. If the partner sees that the SME is using parallel partners just for the sake of reducing risk, then the partner is likely to see himself as replaceable.

- **R4: Misuse of Power:** The more the SME is dependent on its partner, the less it is able to use power over that partner. This increases the *Partner's Commitment*, which furthermore increases the *SME's Commitment*, and therefore the *Dependency on the Existing Partners*.
- **R5: Serving Partners:** The more committed the SME is to the partner, the more willing it is to serve the partner, which increases the *Partner's Commitment*. Finally the *Partner's Commitment* will cause the *SME's Commitment* to increase. This is an important positive feedback loop, especially at the beginning of the collaboration when the *Reward Potential* is not enough high to drive the system. For a detailed description, see (Anderson and Weitz 1992). Serving the partner is also related to overall communication, which also has indirect ways of affecting the system that are not taken into account in the model. For example, increasing communication would probably cause perception delays to shorten, because the formal communication also means transfer of intangible knowledge that would otherwise be missing.
- **R6: Lack of Resources:** The greater the *Number of Partners Used*, the less time there is per partner (assuming our resources stay the same). This creates a positive feedback loop: More partners causes less time per partner, which in turn diminish the *Partner's Commitment*. This will lead to a decrease in the *SME's Commitment* because of a decreasing *Reward Potential*, and will further cause a need to increase the *Number of Partners Used* to compensate for the loss of *Reward Potential*. In many cases, SMEs lack extra resources and are cautious about hiring new employees, and therefore increasing the *Number of Partners Used* results in pressure on existing resources (Sorasalmi et al. 2014).
- **B1: Partner Left Alone:** The *Partner's Commitment* is built by investing time in the cooperation (e.g. cultivating personal relationships, arranging trainings, developing customer service to meet partner's requests, etc.). The amount of time and resources a company is willing to invest in a specific partner depends on the *SME's Commitment* to the relationship; see loop R5. However, in some cases after the *Partner's Commitment* is increased to a satisfactory level, that is, when the partner is seen to be committed enough to the collaboration, there is a temptation to reduce the level of service to the partner, mainly because of limited resources. This loop means that the SME is reducing the Time Spent Serving Partner, even though SME's Commitment level is high/increasing. This means that, in this case, the SME's Commitment level is not the problem, but rather how it is implementing this.
- **B2: Fear of Partner's Opportunistic Behaviour:** The SME's *Fear of Partner's Opportunistic Behaviour*, whether justified or not, prevents SMEs from focussing only on their existing partners; that is, SMEs are tempted to reduce the risk of their partner's opportunistic behaviour by increasing the number of their partners. In the short-term, this reduces the risk of their partner's opportunistic behaviour, but in the long-term it also diminishes the partner's commitment (*R3: Partner's Long-term Planning*, *R6: Lack of Resources*), which increases the probability of the risk we are facing.
- **B3: Adjusting to Partner's Commitment:** Discrepancies in SME's and partner's commitments causes asymmetries in commitment levels.

Discrepancies have an eroding effect on the SME's trust level, that is, how much we trust the partner, which further affects the SME's commitment level. Building trust is a slow process, whereas trust can easily erode, and therefore this balancing loop is susceptible, causing oscillation. It is likely that asymmetries in commitment levels cause stress on trust since the more committed actor in the collaboration is more vulnerable to opportunistic behaviour by the less committed actor, as Anderson and Weitz (1992) state. This is a very unsatisfactory collaboration for the more committed actor, and therefore this loop is trying to balance the trust levels.

- **B4: Adjusting to SME's Commitment:** This loop works the same way as loop B3, although in this loop is balancing the *Partner's Commitment* level to the *SME's Commitment* level.

Model Analysis

Simulation results of the commitment levels are presented in figures X and X. At this point, the results indicate, as anticipated, that the delays in the system (perception delays and adjustment times) have strong impact on the evolution of the commitment, especially on how fast the parties are able to build commitment. This means that difficulties in measuring the other party's commitment level (delay) slow the process and may also cause oscillation, as seen in the simulation results.

Seven scenarios were simulated:

1. *Base:* Partnership starts to develop slowly.
2. *Increase in SME's commitment:* The SME's commitment is boosted externally. The commitment levels increase rapidly, but high asymmetries in commitments cause oscillation and finally collapse.
3. *Increase in partner's commitment:* The partner's commitment is boosted externally. The commitment levels increase rapidly, but high asymmetries in commitments cause oscillation and finally collapse.
4. *Increase in SME's commitment (with slow adjustment times):* The SME's commitment is boosted externally and the adjustment times for changing the trust and commitment levels are longer. Slow adjustment times causes the differences in asymmetries to even out more effectively than in previous scenarios, and therefore the system is more robust.
5. *Reduced service to existing partners:* The partner's commitment is reduced in the beginning by lowering the service level. A vicious cycle starts from the beginning causing collapse of commitment levels.
6. *Investing in serving existing partners and deactivate loop R2:* The partner's commitment is boosted externally and loop R2: *Reward Cycle* is deactivated. The commitment levels grow relatively slow as the *Reward Cycle* is not boosting the collaboration and finally without the support of *Reward Cycle* the commitment levels collapse.
7. *Investing in serving existing partners and deactivate loop R2+B1:* The partner's commitment is boosted externally and loop R2: *Reward Cycle* and B1: *The Partner Left Alone* is deactivated. The commitment levels grow relatively slow as the *Reward Cycle* is not boosting the collaboration. The commitment levels will not collapse, because collaboration is supported more due to lack of the balancing loop B1.

Partner's Commitment

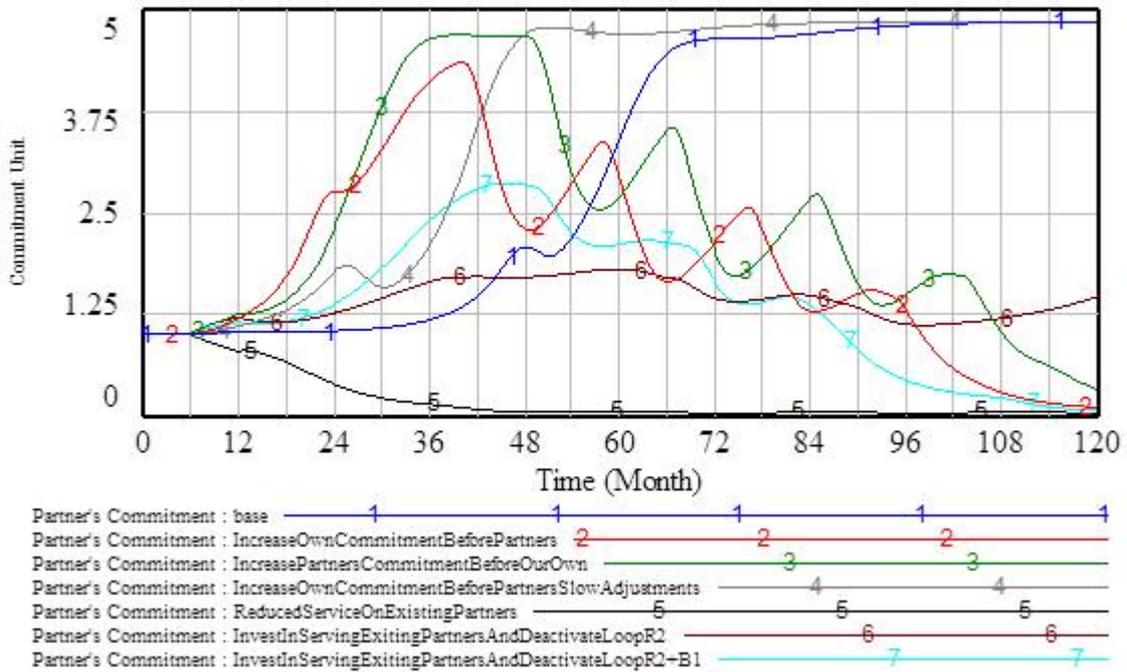


Figure 2: Partner's commitment: Seven scenarios.

Own Commitment

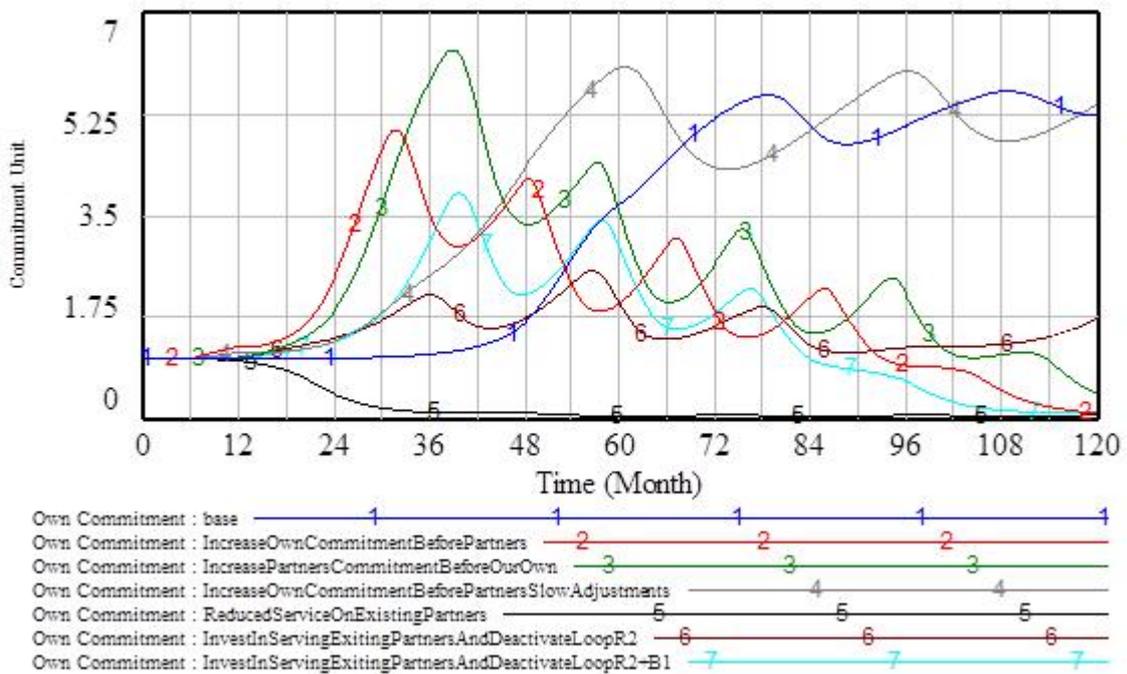


Figure 3: SME's commitment: Seven scenarios.

Sensitivity analysis was also tested: the model is most sensitive to parameter changes in the adjustment times that define how fast trust adjusts to asymmetries in commitment levels. Loop B1 is also very important regarding the behaviour of the model. If loop B1 is switched off, then the commitment levels are more robust to changes in delay and adjustment time values, and the commitment levels will converge to higher levels without risk of collapsing. Loop B1 seems to be responsible for most of the differences in commitment levels, because, when the partner's commitment increases, the SME is at some point satisfied with the commitment level and will reduce the time spent serving the partner, causing later differences in commitment levels, and therefore future problems to the collaboration. The worst scenarios are thus often the results of two main things: 1) The SMEs' own actions when they do not have the time or willingness to motivate, retain good relationships, respond rapidly to questions, or support requests from the partner, and 2) the gap between the SME's and the partner's commitment is causing changes in trust levels and then impacting commitment levels.

Main findings:

- Because of the positive feedback loops driving the system, the system is highly path-dependent, that is, the actions taken at the beginning of the relationship have significant effects on the "final" state of the system. If the commitment levels start to erode at the beginning of the collaboration, then it is very difficult to fix the situation and make the collaboration fruitful in the future.
- If asymmetries between the *SME's* and the *Partner's Commitment* levels increases too much, then the other party will become frustrated with the situation and the trust erodes, causing a lower level or even a collapse of commitment.
- If there is an attempt to increase the partner's commitment before the SME's commitment increases, then there is a possibility that the partner's trust erodes, causing a decrease or even a collapse in the partner's commitment. It is difficult to affect (or even know) the level of commitment asymmetry that the partner is willing to tolerate.
- If the *SME's Commitment* is increased before the *Partner's Commitment*, then there is a possibility that the *SME's Trust* erodes. However, it is possible for the SME to decide how much it is willing to tolerate asymmetries in commitment levels.
- The collaboration system starts to oscillate because the trust erodes easily but grows back slowly.
- If the commitment grows very fast, then there is a greater risk of having asymmetries in the commitment levels, and the commitment levels are therefore more likely to collapse. If the commitment grows slowly, then both parties are able to adapt to other's commitment level, and the system is more robust.

When operating, for example, in China, for foreign companies such as Finnish SMEs, the topics discussed can cause many kinds of difficulties. Finnish SMEs seem to be aware of the cultural problems, but they are still having problems. For example, when trying to establish the commitment too fast, it is possible that because of the perception and adjustment delays both parties are not able to adjust their commitment levels to keep the gap enough small. This can cause a partnership that has started well to collapse.

The findings can be considered initial and indicative, as the model needs further validation and analysis, which will be done later in the project. Especially the linkage between the cultural issues and the model behaviour needs to be elaborated more carefully. As stated earlier, the Chinese do not trust strangers as much as people do, for example, in Finland, and therefore the starting point for a relationship is lower. Also, we have divided the partnership finding and thus the starting point for the relationship into roughly three approaches: bottom-up, middle-tie, and top-down. These initial stages can be seen differently from the model's point of view:

- In the bottom-up approach, the relationship is based on earlier individual relationships or in the case of totally new relationship the 'quanxi' needs to be established before partner's trust can be won. In this approach, the initial trust levels used in the model can be either very high (existing trust relationship) or very low (relationship needs to be built from scratch). This approach is usually based on individual relationships, and the relationship is therefore non-transferable between persons.
- In the middle-tie approach, the starting point depends on the SME's reputation and network. For SMEs, building a good reputation and networks in emerging markets is a slow process, however. SMEs often use the established reputation and networks of old partners that are also operating in the target market. In this approach, individual relationships are not as important as in the two other. This makes it easier to change the person responsible for the relationship.
- In the top-down approach, if SMEs have the opportunity of joining the business delegations, the established relationships are on a higher level from the beginning. In this approach, relationships are mainly established between high-status persons.

Conclusions and directions for future research

Conclusions:

We have showed how the SME-partner relationship evolves over time, the main difficulties regarding (Finnish) SMEs operating in China and how these difficulties are visible in the system structure as well as in the behaviour.

The model illustrates the dynamics in commitment building in the context of SMEs operating overseas, especially in emerging markets and China. We have addressed the internal problems arising from collaborating with a partner, that is, we have sought internal explanations for the possible failure in commitment building process.

Future research:

Linking risk management methods and the model more strongly. From the risk management point of view, especially when dealing with collaborative risks, it is interesting to understand how the risk management tools that firms are using are

affecting the behaviour of the system, i.e. the commitment building process. Are there tools that are reducing the risk in one part of the system, but at the same time are increasing the risk in some other parts of the system? This is possible, if the tool used is eroding the trust and commitment of the partner, for example, the use of multiple partners.

The process of how a company perceives or measures their partner's commitment needs to be studied further, especially the possible biases. Also the effects of possible biases need to be tested with simulations.

At the moment, cultural factors are not strongly linked to the model. This will be an interesting topic for further research. For instance, are there differences in the model structure or only in the parameter values (e.g. in delays and adjustment times), or are the differences only company-dependent and not country/culture dependent?

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References

- Ambler T. (1994). Reflections in China: re-orienting images of marketing. *Business Strategy Review*, 5(4), 1–10.
- Anderson, Erin & Barton Weitz. (1992). The Use of Pledges to Build and Sustain Commitment in Distribution Channels. *Journal of Marketing Research*, 24, pp. 18–34.
- Barkema, H. G., Bell, J. H. J., & Pennings, J. M. (1996). Foreign entry, cultural barriers, and learning. *Strategic Management Journal*, 17(December 1993), 151–166.
- Black, L. J., Cresswell, A. M., Pardo, T. A., Thompson, F., Canestraro, D. S., Cook, M., et al. (2002). A dynamic theory of collaboration: A structural approach to facilitating intergovernmental use of information technology. Proceedings of the 36th Hawaii International Conference on System Sciences.
- Fang, T. (1999). *Chinese Business Negotiating Style*. Thousand Oaks, CA: Sage.
- Freeman, S., & Sandwell, M. (2008). Professional service firms entering emerging markets: the role of network relationships. *Journal of Services Marketing*, 22(3), 198–212. doi:10.1108/08876040810871165
- Hall, E.T., 1976. *Beyond Culture*, Garden City, NY, USA: Anchor Books.
- Hallikas, J. et al., 2004. Risk management processes in supplier networks. *International Journal of Production Economics*, 90(1), pp.47–58. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0925527304000477> [Accessed February 20, 2014].
- Hammond, S.C., & Glenn, L.M. (2004). The ancient practice of Chinese social networking: guanxi and social network theory. *E: CO* 6(1), 24–31.

- Hooker, J.N., 2012. Cultural Differences in Business Communication. In C. B. Paulston, S. F. Kiesling, & E. S. Rangel, eds. *Handbook of Intercultural Discourse and Communication*. Wiley, pp. 389–407.
- Hwang, K.K. (1987). Face and favor: The Chinese power game. *American Journal of Sociology*, 92(4), 944–974.
- Johanson, J., & Vahlne, J.-E. (1977). *The internationalization process of the firm - A model of knowledge development and increasing foreign market commitments*. *Journal of International Business Studies*, 8, 23–32.
- Luna-Reyes, L. F., Cresswell, A. M., Richardson, G. P. (2004). Knowledge and the development of interpersonal trust: a dynamic model System Sciences. Proceedings of the 37th Annual Hawaii International Conference on System Sciences, pp. 86–97.
- Luna-Reyes, L. F., Andersen, D. F., (2007). Towards a Theory of Interorganizational Collaboration: Generic Structures of Cross-Boundary Requirements Analysis. Proceedings of the International Conference of the System Dynamics Society
- Mavondo, F.T. & Rodrigo, E.M. (2001). The effect of relationship dimensions on interpersonal and interorganizational commitment in organizations conducting business between Australia and China. *Journal of Business Research*, 52, 111–121.
- Mayer, R. C., Davis, J. H., and Schoorman, F. D. (1995). An Integration Model of Organizational Trust, *Academy of Management Review* 20:3, pp. 709–734.
- Rahman, Azmeri, Hadikusumo, B.H.W, Ogunlana, Stephen O., & Mahmood, Muhammad Nateque. (2008). Modelling contractor's and subcontractor's trust : a system dynamics approach. Proceedings of CIB W055 - W065 Joint International Symposium: "Transformation Through Construction", CIB - International Council for Research and Innovation in Building and Construction.
- Sorasalmi, T. & Tuovinen, J., 2014. Entering Emerging Markets: A Dynamic Framework. In *4th International Conference on Dynamics in Logistics*.
- Studwell, J. (2002). *The China Dream: The Elusive Quest for the Last Great Untapped Market on Earth*. London: Profile.
- Tu, W.M. (1984). *Confucian Ethics Today: The Singapore Challenge*. Singapore: Federal.
- Wu W.P. (1994). Guanxi and its Managerial Implications for Western Firms in China: A Case Study. Paper presented at the International Conference on Management Issues for China in the 1990s, University of Cambridge.
- Wu W.P. (1996). Transaction Cost, Cultural Values and Chinese Business Networks: An Integrated Approach. Paper presented at the International Academic Workshop on Chinese Business Connections in Global and Comparative Perspective, Beijing, PRC.
- Zeffane, R., Tipu, S. A., & Ryan, J. C. (2011). Communication, Commitment and Trust: Exploring the Triad, *International Journal of Business and Management*, Vol. 6, No. 6, pp. 77–87.