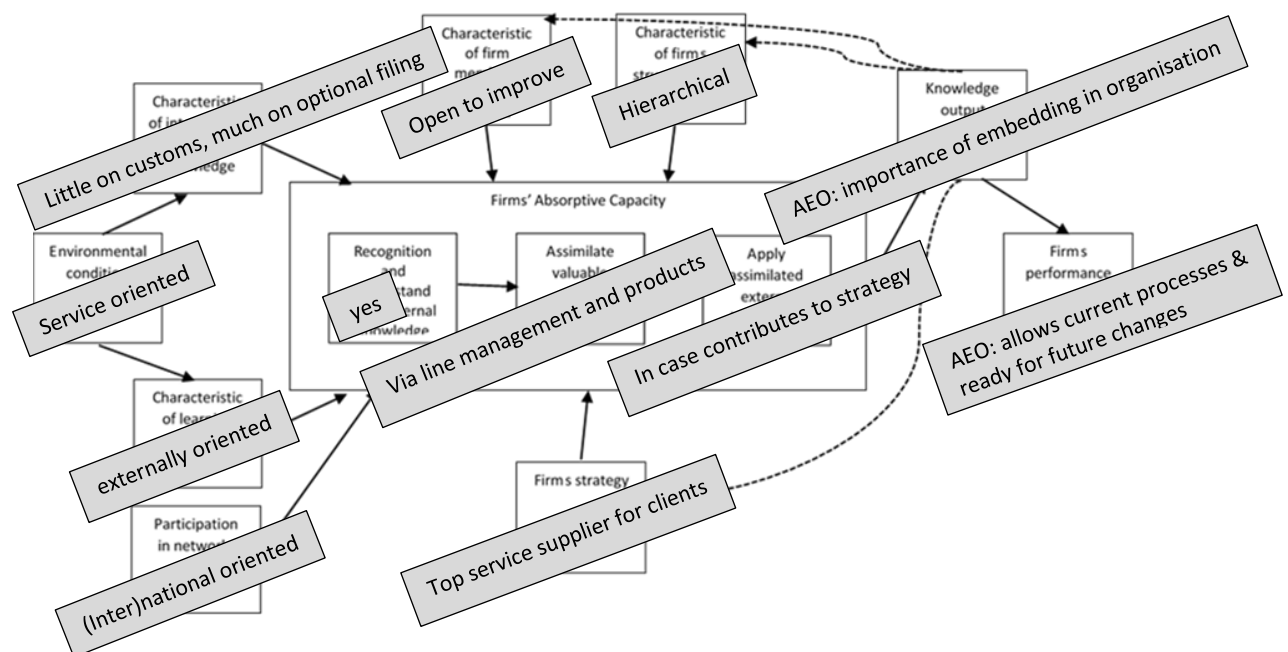


## Enablers of absorbing useful new customs' knowledge

How will Dutch companies absorb new customs' supervising models?



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## Preface

The last two years have been a great experience, which I would not have likely missed. Meeting new people is always nice, but diving into a, for me, brand new topic was very intense. I hardly knew anything about customs, its processes and legislation. Now I know I still can learn a lot about the subject.

Writing the master thesis helped me to make some aspects of the master a bit more concrete. I understand the sending of the ENS and customs warehouse better than before. I have learned about Absorptive Capacity: a knowledge domain I knew nothing about before. My network moved me into this direction and helped me to recognise the usefulness of this knowledge domain. The master as a whole helped me to prepare myself to teach my students about European customs law and procedures both in our minor and regular program.

Many people helped me during these last two years. First of all Hans Aarts, who gave me the opportunity to do this master in the first place, and Peter Heiden, who gave me time to do all the studying. Then all the teachers of the master, who made me feel like a student again and made me realize what (also my) students have to endure. I feel more sympathy for my own students again. Then special thanks for the people who helped me during this master thesis: Eggo Bert Smid, Richard van 't Hof, Roel van 't Veld, Leo Alewijnse, all four from Dutch customs and Wout Hofman from TNO. They have helped me to clarify EIDR and Extension of the ENS. Then certainly all the interviewees without who I could not have done this thesis. They all helped me to test the model on Absorptive Capacity. They have to remain anonymous, therefore I will not mention them now: but many thanks for your time and confidence! Next Thierry Verduyn, who helped me finding this subject and who helped me during the first phase of this period. Also unexpectedly at a birthday party of my mother in law: Phyllis who made me aware of how to analyse interviews. Then obviously Rob Zuidwijk and Yoa-Hua Tan. Many thanks for their supervising and coaching, especially after Thierry dropped out as my internal coach from Fontys. Many thanks for all the critical remarks and the helping hands when I was doubting (which was often). And last but not least my family who always gave me all their full support and understanding, critical reading and my ten year old son, Tommie, who very clearly pointed out I better pass this thesis, for it had been taken up quite enough time now.

Thanks!

## Executive summary

The introduction of the United Customs Code, UCC, has changed and will change many of the procedures related to importing and exporting goods to and from the EU. Companies have to reconsider internal processes and control measures to comply with the new rules. However how the supervision procedures will be designed is often still unknown. A consortium under management of Fontys University of Applied Science will redesign many of these procedures and develop new ideas and knowledge on customs supervision models. The question which has been researched in this master thesis is how this new knowledge can best be transferred to Dutch companies. The thesis aims to develop a model based from literature and tested in cases that can explain the recognition, adaption and application of new external knowledge on customs supervision models by Dutch companies.

In order to investigate this, four case studies have been conducted to test and adjust a model on Absorptive Capacity (AC). Absorptive Capacity explains how companies recognise new external knowledge as useful, how they assimilate this knowledge and apply it successfully. This model has been developed by scholars, who has investigated AC extensively in a strong R&D environment. Does this model also explain the AC of Dutch companies, involved in international trade with less budget for R&D, concerning customs' supervision models? All cases are Dutch companies involved in international trade. The first two cases were used to learn about Absorptive Capacity and to explain the absorption of AEO. The last two cases were used to test the model on the absorption of new supervision models like EIDR and Extension of the ENS. Furthermore three account managers of Dutch customs were interviewed to reveal the role of customs within the absorbing of customs' supervision models by companies.

The original model on Absorptive Capacity seems to explain well how Dutch companies involved in international trade absorb new knowledge. However, four adaptations have been made to the original model:

1. The Absorptive Capacity related to supervision models is mostly influenced by the network. Participating in a network both influences the learning relation and the direct recognition of useful external knowledge. This might be related to the specific nature of the new knowledge: supervision models to which the companies simply have to or want to comply.
2. Going through a kind of PDCA cycle seems to be trivial for truly incorporating the new knowledge into processes and structures and hence influences the AC of companies. Whether or not this really happens might simply be related to money. Are the investments, which are needed to change internal processes, and costs less than the expected profit? If the expected profit (in money, effectiveness, reliability or image) does not exceed the costs, no or less effort will be put in truly incorporating the ideas into the company. The acquired AEO certificate can then be labelled as window dressing, instead of truly adapting the ideas behind it.
3. In the original model, an outcome of the model is that more knowledge will ultimately also influence the strategy of a company. The four cases have given no reason to believe the strategy will be changed due to the use of the new knowledge. Knowledge on customs seems not to be a strategic subject.
4. It looks like the development of new products/ services or exploring new markets is more related to whether or not the new external knowledge comes from a new knowledge domain. New knowledge from a well-known knowledge domain mainly seems to improve current processes.

Related to the third bullet above might be the trend be in which customs are delegating more and more supervision tasks to companies. AEO, REX and self-assessment are all examples of original

customs' tasks which are now carried out by companies. However, one must keep in mind that it is neither a company's core business nor interest to supervise itself. Beside the point that supervision is always needed to assure compliant behaviour now and in the future, companies will only accept these extra tasks when the gains exceed the costs.

As networks seem to play an important role, theory on successful innovative networks has been studied. It looks like the Dutch networks within the customs domain resemble a successful innovative network: the Dutch seem to work according the theory of innovative networks. Therefore in order to expand new knowledge developed by the consortium the social actors in this national network must be put into action. Social actors are in this case neutral organizations, like knowledge institutes and the customs organisation itself. These neutral organisations play an important role, as tough competition limits free sharing of valuable knowledge. Furthermore the consortium must highlight the tangible profits of these supervision models for companies when they distribute their innovative supervision models into the Netherlands.

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## Chapter 1 Introduction

### 1.1 Background of thesis

The introduction of the UCC, last May 2016, changed a lot for im- and exporting companies in the Netherlands. Under the old customs code, the CCC, companies in the Netherlands benefitted from all kinds of simplifications of procedures and measurements that reduced the administrative burden related to international flow of goods to and from the Netherlands. This created a competitive advantage for the Netherlands, as companies often chose to im- or export via the Netherlands instead of countries surrounding it. However as the UCC aims to harmonize customs' law across the EU, many of these simplifications have changed.

In the coming years a consortium under management of Fontys Hogeschool, consisting Dinalog, TNO, Dutch Customs' organisation, several professors from Erasmus University and Technical University of Delft, consulting companies Deloitte, PwC, Meijburg & Co and Ernst & Young will investigate which chances the UCC still offers to companies in the Netherlands. The consortium will focus on developing new customs supervision concepts and procedures within the boundaries of the UCC, aiming to reduce the administrative burden and logistic costs for Dutch companies (aanvraagformulier kansen UCC DWU voor BV Nederland). These new concepts are expected to be found at the intersection of UCC/ supervision, IT and global trade. Presumably this consortium will put special focus on:

- Self-assessment;
- EIDR;
- Extension of the ENS declaration;
- Private cooperation.

Self-assessment is a simplification in which the licence keeper may execute its own customs' formalities and customs' control. EIDR is a simplification in the declaration process. The declaration takes place the moment the licence keeper adds goods in their own record keeping. Extension of the ENS is measurement to improve the data quality which is used by customs to do the risk analysis for all incoming goods<sup>1</sup>. Private cooperation stimulates of cooperation between companies, so they can reduce their costs. E.g. in Hamburg forwarders have cooperated to have one financial guarantee for them all, reducing the financial costs for all individual participants.

So the consortium will develop new procedures within the boundaries of the UCC that on the one hand assures supervision by customs and compliant trade and on the other hand reduces administrative burden and logistic costs for companies. It is within the everlasting discussion within customs both wanting to facilitate trade and to control it (Widdowson, 2003: 91). In order to have Dutch companies benefit from all these new concepts developed by the consortium, as much as possible Dutch companies should adapt these new procedures as quickly as possible. The question is to what extend these new concepts will be/ can be adapted by companies?

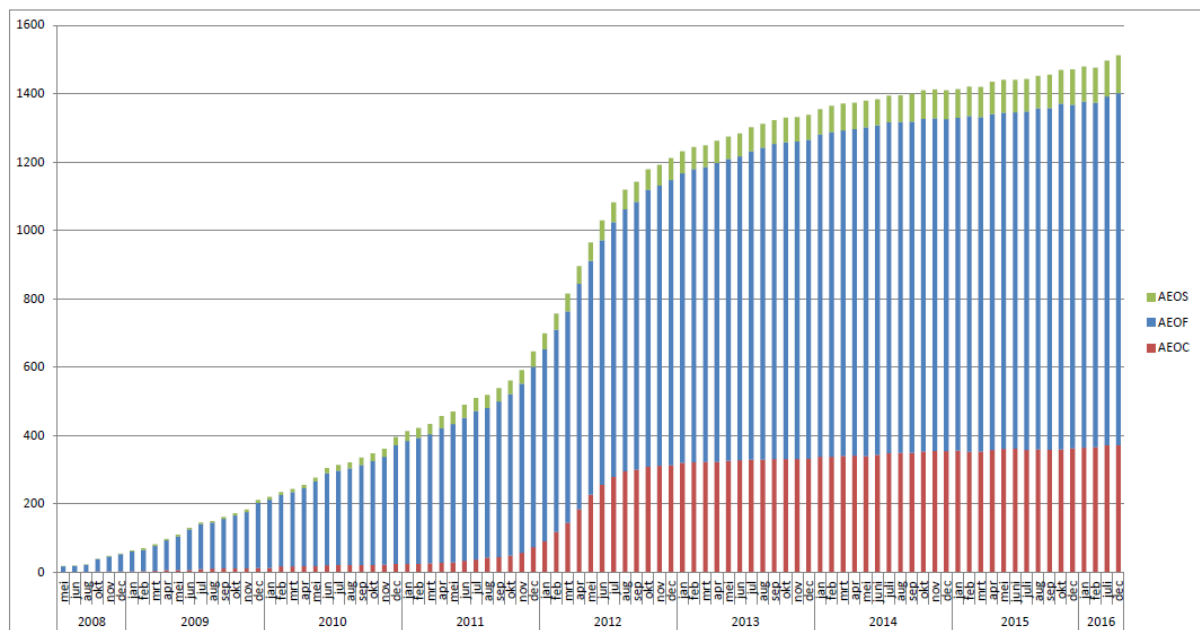
The question above proofs to be relevant. When European customs introduced the AEO concept in 2007, it took quite some time, before companies embraced this new concept (see for example Egberts and Hermes, blog on Logistiek.nl, 2009; Jorritsma, blog on Logistiek.nl, 2008 and Beerens, news item on Logistiek.nl, 2008). A year after introduction of AEO only 73 Dutch companies obtained an AEO certificate. Dutch customs hardly hindered the flow of goods, so companies hardly believed that the AEO status could bring more benefits than the already existing simplifications. In 2009 only logistic service providers and companies dealing with high value goods obtained the AEO status. Other reasons back then were more commercial: distinction from non AEO status companies or

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<sup>1</sup> EIDR and Extension of ENS will be explained in detail in chapter 5.

simply because AEO status was demanded by clients. Only after January 2012 the application of AEO really was back on track. Customs demanded then that for several simplification procedures, as the “domicilieringsprocedure”, the same demands as for AEO would apply. To apply for the AEO status was then a small step for companies (Ewalds, blog on Logistiek.nl, 2011). Because of this the number of AEO companies increased to 756 in January 2012 and 1,500 companies applying for the status (Stad, news item on Logistiek.nl, 2012). In the figure below this development is shown. So by the end of 2016 around 1500 Dutch companies had an AEO certificate.

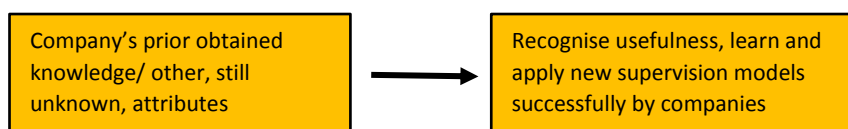
Figure 1 Development of the amount of Dutch AEO certificates



Source: [www.ktl-nederland.eu](http://www.ktl-nederland.eu)

When the consortium has developed new customs' supervision concepts to be used and implemented by companies, these concepts must first be recognised as being useful by these companies, before they will use it. This seems to refer to the concept of Absorptive Capacity (AC). Absorptive Capacity was introduced in 1990 by Cohen and Levinthal. They defined it as (1990: 128): *“prior related knowledge confers an ability to recognize the value of new information, assimilate it and apply it to commercial ends. These abilities collectively constitute what we call a firm's absorptive capacity”*. This would mean that companies own prior related knowledge enables the company to recognize the usefulness of the new customs supervision concepts, to adjust the concept to the needs of the company and to turn it into some kind of (commercial) success. The question is then which prior related knowledge is necessary to recognise the usefulness of the new supervision concepts. It could also be the case that other attributes influence the ability to recognise useful external knowledge. Which attributes are those? The picture below represents these questions.

Figure 2 Why do companies adapt innovative customs' supervision procedures?



It is likely that these new concepts will be found at the intersection of UCC/ supervision, global trade and IT. This is related to the believe that trade compliance can best be achieved at this specific



intersection of legislation, IT and logistic as is taught at the master Customs and Supply Chain Compliance at the Rotterdam School of Management and the minor Customs Management in International Business at Fontys Hogeschool Venlo and as is discussed in several articles (see for example Klievink et al, 2012, and Hesketh, 2010). So the necessary prior obtained knowledge to successfully adapt the new concept, might vary a lot. They might be at a legal, IT and/or global trade field. Could e.g. prior obtained knowledge to absorb legal concepts successfully hinder the absorption of IT concepts? Or re-enforces prior obtained e.g. legal knowledge the absorption of IT concepts?

## **1.2 Purpose and structure of thesis**

The questions above seem to be relevant. Therefore this master thesis aims to explore these issues more thoroughly.

In order to do this, first the problem and scope of this research will be described, then the outcome of the literature research will be given, followed by the research method. Then the research itself will be described. The last chapters will present the outcome of this research: the contribution for research, for practice and the conclusions and recommendations.

## Chapter 2 Problem definition

Figure 2 presented the scope of this research “Why do companies adapt innovative customs' supervision procedures?” So what triggers a company to recognise external knowledge to be useful, learn it and apply it. When this is known, it can help the consortium to distribute their concepts more effectively (and maybe even more efficiently) to Dutch companies. The theory of “Absorptive Capacity” (AC) seems applicable, as this describes exactly what the consortium aims: companies should recognise external knowledge (developed by the consortium) as being useful, acquire it and use it. However until now the theory of AC has not been tested within logistic companies or customs agents. It has only been tested in a strong R&D environment (Lane, Koka and Pathak, 2006: 858). So it is unknown whether the theory of AC holds in a logistic environment within a legal/ UCC context.

Therefore this master thesis aims to:

*To develop a model based from literature and tested in cases that can explain the recognition, adaption and application of new external knowledge on customs supervision models by Dutch companies.*

This master thesis focusses only on Dutch companies involved in the international trade between the EU and third countries.

The main question is:

*Do models on Absorptive Capacity (AC) explain how the absorption of innovative supervision concepts like AEO, EIDR and extension of the ENS by Dutch companies take place?*

Sub questions are:

1. Do models on AC need to be adjusted to the specific context of innovative supervision concepts like AEO, EIDR and Extension of the ENS?
2. How can SME companies best be motivated to absorb new knowledge on innovative supervision concepts like AEO, EIDR and Extension of the ENS?

The consortium also aims to develop new concepts for private cooperation and self-assessment. However as several Dutch customs officers in the field are very sceptical about the introduction of self-assessment (they argue it will never be implemented), this is not further investigated in this research. Private cooperation also seems something to be in the structures of the supply chain and won't be investigated in this research.

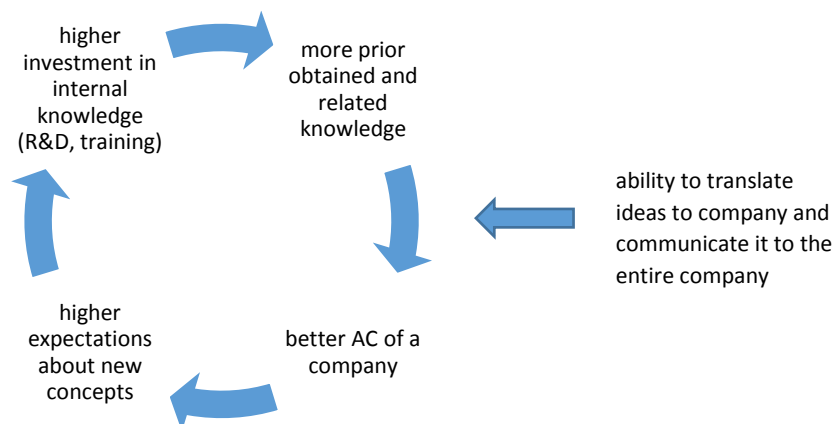
## Chapter 3 Review of research literature

Much scientific research has been done about the Absorptive Capacity (AC) of companies, because absorptive capacity is assessed as being one of the critical features for a company's survival (Lane, Koka and Pathak, 2006: 833).

As stated before Cohen and Levinthal (1990) were the first to investigate and measure the AC of companies. They spoke of prior related knowledge that enables the recognition, assimilation and applying external new information. That means that the AC depends from employees and their knowledge at the gate of the company, the gatekeepers (1990:132). They scan the outside world for interesting innovative concepts and translate these for the companies benefit. Murovec and Prodan (2009: 859) label this as decoding the new concept for internal use. This is followed by the actual using of this new knowledge and make a (commercial) success out of it. The better equipped employees at the gate, the better external useful knowledge can be identified. Hence the relation with investment in employees and training them and AC.

Furthermore Cohen and Levinthal claim (1990: 136) that companies' high expectations on external knowledge increases investments in training and R&D within the company, which increases the prior obtained knowledge and therefore the AC. This is a self-enforcing mechanism. The figure below represents these concepts of Cohen and Levinthal.

Figure 3 Self-enforcing mechanism of AC adapted from Cohen and Levinthal



AC comes at a price: investment in R&D and training of own staff appears to be enablers of AC. This is confirmed by several researches. Cohen and Levinthal (1990: 135), Lane, Koka and Pathak (2006: 836), Fabrizio (2009:255), Murovec and Prodan (2009: 870) and Clausen (2013: 67) all indicate that investment in R&D, training of own staff and recruiting educated staff is needed before being able to recognise and use external new knowledge. Investing in own staff is important as external hired staff doesn't have enough knowledge about the firm itself. So to increase the AC of a company is to invest in the employees of a company.

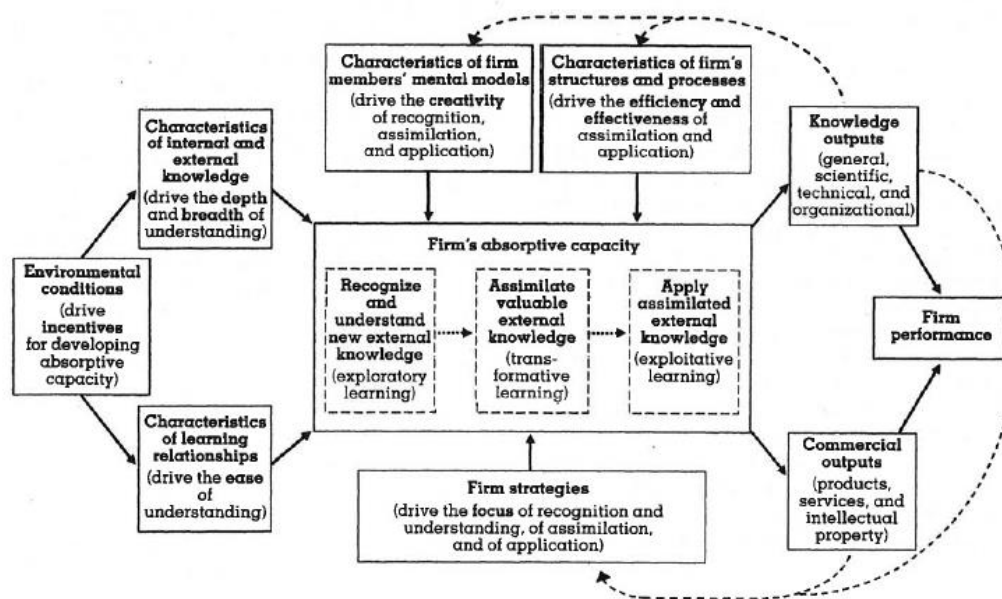
The investment in internal R&D is then derived from three variables: the relevance of a certain science area for the firm, the ease to learn and protect the new knowledge from others and the expected profit of using this knowledge commercially. One must keep in mind that a firm can only invest in a limited science areas, due to limited resources and own knowledge (Lane, Koka and Pathak, 2006: 837).

Van den Bosch, Volberda and De Boer (1999: 553) relate AC with the environment. In case of a stable market and technological development, the company is able to recognize and apply new knowledge

efficiently. For example staff is trained on same topics, so the already existing knowledge in the company is increased. System combinative capabilities can be used in these situations. In case of an unstable market with many technological developments, the company might want to learn also entirely new things: their scope and flexibility to acquire external new knowledge might then be more important. A matrix organisation with many coordination capabilities (to distribute the new knowledge internally by training, job rotation, natural liaison devices and participation) are then needed (1999: 556 and 558).

But how then is AC measured and what exactly influences the absorptive capacity of a company? Lane, Koka and Pathan (2006: 856) adjusted the original construct of AC, as developed by Cohen and Levinthal (1990), after analysing 289 papers on AC and presented a new construct explaining AC. This is pictured below in figure 4.

Figure 4 Process Model of Absorptive Capacity by Lane, Koka and Pathak



Zahra and George (2002: 193) and Todora and Durisin (2007: 774) explained the first step of AC further. The more a firm is exposed to diverse and complementary external sources of knowledge and the more experienced a firm is (the more prior related obtained knowledge it has), the more external knowledge will be recognised as useful and decided to do something with it. These relations are increased by both internal and external triggers, such as internal crises or external competition (compare with figure 3 where only external triggers are listed). Todora and Durisin (2007: 783) highlighted further the dynamic process and “*path dependency*” of absorptive capacity. Any steps taken at a certain time in acquiring external knowledge will influence future steps. Once a certain knowledge field is “chosen” as being important for a firm, the more difficult it is to recognise importance of a complete new field of expertise. Instead companies will build further on the existing knowledge.

Murovec and Prodan (2009) build further on the construct of AC and statistically determine relations between AC and companies characteristics. They found that science pushed AC (caused by technological opportunities) are strongly influenced by internal R&D and innovation cooperation, whereas demand pulled AC (caused by demands from the market) are influenced by internal R&D, training of personal and attitude towards change (2009:870). Furthermore Murovec and Prodan found that demand pulled AC have greater causal relation with product innovation and process innovation output than science pushed. This suggests that successfully adapting the new concepts of

the consortium, is mostly dependent from internal R&D, training of personal and attitude towards change. Murovec and Prodan (2009: 870) illustrates this by saying *“this raises the question of the appropriateness of current innovation policies, which usually put emphasis only on the knowledge creation (R&D) side, and practically no emphasis on raising the awareness about the importance of information available on the market and improving the accessibility of this information.”*

Vinding (2006: 510) focussed upon the importance of employees in relation to absorptive capacity. Cohen and Levinthal (1990) also stressed the importance of the employees as gatekeepers, Vinding concretes this even more by arguing that highly educated employees, an active human resource policy and close relation with colleagues on both horizontal and vertical level and knowledge institutes increases the absorptive capacity of firms. Bolívar-Ramos, García-Morales and Martín-Rojas (2013: 912) stipulates the importance of IT in relation to the AC of a firm: good IT skills and using IT in interconnected tasks improves the AC. Petts, Herd and O’hEocha (1998: 728) indicated the importance of the attitude of employees in SME towards external knowledge. Internal training of employees can change the attitude towards a more active approach of the outside world. The findings of all these three studies are even more important in case of SME with owner-managers, as owner-managers are really the spill of these organisations (Jones, Macpherson, Thorpe and Ghecham, 2007: 289).

Figure 4 does not incorporate interorganizational learning. As the consortium will “push” the new supervision models into the market, Dutch companies must learn from them. Lane and Lubatkin (1998) examined the interorganizational learning. Learning between organisations (this means also between the consortium and a firm) is improved when the companies share a common basic knowledge, doing something for the other company is compensated, shared research communities are established, less formalisation by management and centralised research (1998: 470). Zucker, Darby and Armstrong (2002: 138) and Fabrizio (2009: 265) highlighted the importance of close cooperation between researches within a firm and top scientist at universities to improve the absorptive capacity and learning from each other. Many Dutch logistic companies however do neither employ researches nor have close cooperation with top universities as they are rather small. Obviously larger logistic companies have more often contact with universities and employ specialised staff. Owen-Smit and Powell (2004: 14) specialises interorganisational learning to network related knowledge sharing. Their findings suggest that companies learn much from the local network they are in and with whom they have contractual relations. Further is the learning within this network influence by the dominant player: if this player has an open attitude towards knowledge sharing, more knowledge will be shared. Their findings are confirmed by Koch and Strottmann (2008: 520): having access to knowledge via networks and cooperation is essential for the AC of a firm. Having access to knowledge of knowledge institutes is particular important for radical innovations.

How then are companies willing to adapt knowledge on legal/ supervision concept? Kitching and Smallbone (2010: 21) argued that the level of acting compliantly of SME is dependent from the level of interpreted usefulness/ use of the legislation by management of the companies, by the available resources and skills and by the pressure by the environment (social network, stakeholders).

To look a bit further what makes a company innovate, Prajogo and McDermott (2014) examined the effects of internal and external factors on exploratory and exploitative innovation. Exploratory innovation is defined as (2014: 521) *“new-to-the-world-products or services, creating new markets and identification of the needs of emerging customers and markets”*... Exploitative innovation is related to improve what is already existing, e.g. making processes more efficient for existing customers in existing markets. The question is how to define the new supervision concepts. Basically it has features of both: the new concepts will be “new-to-the-world-services”, however in an existing

market for existing customers. As Prajogo and McDermott argue that successful companies should focus on both innovations, factors that influence both are listed below (2014: 530).

*Table 1 Antecedents of Service Innovation SME, adapted from Prajogo and McDermott*

<i>Factor</i>	<i>Exploitative innovation</i>	<i>Exploratory innovation</i>
Centralised decision making	No relation	Negative relation
Formal organisation	Positive relation	No relation
Informal communication	Positive relation	Positive relation
Uncertain, dynamic markets	Positive relation	Positive relation
Hostile, competitive markets	Negative relation	Negative relation

Furthermore Prajogo and McDermott found (2014: 532) that the uncertain and hostile markets are more determined for a company to be involved in innovations than the other three internal factors.

Nieves (2016) investigated the role of management innovation in the hotel industry. Management innovation is defined as (2016: 126) *...“the implementation of an organisational method (in business practices, workplace organisation or external relation) that has not been used in the firm before and that stems from strategic decisions made by management”...* Nieves found (2016:132) that this management innovation has a positive influence on organisational learning capabilities and product innovation. Product innovation has a positive relation with financial performance. Whether or not these relations exists in the logistic industry is not yet known. The findings suggests however strong influence of management on innovations.

Martínez-Sánchez, Vela-Jiménez, Pérez-Pérez and De-Luis-Carnicer (2009: 553) found that financial performance, functional flexibility and internal numerical flexibility influences both process and product innovation. External numerical flexibility and outsourcing slightly influences, however not significant, negatively the innovation. Cooperation with suppliers had a moderating effect on these relationships.

This research builds on these findings. The model developed by Lane, Koka and Pathak (2006: 856), presented in figure 4, is used as the fundament. The other studies have been used to operationalize the attributes in the model. Appendix I presents this operationalisation.

## Chapter 4 Research methods

First literature on absorptive capacity has been studied (as presented in chapter 3). The purpose of this literature research is to find out what Absorptive Capacity is, how it is influenced and how it can be measured. The fundament is the model which is presented in figure 4. Other literature have helped to operationalise all objects and attributes. The outcome of this research is presented in appendix I. Then the legislation on “extension of the ENS” and “EIDR” have been studied and expert interviews have been held to describe what “extension of ENS” and “EIDR” means, what is exactly is.

Next it has been established whether or not AC’s models hold at companies involved in the international flow of goods in the UCC context, which normally do not heavily invest in R&D. Do the models explain how the adaption of external knowledge by companies within the UCC-context take place? Exploratory case study therefore has seemed most appropriate to apply (Eisenhardt and Graebner, 2007: 25), as case study bridges the gap between existing literature and unknown daily practice. Also Baarda, De Goede and Teunissen (2005: 113) argue that case study is best appropriate when a complex problem is researched within daily practise and context with a holistic approach. Also Voss, Tsikriktsis and Frohlich (2002: 195) argued that case study can bring ... *“new and creative insights, development of new theory and have high validity with practitioners”* ... As the consortium wants to distribute the new supervision concepts as quickly as possible, case study might help to illustrate causal relations between external knowledge and the adaption of it by logistic companies. Case study is also most appropriate in case the attributes are still not certain (Voss et al, 2002: 197) and relations between the attributes are also not certain, which is the case in this research.

So inductive case study has been used to explore and come to common conclusions on how companies are likely to recognise the usefulness of the new supervision models. Key attributes of companies will be identified and the relation between them established. Special focus will be put on why the relations exist. This case study has been divided into two stages:

1. The model of Lane, Koka and Pathak have firstly been tested within two companies which became AEO in the early days of AEO. Does the theory on AC explain how companies back then chose to implement AEO? Can/ must the model be adapted to daily practice in a customs environment? In other words: is the model valid in a UCC environment? Managers involved in deciding to implement AEO have been selected to interview using a semi-structured question list. Both companies are Dutch companies which declare incoming goods on behalf of other companies. After these interviews the model was slightly adapted so it better explained how external knowledge is absorbed by these companies. Obviously both managers have approved the interview reports. The result of this is presented in figure 5.
2. The then adapted model on AC has then been tested again with two companies: one company wanting to implement EIDR and one company working with the extension of ENS. Also both Dutch companies. These interviews are considered the main case studies, as these interviews must verify how Dutch companies absorb external knowledge on EIDR and Extension of the ENS.

As Eisenhardt and Graebner (2007: 27) indicated, case studies must be chosen that support the line of inquiry. Therefore the case study was done in two phases. As the theory of Absorptive Capacity was new to the researcher, the first phase was also used to learn about and understand how the model is built up. Does the model then explain how companies acquire new knowledge in this specific environment? The second phase was meant to investigate if the model truly explain how companies involved in the international flow of goods absorb knowledge on EIDR and Extension of the ENS. Obviously companies needed to be chosen that are thinking of working with EIDR and Extension of the ENS. As two cases have been involved, the depth of the research might be lower, the validity of the outcome however is expected to be higher (Voss et al, 2002: 203). If one company

would have been chosen, this case could have been described extensively, however it would not have indicated if differences exist between absorbing EIDR and Extension of the ENS. For validation reasons more companies should have been added, however due to time limitations, this has not been done.

Trade compliance managers or employees responsible for the trade compliance have been interviewed using a semi-structured question list. In each company three interviews were held in order to avoid subjectivity and biases (Voss et al, 2002: 205). Each interviewee has been asked to review the complete literally report of the interview report to assure validity of the interviews. Furthermore as several interviewees will be involved it is important to code the answers, so answers can be classified together in order to analyse. If causal relations exist, there must be a necessary sequence of the attributes, e.g. first companies invest in R&D, then the AC increases. Because several cases will be involved, patterns can be found (Voss et al, 2002: 214) and the model finalised.



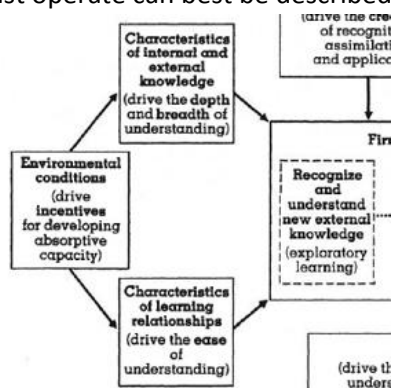
## Chapter 5 Case description

In this chapter the adapted model from Lane, Koka and Pathak will be firstly pre-tested at early certified AEO companies, then the two supervision models will be described. Last the cases will be described and conclusions on AC within the customs domain will be made.

### 5.1 AC and early certified AEO

As indicated before, literature study operationalised the model which was developed by Lane, Koka and Pathak. The result of this operationalisation is added in appendix I. This model has been tested at two companies who adapted the AEO principle in the early days (around 2008 – 2009). The question whether or not the model explains the Absorptive Capacity at the two companies, is answered below. In order to explain the reasoning clearly, excisions of figure 4, have been added.

The first attribute of the model is the environment. The environment in which the two companies must operate can best be described as hostile where margins are under pressure and clients are won



by offering low(est) prices and good (best) service. Clients are well being taken care off. Next to this the legislation forces the AEO companies into a certain direction. Nowadays AEO companies can be seen as “extensions” of customs. The delegated responsibility from customs to AEO companies puts a pressure to act compliantly and control own processes until each detail. Without this, so in case the company does not act compliantly anymore) licences might be taken away again by customs and the company will not be able to perform its business activities anymore. Both companies described this as

being a representative for customs (instead of for companies): they make sure that the policy and vision of customs is transferred the companies they represent and they take into account the interest of customs with all their activities instead of the interest of the companies they represent. These two elements of environment explains why both companies have a broad and deep knowledge on customs’ issues (characteristics of internal and external knowledge). Without it the companies can’t perform customs related tasks for their highly demanding clients, whose wishes directs the company into what to do and what to learn. It also explains why external knowledge has the same width and depth: this applies to all companies working in the customs field. The environment forces to company to perform customs related tasks for clients as efficiently as possible. Other knowledge is not relevant, can’t be made profitable quickly. The company’s focus is therefore on recognising solely new *customs* related knowledge, which can be used profitably for clients. Their experience and knowledge is entirely within the customs domain. Whether or not legislation is considered to be relevant seems to be irrelevant. Sometimes the UCC is seen as very bureaucratic and the way the UCC has to executed sometimes seems to be costly paperwork. But the company simply has to be compliant and the UCC sets the boundaries for all actions. Both companies indicated that they act in networks which are either organised around a branch representation (Fenedex, Fenex) or organised within their holding. One company has many connections with universities and other knowledge institutes and participates often in projects in which new directions are explored. Obviously this company is confronted more often with new external knowledge than the other and might recognise more useful external knowledge. Participation in a network therefore doesn’t seem to be an operationalisation of environment, but an object itself. This as the environment of both companies is the same, but the AC between the two companies seems to differ.

Next environment should explain the characteristics of the learning relationships. Most learning is done within their own company/ holding, as knowledge is not shared freely between competitors. The environment does also explain why both companies put in a limited amount of gatekeepers, which scan the outside world for useful external knowledge (most employees have to be productive). These gatekeepers have limited time to scan the outside world for interesting new knowledge, as they have to be productive as well. This all then explains why the limited amount of gatekeepers solely recognises customs related external knowledge and mostly uses well known sources to learn from.

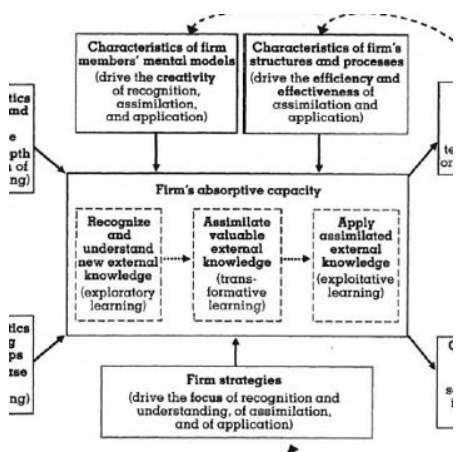
The model then measures three objects: characteristics of firm members' mental models; characteristics of firm's structures and processes; and firm strategy. Both companies indicate that their staff have at least MBO<sup>2</sup> level, with some employees also having HBO/WO<sup>3</sup>. The staff has a

homogeneous knowledge field: 100% customs related. Both companies have employed staff with much experience, also within the company (long term relation with staff). An open attitude towards external knowledge is stimulated. This explains why especially external customs related knowledge will be recognised as useful.

Both indicate that the organisations are flat, employees easily and informally ask colleagues. In case of new implementations project team are formatted. Normal devices to communicate (PC, email, phone) are given to communicate internally and externally. Employees are trained and given the possibility to development and promote internally. Both

companies clearly indicated that in case employees do not learn about new developments/ read email about UCC, they will be confronted with this. One company indicated that internal procedures (e.g. for making declaration for new clients) are very determining in how to execute daily work and also the IT system determines how processes are carried out (e.g. systems indicates a EUR1 is needed). Employees have average IT skills (word, basics excel, internet, email, own IT system), both companies have centralised the task to scan the outside world. No temporary employees are used. Both organisations focus on controlling costs. This mostly seems to explain how new knowledge is adapted to the company and shared within the company. In case it is decided to take up something new, employees are simply told to work accordingly and processes including IT systems are adapted to it.

Management was highly involved when it was decided to implement AEO, as implementing AEO (which is very much like other quality systems) is a time consuming project impacting all customs' related processes. This explains why necessary internal changes to implement AEO are indeed done by the company. Both companies have a policy of adapting to the changing world, which also explains why employees are active in recognising useful external information, translate this knowledge, in case it proves to be relevant and apply the knowledge accordingly.



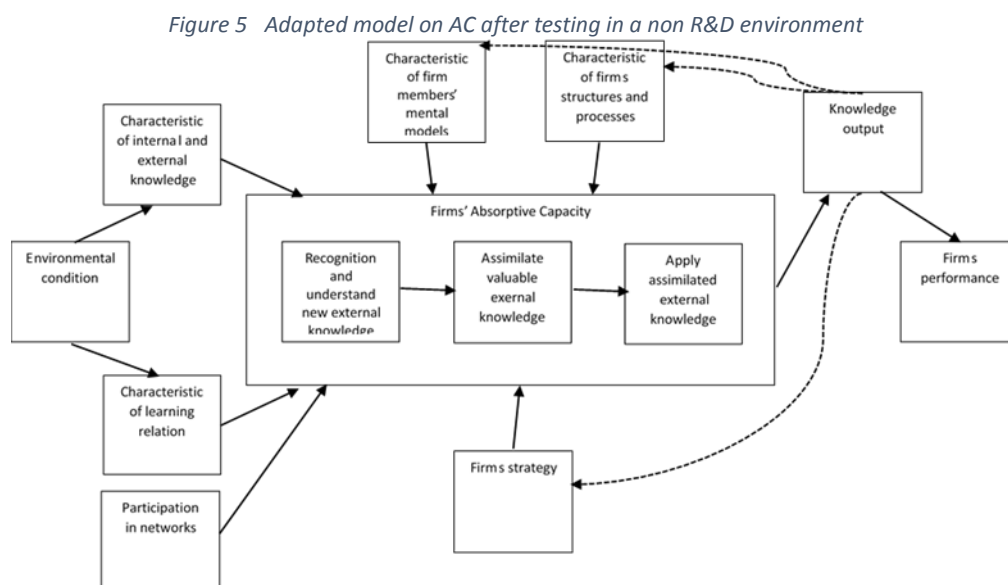
<sup>2</sup> Middel Beroeps Onderwijs, middle professional educated

<sup>3</sup> HBO: Hoger Beroeps Onderwijs, higher professional educated. WO: Wetenschappelijk Onderwijs, university level

The last part of the model tries to explain the outcome of AC. Because both companies now have an AEO certificate<sup>4</sup>, this changed internal processes and attitude of employees. Processes are more formal, less open space for employees' interpretation. More internal control measurements. Employees are more aware of the risks the company might face. This has influenced the firm's performance, as less mistakes are now made and the output is more reliable.

No new products or markets have been developed due to the implementation of AEO, but the quality of processes (less mistakes, more predictability) has improved. The reason why no new products/ markets were explored due to this new knowledge is maybe related to the fact that these two companies already performed all possible customs declarations. In the early days of AEO, the certificate was mainly used to distinguish oneself in comparison with competitors (as stated in chapter 1). So maybe indeed new clients were won by having this certificate, but neither new markets were explored nor new products developed.

The model seems to explain the construct of AC well in this context. Small changes as to how companies absorb external knowledge within the customs' context have been made. The result of this is presented below in figure 5, the operationalisation is added in appendix II.



The model has many similarities with the model developed by Lane, Koka and Pathak. Some changes have been made. Added is the participation in a network as explained before. As no new products/ markets were introduced, the commercial output has been left out. Obviously having a higher AC could also increase the development of new products/ exploration of new markets. But that did not happen here. The two companies, as indicated before, already did all possible customs declarations for their clients. The new knowledge was maybe not "new enough" to create complete new products/ services or explore new markets. As said: it improved current processes and reduced the number of mistakes made.

<sup>4</sup> Still a certificate, although this will change into a licence obviously.

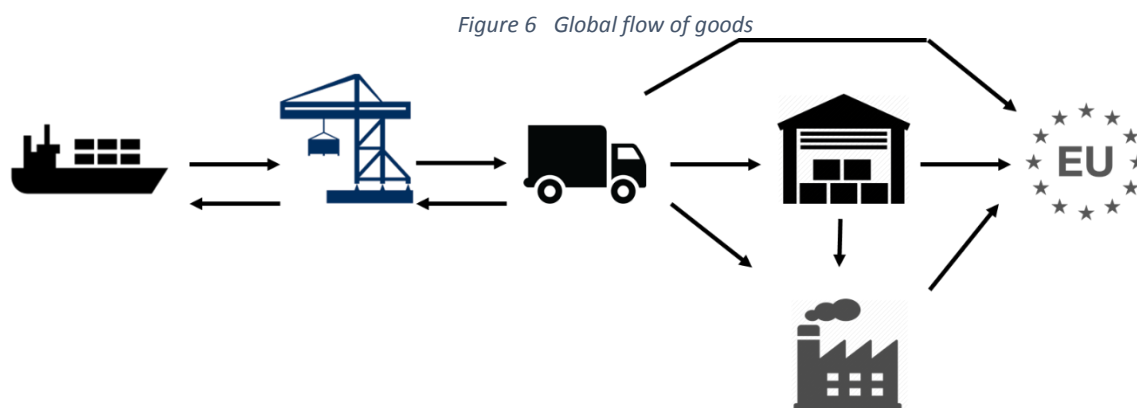
The question remains how to exactly measure the AC of a company. This model has explained how companies acquire external knowledge, but to indicate the level of AC and to be able to say whether or not the AC of one company is better than that of another, is more difficult. Both companies acquired only customs related knowledge. One could say that their scope was narrow. The learning environment was stable (same sources are used, not much flexibility). One company seems to be in more networks and participates more in projects (organised by knowledge institutes) and is therefore likely to adapt more external knowledge, but that could also have been related to the fact that this company offers more services than strictly customs declarations. Their clients could have more questions or more complicated customs related questions. The AC could be measured by asking how many changes were implemented which required new knowledge and by asking how well the companies were prepared for the field assessment/ re-assessment according UCC. Both companies implemented necessary internal control measures to acquire the AEO certificate around 2008-2009. Both scored at least on level 3 of the AEO maturity level. The difference between the two is that one company indicated having no trouble at all passing the field assessment, while the other is since mid-2016 in this process and has not yet passed the field assessment. Maybe this company did not truly incorporate the necessary internal control measures enough. This company did not speak of going through the PDCA cycle as prominent as the other. One might say that the AC of this company is lower than that of the other.

## 5.2 Entry in the Declarant's Records (EIDR)

In the following EIDR will be explained. It will be described how the logistic process looks like, which information has to be sent to whom, which demands EIDR puts on IT of the traders, who wants to use it. The legal base of this all, will be mentioned. The text is based upon studying the UCC and other documents mentioned in the text and discussed with Eggo Bert Smid and Richard van 't Hof on November the 9<sup>th</sup> 2016 and with Leo Alewijnse on February the 16<sup>th</sup> 2017, all three working at Dutch customs.

### Logistic Process

When products are being brought into the EU, globally the flow of goods looks like the picture below.

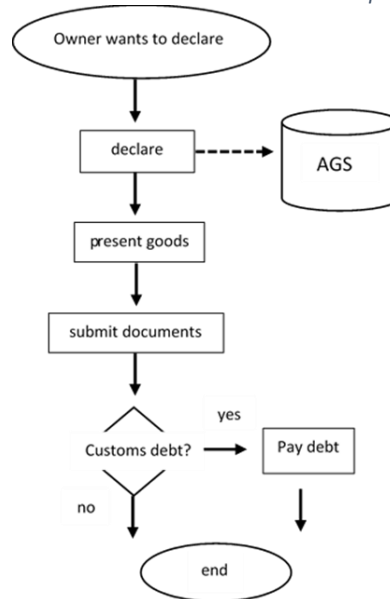


Non-union goods are brought into the EU, where they are stored on a Temporary Storage Facilitation (TSF, in Dutch RTO). Depending whether or not the owner of the goods knows what to do with the goods, the goods may be stored there during a longer or shorter period (max. 90 days). If the goods remain in Europe, a customs procedure is chosen and the goods are declared for this procedure. If the goods leave the EU again, a re-export declaration is lodged. Every movement or change of status of the goods, needs to be notified to customs, *before* that movement or change of status is done. So

before the unloading at the TSF, before the inland transport, before storage in the warehouse, et cetera, a declaration needs to be lodged. Each declaration is appointed a MRN, a unique number to identify the declaration. If several sequential declarations are done for one shipment, the previous declaration is cleared by matching (electronically) the MRN's of the declarations.

When goods are declared, this means that customs is informed what is going to happen with these non-union goods. When declaring, all data and documents, which are needed by customs to supervise for this particular declaration, have to be submitted to customs (art. 162 and 163 UCC). Furthermore the goods have to be presented to customs (art. 139 UCC). The presentation is necessary for customs, as this is a notification that the goods are ready to be physically inspected. The normal declaration process looks like the flowchart below.

Figure 7 Flow Chart normal declaration process



Annex B of the Delegated Act of the UCC (official journal of the European Union, 2015, a) specifies which information has to be uploaded via AGS for which declaration and which documents (e.g. proof of origin) have to be submitted. For example for bringing goods into free circulation much more data and documents need to be submitted than for storage under supervision. The declaration, presentation of the goods to customs and the handing over of documents all happen at the same time.

Owner of goods may declare themselves or have them represented (see art. 5: 15 UCC). The declarer however must (art. 170 UCC) be able to submit all necessary information needed for that procedure to customs (have access to AGS); must be able to present the goods to customs (or have them presented); and must be located in the EU (art. 170: 3 UCC lists the exemptions). This means in practice that all declarers are known to customs and declare more often, either in their own name or on behalf of someone else. In case of the existence of a customs debt, financial guarantee must be given. Several options for this financial guarantee exist, they are presented below (art. 89 UCC).

Owner of goods declares:	Owner has financial guarantee
Direct representation by e.g. customs agent:	Owner has financial guarantee
Indirect representation by e.g. customs agent:	Representor has financial guarantee

## Simplifications

As described above, the normal declaration process incorporates that both the actual declaration, the presenting of the goods to customs and the handing over of documents is done in the same time. Sometimes however, traders do not have all documents at hand on time, but do not want to wait to have their goods further moved into the EU. In those cases simplifications might be an outcome.

A simplified declaration (art. 166 UCC) means leaving out some information or documents when declaring. In order to be allowed to do that, a licence is needed. However the information and documents, which had been left out, have to be submitted later in a supplement declaration (art. 167 UCC), only after which the goods will be released (art. 224 IA UCC). It is the company's responsibility to link the simplified declaration with the supplement declaration in order to assure fiscal integrity. This link must be predetermined in an audit trail. This supplement declaration can have a "general, periodic or recapitulative" character. Article 146 DA UCC specifies this supplementary declaration:

- General: in case the supplement covers **one** simplified declaration, the supplement information has to be submitted to customs at latest 10 days after release of the goods.
- Periodic: in case the supplement covers **one** simplified declaration, the supplement information has to be submitted to customs at latest 10 days after the end of a predetermined period. This period may not exceed one month<sup>5</sup>.
- Recapitulative: in case the supplement covers **more** simplified declarations, the supplement information has to be submitted at latest 10 days after the end of a predetermined period. This period may not exceed one calendar month<sup>6</sup>.

The European Commission (European Commission, Directorate-General Taxation and Customs Union, 2016, a) listed all the demands put on traders who wants to apply for a licence simplified declaration<sup>7</sup>:

- The trader has to deal with customs activities on a regular basis.
- The trader has to be a natural persons or a legal person/ associations having the capacity to perform legal acts may.
- The permanent business establishment, registered office or central headquarters have to be established in the customs territory of the European Union.
- The trader may still outsource their declarations to a representative and a representative may also apply for simplifications.
- The trader has responsibilities to monitor declarations and to declare properly using an internal control system.

The last bullet means that an initial investigation will take place before the licence is given. Customs investigates whether or not the company can be trusted with the simplified declarations. Is the company able to submit the supplement declaration and is it able to match the supplement declaration with the original simplified declaration?

In case the trader wants to bring in goods which fall under restrictions/ prohibitions, customs might decline the application.

Customs on their part will set up an audit program for the trader that will not jeopardize the benefits of the simplification (art. 226 IA UCC). This control system is actually a plan in which customs indicate how they will supervise the declaration that will be carried out under the licence, how often they will control and that all stages of the declaration will be supervised.

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<sup>5</sup> Basically this is the GPA, which will be explained later in this text.

<sup>6</sup> This has similarities with the GPA. In GPA customs gets every declaration in detail.

<sup>7</sup> These demands apply for all licences.

Below some Dutch numbers are listed about import declarations in order to understand the impact of simplified declarations.

	Customs duty in €/ year	# declarations/ year
Normal declaration	2,000,000,000	6,000,000
Simplified declaration	1,000,000,000	120,000,000

So most declarations in the Netherlands are done via a simplified procedure (rate 20:1), however only  $\frac{1}{3}$  of all customs duty is related to the simplified declaration. The reason for this is that when containers come in the Netherlands and would directly be brought into free circulation, this would account for one declaration. In case the container is stored under customs supervision, the products will be declared for further proceeding (either free circulation or export), when they are sold. Then instead of one “big” declaration, several small declarations will be made: one for each transaction. Especially in those situations the simplified declaration, using GPA (Geautomatiseerde Periodieke Aandifte) as supplementary declaration is very common in the Netherlands. This causes an explosion in the amount of declarations, although the total amount of companies working with GPA is limited in the Netherlands: around 250 in 2016.

### GPA

The license for this simplified procedure allows traders to declare the goods by entering the declaration in the (declarant's) records. Then once a month an overview with all transactions is sent to customs: the automated periodical (supplementary) declaration, the GPA. Next to this the goods do not need to be presented to customs. Of course a licence is needed for this simplification. The picture below presents this process in time.

Figure 8 Flow of goods GPA



So goods are transported from the RTO and are moved to a, e.g., warehouse inlands. This is possible by three ways:

1. ALEN procedure. The warehouse needs a licence to enter the goods already in their records while the goods are still at the RTO. In this case no NCTS/ TATG is needed.
2. The transport is declared via NCTS.
3. The receiver is a TATG (Toegestaande Afzender/ Toegestaande Geadresseerder<sup>8</sup>, (authorized sender/ authorised receiver), which is basically a simplification on NCTS.

At the final destination the goods are recorded in the administration, which accounts as the declaration. Officially each shipment has to be enrolled to customs, but in Dutch practise there is a waiver of notification, the GPA is sufficient. The goods are released immediately for further processing/ transport, physical inspection hardly ever takes place. The GPA always concerns one or more particular customs procedures, e.g. GPA free circulation or GPA bonded warehouse combined with free circulation or GPA inward processing with free circulation. It consists an overview with all customs transactions, meaning an overview with all products which were e.g. brought into free

<sup>8</sup> Most customs warehouses have a license for TATG, so goods do not have to be presented to customs on arrival

circulation or inward processing. Custom officers familiar with the company inspect the GPA according to the predetermined control program (which was established after the initial investigation and the granting of the licence). Furthermore the company is administratively controlled once every three years.

In the early days of GPA, early 2000, the declaring via GPA led to some serious disadvantages. The first was that in case the supplement declaration was done and documents were missing, the goods had already left the warehouse and were already consumed somewhere in the EU. For the companies it was difficult to resubmit what was missing and a fine was given. However, the GPA, as said, caused an explosion of the declarations. It was undoable for customs to thoroughly control all declarations. As the companies were known and labelled trustworthy, the declarations were hardly examined. Only after the controlling of the declarations was done automatically by customs (e.g. by controlling automatically whether or not all documents which are needed for a certain procedure are added), customs found out that many mistakes had been made by all these companies. GPA was then adjusted and controlled automatically for each declaration whether or not all information and documents needed for that declaration was added. Nowadays the companies get response on their monthly declaration (GPA). This has led to great improvements of quality of the GPA declarations.

### EIDR (Entry in the Declarant's Records)

EIDR is a simplification, named in the UCC, which has many similarities with the under CCC often used "domiciliërsregeling". The main thing which is going to change is the stricter obligation to present the goods to customs (Dutch companies were given often a waiver to present under the CCC).

When a licence is given for EIDR, this is always in combination with the following customs procedures. So e.g. EIDR free circulation, or EIDR customs warehouse. Article 182 of the UCC describes the legal basis for this simplification *"The customs authorities may, upon application, **authorise a person to lodge a customs declaration, including a simplified declaration<sup>9</sup>, in the form of an entry in the declarant's records, provided that the particulars of that declaration are at the disposal of the customs authorities in the declarant's electronic system at the time when the customs declaration in the form of an entry in the declarant's records is lodged**".* So goods are considered to be declared the moment they have been recorded in the administration of the company. They are considered to be released the moment the predetermined period has expired in which customs might indicate to inspect the goods (art. 235:1 IA UCC). As described in the licence the supplement declaration must be send within a predetermined period or customs must have electronical access to the information and documents (art. 225 IA UCC).

When using an EIDR a supplementary declaration is nearly always mandatory. Only in case (art. 183 DA UCC) the goods which were placed under a customs procedure (except transport) are cleared by placing them under a new customs procedure (except transport) and the licence keeper of the first and second procedure is the same, and the first declaration already was followed by supplement information or was declared on the normal way, and the second declaration may not be specific use or inward processing.

The Implementing Act of the UCC specifies the demands for being allowed to 'entry in the declarant's records' in art. 234. Here it is said that the company entering the goods in the records must:

- Present the goods to customs.
- Enable to find easily all information (needed for a normal declaration) including the necessary documents within the records.
- Allow access to customs upon request (possibly electronical access).

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<sup>9</sup> In practice all data needed for a particular declaration has to be uploaded.



- Provide customs information in case the declaration concerns prohibited or restricted goods.
- All needed documentation needs to be at the customs disposal, before releasing the goods.

Article 182: 3 UCC however also indicates that a waiver for presenting the goods can be granted to the trader. Criteria to obtain this waiver are:

1. The declarant has an AEO Customs licence.
2. The nature and flow of goods justify this dispensation.
3. In case the inspecting customs officer finds it necessary to inspect the goods, all relevant information and documentation are at his disposal.
4. The goods for which the EIDR licence is applied, do not fall under prohibitions or restrictions.
5. In case of entry in the records in a temporary storage, the records must indicate precisely when the goods leave this temporary storage (art. 234: 1f IA UCC).

However even when a waiver to present is given, customs may if deemed necessary demand the goods to be presented. When the goods are then considered to be released is set down in the licence.

At this moment every company working with GPA, also has a waiver to present. The criteria companies had to fulfil were not so strict. The impression however exists that under the UCC, the criteria for this waiver will be stricter. But at this moment these stricter criteria are not known yet. More information than listed above is not yet available. So companies do not know yet how to obtain this waiver for presentation. On European level customs are still thinking about how to explain the criteria for the waiver. For companies however it is very beneficial to have this waiver. Without it, they have to present the goods to customs and have to wait until customs releases the goods. That can be 30 minutes. The expectation is however that less companies as is the case now, anno 2017, will obtain the waiver to present.

So for companies wanting to have EIDR:

- 1) An initial investigation must take place in which the company has to prove they can be trusted to act compliantly and record the (simplified) declaration correctly.
- 2) Companies must meet the same demands put on AEO Customs Simplifications as stated in art 39: a, b and d (UCC) (art. 150 DA UCC)
- 3) This is only possible in relation to free circulation, customs warehouse, temporary import, specific use, inward processing, outward processing and (re)export (art. 150 DA UCC).
- 4) Must predefine the goods which will fall under the licence and the nature and flow of the goods (art. 182 UCC). So goods which fall under prohibitions or restrictions may not be falling under a licence for EIDR. Hazardous routes or supply chains or the nature or frequency of flow may also prevent giving permission by customs to use EIDR.
- 5) In case the company has no waiver to present, each declaration has to be followed by an approval of customs to release the goods. In case the company has a waiver to present, goods may proceed further.
- 6) Still sends a supplementary (periodically and/or recapitulative) declaration to customs. Up to the moment of replacing that is done via the GPA. Foreseen is that GPA will be replaced, ultimo 2020.

So companies having a waiver will never endure a physical inspection anymore (as is the case now). This latter might be considered conflicting with the inspection-thought: inspection is always possible and will take place unexpected.

EIDR is best suitable for supply chains wanting to avoid unexpected delay.

### AEO demands

As described above companies applying for EIDR must meet the AEO Customs Simplifications requirements stated in art 39: a, b and d of the UCC. These demands are:

1. the company of employee responsible for customs may not have committed serious offences or repeated offences against customs and tax legislation or have committed criminal offences;
2. the company must be able to control its operations and flow of goods and must keep proper record keeping of commercial and transport operations, which allow customs to control the physical flow administratively;
3. the company must have employed staff having the appropriate knowledge, qualifications and competence related to the activity carried out.

Article 24 until 27 IA UCC specifies this and the Richtsnoeren Geautoriseerde Marktdelnemers (European Commission, 2016, b) specifies this even more. Article 24 IA UCC specifies who may not have committed the serious offences and what is considered to be serious offences. As this has no link with internal processes, this is not further described here. Article 25 IA UCC specifies the proper trade and transport record keeping:

- The record keeping should comply with the national accepted record keeping system, allowing customs to control all customs related processes administratively, using historical data about the audit trail from the moment the goods have been firstly registered in the records until the goods leave the company. This audit trail is made up by reconciliation equations, linking each journal to original sources and must be integrated in the IT system.
- Administration used for customs purposes is integrated with the rest of the administration, the ERP system, allowing cross reconciliation between customs related information and the regular record keeping system.
- Customs has physical and, if possible, digital access to the administration, including trade and transport record keeping independently where the information physically is stored. Access can be given on paper (small amount of data), portable information carriers, like a usb-stick or digital access to the IT system of the company. Customs always request for the information in order to analyse it. Hence the data must be up to date.
- The inventory record keeping system of the company distinguishes between Union and non-Union goods and indicates where they are stored. This is especially for the AEO Customs simplification (fiscal aspects).
- The company has an administrative system suitable for the company and for managing the flow of goods. Furthermore the company has an internal control system with which mistakes, illegal acts or fraud can be prevented, detected and corrected. This includes employing staff which should inform customs in case the company does not comply with customs regulation. This means customs do not determine a minimum to which the company must comply. The administrative system must be adequate for the company.
- In case the company trades agricultural or other trade-political sensitive goods internal procedures are adequate. So again internal control measurements must be adequate for the company. A company importing textile or agricultural products demands other internal control measures than a company importing i-Phones.
- The company stores its data and has adequate procedures to prevent data gets lost. The company must have a back-up plan in case data gets lost.
- The company has appointed an employee who must inform customs authority in case the company does not comply with customs legislation.
- The company has adequate security measures to prevent unauthorised people to enter the IT system. Customs must inspect whether or not the security measures to prevent unauthorised people to access the system are sufficient. Special focus is on the mobile devices which are currently widely used by employees. Are servers placed in a separate

room, with limited access? Are firewalls installed? Do screens automatically shut down when not used anymore? Are passwords used? Questions like these must be answered sufficiently.

All these demands indicate the necessity of management involvement. Applying for AEO/ meeting the demands from art. 39: a, b and d UCC is a strategic decision and involves investment and time spend of employees, active attitude towards risks and internal control.

If a company has other customs licenses, customs may not control the same things twice. What is overlapping and covered by another license, must be accepted by customs as being in order. Controls must also take place within the company itself. Customs must inspect whether or not processes are carried out as prescribed in procedures and information handed over is correct. Control must be company specific, taken into account specific circumstances.

Article 27 IA UCC specifies the professional expertise and competence:

- The employee responsible for customs and trade compliance has three years provable experience with daily customs processes and complies with a quality standard for customs acknowledged by European normalisation organisation and has successfully graduated from an education on customs law, appropriate for the customs activities done by the company. This education is given by the customs authority of a member state, or a school qualified by customs, or an organisation qualified by customs.
- In case customs processes are outsourced to e.g. a customs agent, the company fulfils this obligation in case the customs agent has an AEO Customs simplification licence. The company stills needs an internal control system to verify whether or not the agent did not make mistakes. In other words: the activities may be outsourced, the responsibility is not.

The company may itself choose how to indicate its sufficient professional expertise, but this must be sufficient with the specific logistic role the company has in the supply chain and the nature of the customs processes. The employee responsible for customs activities must do this within an official function within the company (has authority to do so on behalf of the company). In case more employees are responsible for customs processes, all these employees must fulfil the obligations.

Under the CCC management had to declare that the “company”/ staff responsible were known with customs legislation, that they would be kept informed about customs legislation and proper internal measurements were taken. Back then several strategic discussions were held with management of companies. This all resulted that customs processes increased in importance. Instead of customs affairs being part of logistics, warehouse or finance, customs is now more a strategic topic for a company. Customs affairs is now being treated more professionally.

Of course the role in the supply chain determines whether or not a company wants to invest in AEO/ customs expertise. This is determined by financial or commercial reasons and the number of declarations. Underlying reason is often that process may never be disturbed or clients of a company demand that it is AEO. The kind of goods which are being imported, the route via which they enter and origin also plays a role. So if speed is important and highly risk goods are being brought into the EU, AEO is more important.

The role the company has in the supply chain, together with the risks involved, determines for customs what they expect which customs knowledge/ expertise is sufficient for a company. This is company specific and may differ between companies. The aim is that the company is aware of the risk involved in the customs processes and the related legislation. A company “new” in the customs domain, could in this situation never apply for the AEO, as they lack expertise. That would not be a desirable situation, so in this case, company specific solutions will be accepted.

Compared with the CCC, the AEO is now a licence (not a certificate anymore). This means that applying for an AEO licence is the same process as applying for another licence.

### EIDR and representation

Many companies outsource (partially) their customs activities to e.g. customs agents, due to the very complex and extended legislation. This can be either direct or indirect (see art. 18 UCC). In case of direct representation, the customs agent declares in name and on behalf of the company, which is the declarant. Possible customs debt has to be paid by the company and the company is also responsible for possible mistakes the agent makes. In case of indirect representation, the customs agent is also liable for the customs debt and possible mistakes. Therefore most customs agents prefer direct representation. In case the company, which is represented, is located outside the EU, the representation must be indirect in order to assure payment of the customs debt.

In case of EIDR, the declaration is considered to be made when the goods are recorded in the *declarant's* records. In case of direct representation, these are the records of the company which is represented. This means that the company itself (which wanted to outsource customs activities) must apply for the EIDR licence and meet all the demands customs put on this licence, including the demands on record keeping and the demands on qualified staff. In case of indirect representation, the goods would have been recorded in the customs agents records to have them declared. This of course will not happen.

### Possible approaches towards EIDR

Students from the master Customs and Supply Chain Compliance investigated possible approaches for companies to work with EIDR.

Figure 9 Possible approaches towards EIDR

Approaches	Explanation
No additional measures (minimum required by UCC)	Companies will send notifications (unless a waiver is granted) to Customs and submit a supplementary declaration. Customs will perform more physical and administrative checks due to the notifications and the lack of information regarding e.g. the movement of goods within a warehouse.
Audit file	An Audit File is a computer file that stores the most frequently used data. The file specifies a default for all the changes in the administration in relation to the goal of the file, such as the date, item number, quantity, etc. Companies send an audit file (an extended GPA) to Dutch Customs and the situation will be more or less the same as it is currently, with the possibility to vary with this in periods and form depending on the level of compliance of the company. This should lead to fewer (or none) physical checks and administrative checks.
Access companies' systems	Companies could be supervised by accessing their systems. Dutch Customs can view the information right out of the system, without interference of the company. This is better known as "online and real time access". Dutch Customs determine the enforcement on basis of the information out of your systems.
Dashboard	Customs supervision could also be based on a dashboard - a user interface, maintained by the company (online real time or only on premises) making information readable / understandable. This dashboard should contain information about internal controls, audits performed, but also about the flow of goods. The dashboard then reflects that the company is in control.
External experts hired by company	Dutch Customs could also rely on external experts e.g. with respect to the flow of goods within the warehouse. Companies should hire experts (e.g. accountants or consultants) to perform a periodic audit (once a month or once a year, depending – for instance - of the level of compliance). The report is provided to Dutch Customs.

Source: Van 't Hof, Kondrashova, Palasios Miras, Speelman, 2016

In order to interpret this correctly: the supplementary declaration will probably be lodged via AGS. Next to this under GPA control information had always been send. Control information is used to give customs insight into the movements of goods within a customs warehouse from a distance (so no inspection in the warehouse, but inspection based upon the data provided). The control information has been determined during the initial research. Under the CCC the supplementary declaration and control information was send using one file. Under the UCC the two most likely will be separated. The options suggested by the four students deal with the control information. Implications of these alternatives are:

- Option 1 “no additional measures”. If no additional measures are taken, customs will have no insight in the movement of goods in the customs warehouse. Companies should in that case be controlled administratively more often. For both customs and the company, this is probably not wanted.
- Option 2 “audit file”. The movement of the goods inside the customs warehouse will be controlled regularly.
- Option 3 “access to companies’ systems”. In this case, customs must search for the control information themselves in the systems. Both customs and companies do not like this idea.
- Option 4 “dashboard”. High costs to develop.
- Option 5 “external experts”. Very costly and unclear who should pay for this.

These students found that the audit file was most preferable by the companies they questioned. This is in harmony with developments of software providers who develop systems which automatically generates control information, which are also in line with other internal control measurements.

### Summary

Although it is still unclear how the EIDR simplification will exactly look like in practice, highly probable the Dutch domiciliëring procedure looks much like it. Both have:

- Simplified declaration by entry in the records just briefly before the goods fall under the procedure;
- To present the goods to customs and wait for release, unless a waiver for presentation is granted. In that case goods are immediately released after entry in the records. Now most companies using GPA have a waiver for presentation. The expectation is that much less companies will be given this waiver.
- A supplementary declaration. This used to be the GPA, in the future this is going to be a different system (e.g. AGS).
- To submit to customs control information upon request by customs. This used to be submitted via GPA and is going to be possibly an audit file.

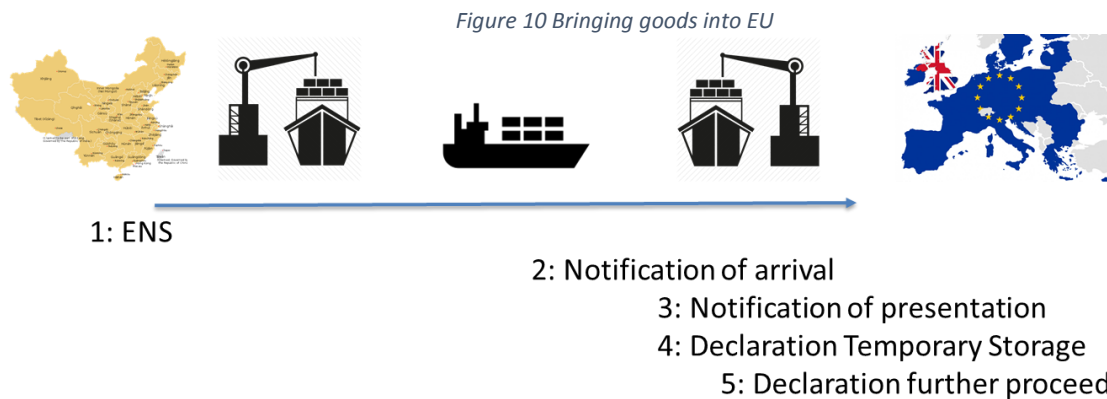
### 5.3 Extension of Entry Summary Declaration (ENS)

In the following the submitting of the ENS will be explained, the process will be described, which data has to be send to whom and demands on IT. The text has been derived from studying the UCC and an interview with Roel van ‘t Veld, Dutch Customs, on February the 1<sup>st</sup> 2017 and with Wout Hofman, TNO, on February the 21<sup>st</sup> 2017.

The text below describes the process of ENS related to deep sea transport, as, in terms of volume, the overwhelming majority of all cargo coming into the EU is transported by this mode. If necessary side steps to air transport will be made, as in terms of number of shipments and value of the shipment, most cargo comes in via this mode.

### Process of submitting ENS

Under the old CCC, the carrier was obliged to lodge an Entry Summary Declaration, ENS, 24 h. before loading the goods on the vessel. This declaration had to be sent to the customs office of the first EU port for all the goods on board, who performed a non-fiscal risk-analyses, with a focus on safety and security aspects (see art. 127: 5 UCC) If necessary the goods were not allowed to be loaded. In Europe the outcome of the risk-analyses was sent by this first customs office to other customs offices, where the goods were supposed to be unloaded. Based upon this risk analyses shipment were possibly selected for physical analyses. In the picture below this process is presented in time.



So first an ENS was sent to the first EU customs. Just before arriving in the EU port a notification of arrival was sent to the customs in the port where goods will be unloaded, to inform customs the shipment was about to arrive. Shortly after this a notification of presentation and declaration temporary storage was sent to these customs. After which customs gives then permission to unload. Goods are now unloaded and stacked on a Temporary Storage Facility (TSF) and in status temporary storage. In case the risk analysis' outcome was "white", no non-fiscal risks were expected and the shipment could proceed unhindered by customs. In case the risk analysis' outcome was "orange", the carrier had to submit supplement data in order to run a proper risk analysis (art. 186:3 IA UCC). In 20% of all cases the outcome is orange, so supplement data is often needed. Very often the carrier did not have this data (otherwise this data would have been send in the first place). In case the shipment "hit" a risk profile during the risk analysis, the outcome was called "red" and the shipment was selected for physical inspection. From the TSF the container had to be brought to the customs office where the physical inspection took place. Both orange and red shipments suffered from delayed throughput time in the port.

The forwarded outcome of the risk-analyses together with the declaration temporary storage, triggered the customs office of the port where goods were unloaded that the selected shipments for physical inspection had arrived.

In order to lodge an ENS to European customs, a carrier needs a licence. This licence used to be national and applied for nationally. The carrier had then access to National Trader Interfaces (NTI). In case a carrier used different routes and the first port to enter Europe differed, they needed several national licences. If a licence was given, the trader could then lodge the data, using a Message Information Guide (MIG indicating how the data must look like in order to send it). In the Netherlands this was done via the DMF system.

Disadvantages of this system are well known: as the carrier has limited information about the goods he transports<sup>10</sup> (with understandable reasons), the risk-analyses are based upon low quality data<sup>11</sup>. Based upon the data submitted, customs could not establish “what was in the box”. Furthermore the exchange of the result of the risk-analysis and the result of possible inspection between the several national customs offices was very difficult.

The UCC anticipates on these disadvantages by allowing more traders in the chain to submit data for the ENS and the S&S risk analysis (art.127:4 UCC). The picture above (figure 10) changes only little. When submitting the ENS 24 h. before loading, two options exist. Either the carrier submits the complete ENS (upon which a proper risk analysis can be made), or the carrier submits a partial ENS and other traders in the chain submit supplement ENS. In case no proper data is submitted, the shipment will be delayed in the port. So traders in the chain welcome this possibility to submit supplement ENS. The extension of the ENS is particular of interest in case of perishable goods, high value goods and e-commerce. The latter has grown tremendously and will grow even more. For customs it is difficult to control this huge incoming flow. Accurate risk analysis is therefore very important.

When other traders than the carrier submit data, this should be added in the transport contract (to clarify who does what). Article 184 IA UCC and 112 DA UCC specifies then who in the chain is responsible for which data to be submitted to customs. Article 184 IA UCC indicates that the carrier shall reveal the identity of companies with whom a transport agreement has been conducted and who might submit supplement data, the carrier also has to inform the other traders to submit supplement data. Article 112 DA UCC says then that this company is responsible to submit this data to the first customs office in the EU. Annex B of the DA UCC indicates in these situations which trader is responsible to submit which data. Traders could also be motivated to participate by paying them sooner or lower their needed financial guarantee.

The ENS may be deducted from trade IT systems, provided the necessary data is available in these systems and on time (art.127: 7 UCC). It is also possible that customs are notified a shipment is coming and customs are given access to the IT system of involved company (e.g. importer, customs agent), to withdraw the necessary data. Article 182 (IA UCC) indicates that a specific IT and communication system will be used to lodge, process, store and exchange information about the ENS as described earlier. The data may be lodge in several dataset for one ENS (art. 183 IA UCC) and each partial dataset will be registered by a separate MRN (art. 185: 2 IA UCC). The partial ENS will be couple together by using the Master Airway Bill and House Airway Bill/ Master Bill of Lading and House Bill of Lading. The carrier will be informed when the other partial datasets about one shipments have been sent to customs (art. 185: 3 IA UCC), as the carrier has the main responsibility to submit the ENS. He then knows that all obligation are met.

So the UCC gives room to develop several options to submit supplement data for the ENS, the so called multiple filing.

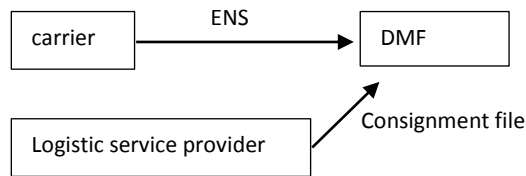
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<sup>10</sup> The Rotterdam Rules indicate that the carrier must not know what he transports, in order to limit the liability in case something goes wrong/ goods get stolen.

<sup>11</sup> This was well known at the time the decision was made to have the carrier be responsible for the ENS. Still the carriers were given this responsibility, for they did not want to loose control over the supply chain.

### Option 1 current practice

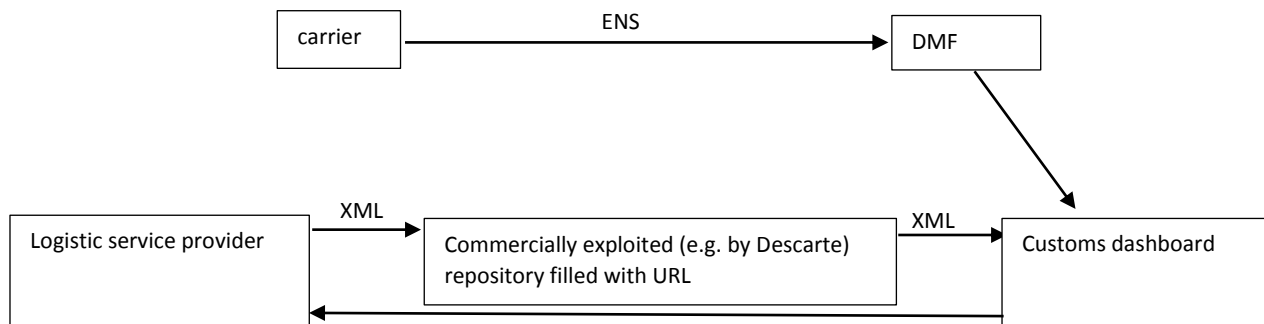
Figure 11 Multiple filing: option 1 current practice



In this case the carrier still submits an ENS based upon Master Bills of Lading. In case the shipment turns out to be “orange”, a logistic service provider who acts on behalf of the importer/ exporter (who has an advantage of having the goods not being delayed in the port and who will therefore authorise the logistic service provider to do so), submits a consignment file. This file consists of e.g. a purchase order (making the content of the shipment clear and the buyer and the seller). DMF must then couple the MRN of the ENS with the MRN of the supplement declaration. The logistic service provider also needs a national licence to lodge data on the DMF.

### Option 2 commercial repository

Figure 12 Multiple filing: option 2 commercial repository



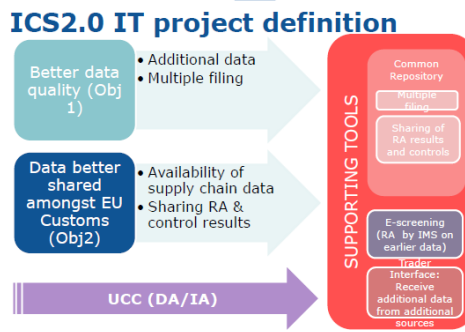
In this case, the logistic service provider sends XML messages to the commercial repository, indicating that an logistic milestone took place (e.g. loading, unloading) and combine this milestone with an URL number, which indicates where to find information on the milestone (packing list, purchase order). The logistic service provider still holds and keeps the information. A Customs Dashboard receives also a XML message indicating that information is available. In case a shipment hits orange, customs can look into the dashboard whether or not the information is available and extract the supplement data from the IT system of the logistic service provider. Within the Core Project this has been tested. Advantage of this system is that information is shared easily and traders lodging an ENS do not have to invest in extra IT.

### Option 3 common European repository

Already in 2012 the European Commission presented its vision on ENS in its Import Control System II (ICS II) (European Commission, 2012). ICS II aimed to allow multiple filing and to share the results of the risks analysis and inspections among member states by building a common repository, which would be located in Luxembourg. This vision is repeated by the Commission in 2016 (European Commission, 2016: 11). The Commission and Member States aim to ... “*set up and operate secure, integrated, interoperable and accessible computerised customs systems*”. This means that customs throughout Europe must be able to exchange data electronically about shipments entering the EU, but also that companies, carriers and shippers, must be able to lodge their declarations electronically. The picture below presents what ICS II aims to.



Figure 13 ICS2.0 IT project definition



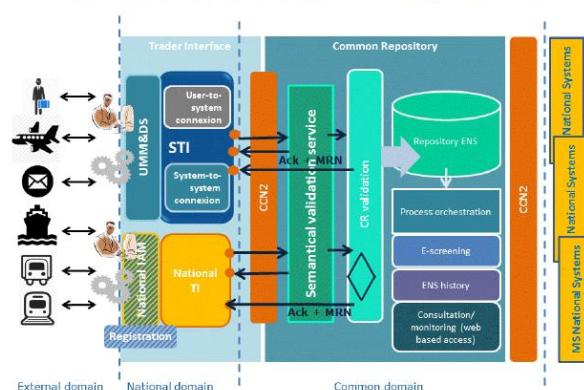
Source: lecture by Frank Janssens on July the 4<sup>th</sup> 2016

This repository must validate and store all submitted ENS (both partial and complete ENS, on house level and master level) during the complete lifecycle of the ENS. This also means that all member states must harmonise their National Trade Interface (NTI) to a European standard and their national ICS must be compatible to the European ICS II. A Shared Trader Interface (STI) could be established. This means that traders do not have to apply for a licence nationally, but on European level and have then access to this repository. In order to achieve the above, new national customs IT systems must be interoperable with each other, therefore they must all meet demands set out in the European Interoperability Framework (European Commission, 2016: 23). Furthermore all European Customs IT systems must be based upon Service-Oriented Architecture (SOA), in order to reuse existing functionalities of different IT systems of several Member States, and CNN2. CNN2 is a private network, by which all the data between traders en European customs and between European Customs bilaterally, will go through. CNN2 will be responsible for all the security challenges. A public call to tender, provided by Taxud, will decide which private service provider may offer these services. Any changes, demands for traders on IT or financial side will be initiated by Taxud.

According to the picture below, traders would only need an UMM&DS (Uniform User Management & Digital Signature) to connect their systems to this common repository.

Figure 14 Trader Interface with IT components

#### Trader Interface with IT Components



Source: Slides from presentation by Frank Janssen on July the 4th

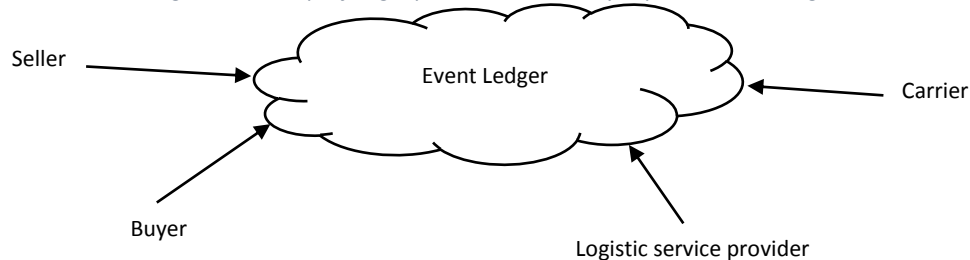
Furthermore an ENS+Trader Data Exchange would be built, for the traders to trace their ENS.

However member states, among which the Netherlands, oppose against this idea. They fear losing control over data. Besides this building of this repository is expensive (200 million euro).

### Option 4 commercially exploited event ledger

The fourth option uses the block chain technology. Block chain technology stores and distributed data, which are uploaded by different parties. This data can't be manipulated by others, but indeed be verified and exchanged among participants. The storing of data (the needed storing capacity for ENS will be huge) is also spread and the cloud could be used for this.

Figure 15 Multiple filing: option 4 commercially exploited event ledger



In this situation each trader in the chain will upload logistic milestones (loading, payment, selling) and URL which are coupled with the actual information (purchase order, packing list, Bill of Lading, House Bill of Lading, and the such), just like option 2. This requires standardisation on the milestones which will be uploaded. So all the information about a shipment which is relevant for the S&S risk analysis will be uploaded (accurate product description, origin, destination, route). European customs can download every bit of information they want.

The carrier still lodged the ENS, for which a MRN will be appointed. Customs can match the supplement data by using the Master Bill of Lading

All traders working with this event ledger needs a device to upload data, e.g. current smart phone, and download an app which gives access to this ledger. Small changes to the IT system to generate the milestones and to link the own IT system with the app is also needed.

IBM already developed and tested this event ledger in the supply chain of Heineken Beer to the US with Mearsk. This worked, however the unit of with data was uploaded was a container. In case of LCL this does not work yet and adjustments needs to be made. To have this running worldwide, it is also not clear how users will have to pay for this: when downloading the app or for each transaction.

### Summary

Again it is still uncertain how the Extension of the ENS will be realized exactly. Indicated is that the investment or IT skills needed for companies or adaption of processes is limited. Security and Safety is expected to improve with all four options as the risk-analysis will be performed on better data quality. Option 2, 3 and 4 also gives possibilities to share the data among European customs.

## 5.4 Absorptive Capacity and new "UCC" concepts

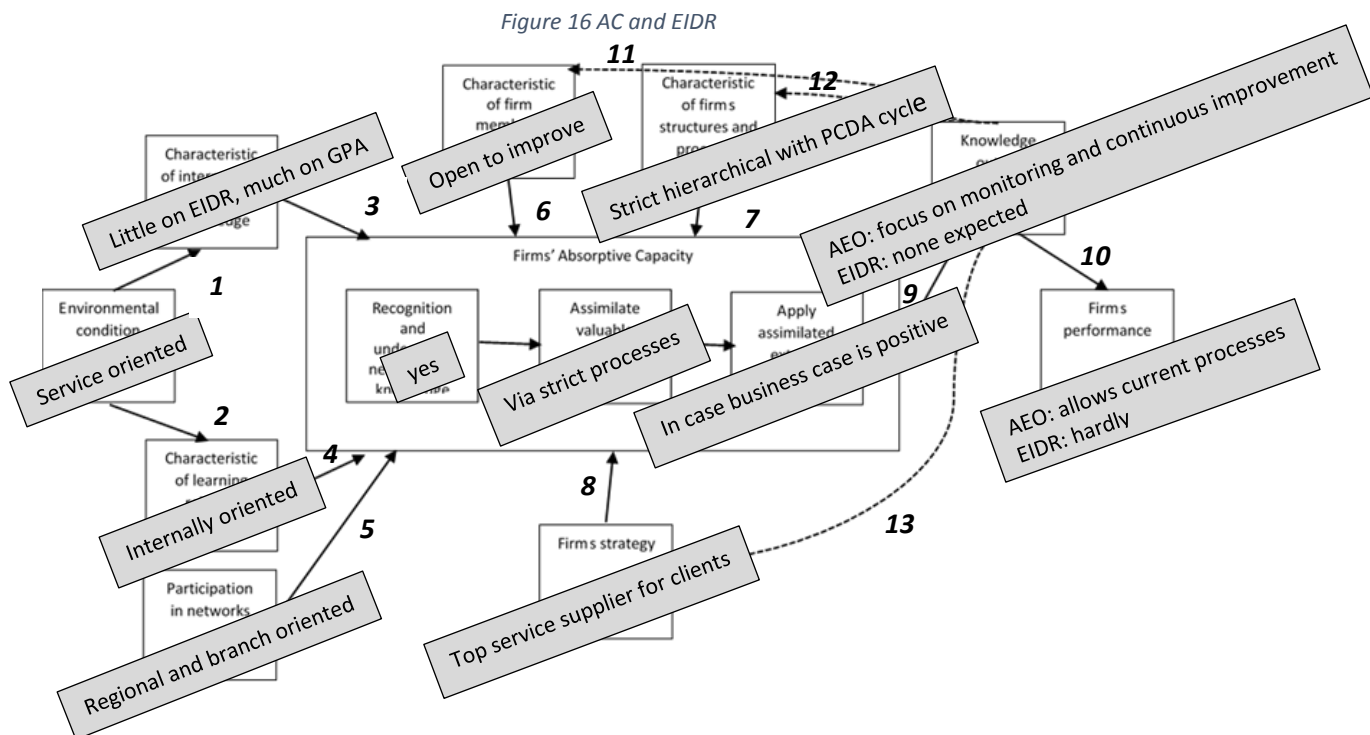
### 5.4.1 Introduction

In order to test whether or not the model, as shown in figure 5, can explain why companies absorb external knowledge related to EIDR and extension of the ENS, employees within two companies were questioned. Studying EIDR and Extension of the ENS (paragraph 5.2 and 5.3) helped formulating the right questions. Three employees working in a company considering to implement EIDR and three employees working in a company which has implemented a way of optional filing, which is a possibility of the Extension of the ENS, have been questioned. In order to investigate the role of customs in spreading knowledge about UCC and concepts, three accounts managers of Dutch

customs (KlaCo's) were questioned as well. The literal reports of these interviews are however confidential and therefore only accessible for the supervisors of this thesis. According to Baarda et al (2005, p. 318), in order to analyse, these interview reports have been labelled. In Appendix III the outcome of this labelling is added. In the coming two parts the model, as shown in figure 5, will be used to explain how the two new concepts within the UCC have been absorbed/ might be absorbed.

#### 5.4.2 AC and EIDR

In the picture below, the adapted model on AC from figure 5, has been filled with, very limited, quotes from the interviewees. In the text below the model and causal relations have been explained. Each relation has been appointed a number, which is explained in the text.



The environment of this company is described as competitive. Offering service to highly demanding clients is important. Customs related tasks are important, GPA however only plays a minor role in this company. Because of these highly demanding clients AEO has been implemented, as AEO allows to operate efficiently.

1. As time is scarce, due to the highly competitive market and the need to be as productive as possible, not much time has been spend on learning on EIDR yet. Because too much uncertainty still exists about how EIDR will be designed. The company has not much knowledge yet about the subject. They indicated that there is little knowledge on EIDR available anyway. The gatekeeper however has implemented GPA within the company and has therefore much experience about GPA.
2. The environment also explains how learning relations look like. Much learning is done internally from specialized colleagues, but not in a structured or regular basis. This is due to the competition, which does not allow sharing knowledge externally. Most customs knowledge has been acquired during studies. Questions from clients, operational tasks and changing of law motivates employees to learn something new. What to learn/ how to change

the company is then a business case and decided by management. This is understandable, as the market doesn't allow expensive uncertain actions with no clear business case.

The network consists mostly of old colleagues, study mates and meeting organised by the branch organisation or by customs. The company has contact with local university of applied science.

3. Although the network is considered to be important, it is difficult to learn from the network and to translate ideas, which were picked up from the network, to the company. A gatekeeper is appointed to visit these network meetings and scan for interesting new ideas. Surely the gatekeeper of the company, who has much experience with GPA, is interested in the new development of GPA: EIDR.
4. The learning relations can be described as internal oriented, learning from colleagues. This might explain why the focus is on improving existing processes. As the company now uses GPA, logically they keep an eye on EIDR.
5. The gatekeeper has a link with branch and customs organisations and has been and will be informed about new customs developments via these canals, also on EIDR.
6. The interviewees indicated that they have an open mind towards new ideas and knowledge. Therefore they are also open to EIDR, but will only implement EIDR if the business case turns out to be positive.
7. The organisation is designed as a normal line- staff structure. Very hierarchical, little need to cooperate between departments. Communication between departments happens via linkin-pins. All processes are strict defined and strongly linked with the IT system. Any assimilation of new ideas will therefore only take place after approval of MT and then adaption of processes and the IT system to the new processes.
8. The company want to be number 1 in his niche. Offering high service against the lowest possible costs is therefore important. This well explains why the company is interested in any idea which strengthens this position. The AEO status allowed the company its current processes, GPA allowed efficient declarations.
9. The company has learned about implementing AEO. It now has more focus on security, monitoring and registering of processes (so being more in control), and the continuous improvement cycle (the yearly internal audits with improvement trails), helped the company to be prepared for the field assessment, they passed with (relatively) little effort. As EIDR is merely an operationalisation of a rather small part of the organisation, they do not expect to learn much from this.
10. AEO allows the company to operate as it does. Having the AEO status allows more efficient customs processes. EIDR is expected to have little impact on the performance of the company.
11. Being an AEO company, made employees more aware of customs related issues. The focus on what is happening in the world of customs is open and to recognise new interesting ideas. EIDR is expected to have no influence.
12. Being AEO changed the way the company monitors and registers. That has increased. This also allowed the company to map more adequate where it stands. The new knowledge flows back into processes and structures as said before: being better in control. It also helps in case

the company decides to implement EIDR: that is considered to be no problem. Being AEO changed the structures of the company, which is expected to affect the possible absorption of EIDR (that is considered to be no problem). It therefore possibly increased the AC of the company. EIDR is expected to have no influence.

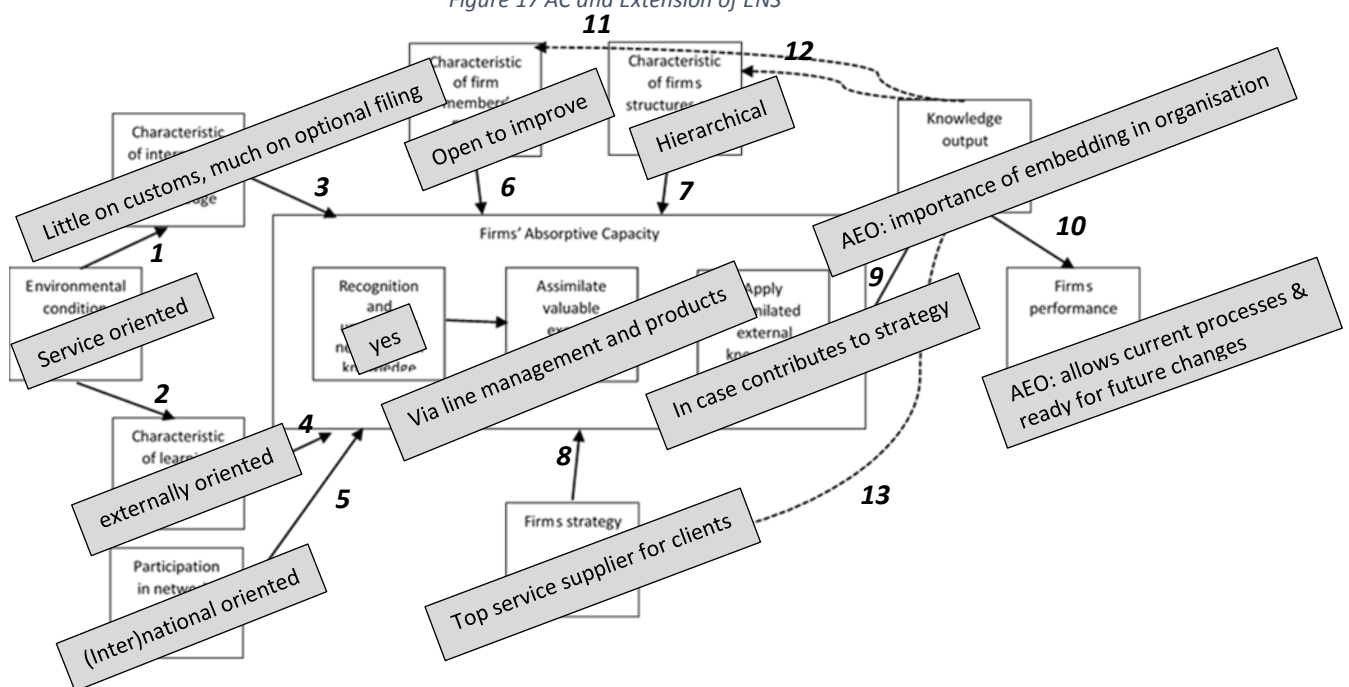
13. Being AEO had no influence on the strategy. It is merely a mean and not a goal. EIDR is expected to have no influence.

Conclusions for the model. Relation 13 can't be explained and seems to be no part of the model. The current relation 5 is not satisfying. The network seems to explain as well how employees learn and not solely what has been recognised as being interesting.

#### 5.4.3 AC and Extension of the ENS

Below the same exercise has been made as in 5.4.2, but now related to Extension of the ENS.

Figure 17 AC and Extension of ENS



The environment in which this company is functioning has been described as high(est) service offering. Other companies, partners and clients, expect this company to be innovative. Following new developments in the field is therefore important. However costs have to be limited as much as possible. Customs related tasks play only a minor role in this company, however a substantial part of all goods comes from outside the EU.

1. The environment well explained why the company has limited knowledge about customs, but high on optional filing. It is their belief that this can improve their processes.
2. As the environment demands this company to follow the newest developments, the company continuously seeks for interesting new ideas and their learning is external oriented. Actively picking up ideas from network, investing in (expensive) studies for employees are indicators that the company is looking actively to external knowledge for internal improvements or new products/ services.
3. Before participating in a project in which possibilities of optional filing is explored, the company knew nothing/ very little about this subject and about customs' procedures. The

reason it participated in the project was the belief, it could improve the processes of incoming flows, even without understanding what extension of ENS or optional filing exactly is. Relation 3 is different than before. The company had no internal knowledge on the subject, but obviously much external knowledge (from the network) existed. This triggered the company to get involved in the subject.

4. Being externally oriented when learning, does very well explain why the company recognised the importance of optional filing for the company. The idea was introduced by an external person.
5. Having such a large network, incorporating national and international organisations, national top knowledge institutes, explains why the company participated in a project of which they knew nothing before. The network pinpointed the interest.
6. The company has an open mind. Quote from the interview "If I do not come up with enough new external ideas, my butt is on the line". Clearly this explain why the company participated in a complete new project for them.
7. The company clearly indicated that AEO and the idea behind AEO has not been fully incorporated by the company. Also other innovative projects have not always been successfully taken up by the company. Only when new ideas are taken up by line management and are part of their targets or translated into new services/ products, it really gets a place in the company. Extension of the ENS was also an item that hardly influenced the company internally. Partners in the chain have mostly been affected.
8. Among others the company aims to create opportunities for the company and its clients. It aims to be at the forefront of new developments. This explains of course the focus on new ideas.
9. After implementing AEO the company learned the importance of incorporating new ideas truly into the organisation. It also concluded it did not always succeed in doing so. When changes are not taken up by line management and in official targets or new products/ services, what happens and how things happen is depending upon individuals. It is therefore uncertain whether or not the company would be ready for a field assessment.
10. By implementing ways of optional filing and implementing AEO, the company is ready for the future and new improvement projects in which customs activities play a role.
11. The company always had an open mind, Extension of the ENS or AEO did not change that, but having implemented AEO and a way of optional filing, did increase knowledge and experience of employees. The way is now open for further innovative developments in the customs domain (e.g. temporary storage facility, innovative clearing concepts).
12. AEO changed not much internally. This might be related to the small customs related activities in the company. Optional filing mainly changed things for partners in the chain. It is expected that the new knowledge is will help the company to improve processes even more in the future, by redesigning the clearance procedure in an innovative way. So all the new knowledge must help the company to remain innovative (this is then actively communicated externally).
13. Neither AEO nor Extension of the ENS changed the strategy.

Conclusions on the model that can be drawn are:

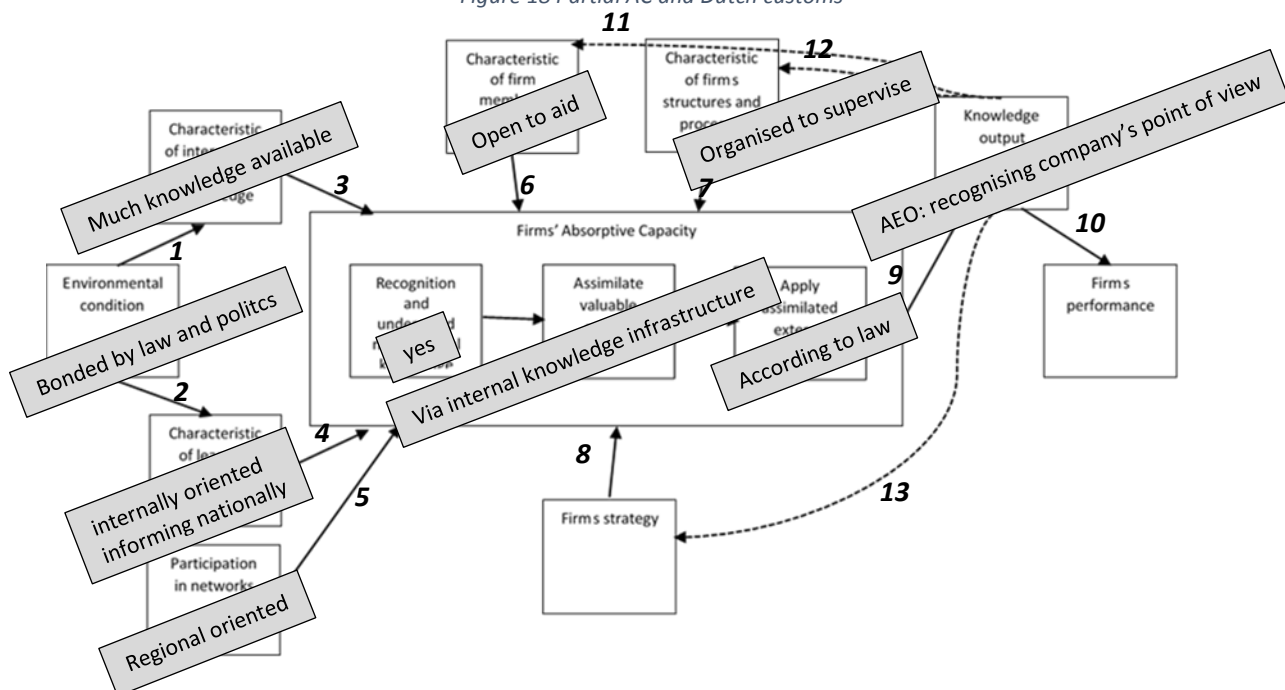
- Relation 3 works differently than before. It is not because of own internal knowledge that useful external knowledge is recognised, but because of external knowledge.

- Relation 5 is again not quite satisfactory. How does the relation work? Does having a network determine learning relations or does the learning relations determine the focus on the network?
- Again relation 13 seems not to exist.
- One difference between figure 4 (original model from Lane, Koka and Pathak) and figure 5 (adapted model after the first test) was the abolishment of the commercial output. This case however really absorbed new knowledge (they hardly knew anything about customs and customs procedures). Now having this new knowledge, they improved the process of incoming goods, but they are also considering to offer new services to their clients. Services which could reduce throughput time of incoming goods. Interesting is why this company sees complete new opportunities for new products/ services and the other companies did not. This could very well be explained by the fact that this case absorbed knowledge from a completely new knowledge domain, whereas the other companies absorbed new knowledge in a well-known knowledge domain. The abolishment of commercial output is therefore maybe premature.

#### 5.4.4 AC and customs

This study did not explore the Absorptive Capacity of customs. It is however believed that customs plays an important role in expending knowledge within their network. The model has therefore only been partially questioned at three KlaCo's (account managers) of Dutch customs.

Figure 18 Partial AC and Dutch customs



Obviously the environment of customs is determined by political decisions, national, EU and international law. These are decisive what and how things happen within the customs organisation.

1. As it is the customs' task to supervise all incoming goods on customs legislation, customs has invested to make sure all customs officers are educated in the UCC. Knowledge is "divided"

in the organisations. There are specialists with “deep” knowledge on one subjects and many generalists whose knowledge is broad.

2. Their learning is therefore internally oriented. They learn from internal (electronical) modules, specialist colleagues. Possibly this is due to the customs’ task: to supervise. Therefore they have to keep a certain distance from the ones being supervised and not get too close/ involved with companies.
3. Obviously customs officers recognise the importance of learning all about the UCC. It is without questioning: it is their task to supervise whether or not incoming goods are treated according the UCC, they will have to learn all about the UCC. Other fields of knowledge is less important.
4. Obviously the Dutch customs organisation is big. It is the task of the KlaCo’s that the supervision of “their” companies is done on a facilitating way. In that way KlaCo’s share their knowledge with companies, without advising them (very close to each other’s range). Other customs officers act as gatekeepers for new external knowledge. Obviously KlaCo’s learn by doing their work, but the organisation is not structured to use this knowledge internally. If customs inform companies about new developments, this must be done nationally (in order to avoid favouring some companies).
5. KlaCo’s have been appointed companies in the region. They have contact with regional companies. Internally they can ask national specialist. Although not done by the KlaCo, many customs officers are involved in innovative projects on national/ EU/ world level (e.g. e-commerce, block chain technology, system based auditing). They have their focus on external knowledge and act as gatekeepers. This new knowledge is than shared in the company and if necessary also nationally with companies.
6. Most customs officers have been trained internally and have been working with governmental organisations for a long time. This is either at customs or the “blue branch” of Dutch Tax Service. All KlaCo’s have indicated they are willing to help companies. However it is their main task to supervise and each individual company itself has the responsibility to know enough about customs’ law to operate compliantly. Customs may not advise, must be neutral and treat all companies similarly. This might be the reason why KlaCo’s know all about the UCC (or know where internally they can find answers), but have no or less interest in explore profoundly the company’s processes and bottle necks.
7. The customs organisation is big with customs officers doing the same tasks around the Netherlands, within regions, and specialised departments working nationally. As it is the task of the entire customs’ organisation to supervise in the same way, customs have designed a new knowledge infrastructure to transfer knowledge around the company. KlaCo’s have indicated that they are not obliged to use this infrastructure or to learn. They all more or less indicated that they were free to do the electronic modules. They are free to call in help from specialists. Not all KlaCo’s have done the same training. This might be a reason that differences exist between KlaCo’s.
8. The strategy of the company has not been asked.
9. Most KlaCo’s have indicated that what they have learned from working with AEO, is to appreciate and understand the company’s point of view. One KlaCo however also indicated that the customs’ organisation did not do much with this knowledge. The only point where



company could give feedback to customs is during ODB (Overleg Douane Bedrijfsleven, meetings between customs and Dutch companies). In these ODB branch organisations are represented, individual companies have little possibility to give feedback to customs.

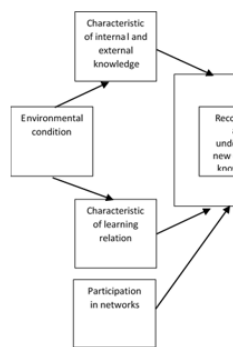
10. No questions have been asked to measure relations 10, 11, 12 and 13, as these relations investigate the AC of customs, which have never been the focus of this study.

Again as the aim was never to study the AC of a governmental organisation, no conclusions for the model will be made.

#### 5.4.5 Conclusions on AC in a customs domain

Conclusions on absorptive capacity of the two new concepts are comparable. In order to be as thoroughly as possible and for validation reasons, all four companies have been used to draw the conclusions in this paragraph. As done before excisions from the model (figure 5), are made again.

In all four cases this was the environment which made it necessary to have knowledge about customs' legislation and procedures. Depending upon the own processes and activities in the market, this knowledge was either small and general or broad and much specialised. But having this specialised knowledge allows the company to recognise new external customs related knowledge. This is done by gatekeepers. Employees knowing much about customs and scanning the outside world for knowledge. For example one company knew nothing about customs before participating in a customs related project. But now other customs related issues (innovative clearing possibilities and temporary storage facility) are also recognised as very useful for the company.

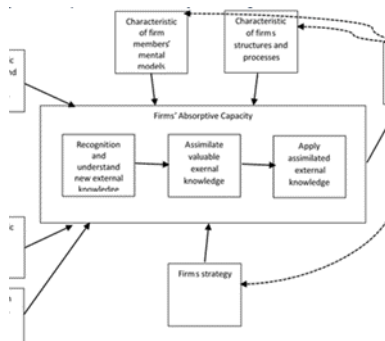


The environment also explains why learning is mostly done internally or within the holding. Competition is too force to share knowledge freely externally. The AC could therefore be well limited due to the restricted sharing of knowledge. And the one company facing not so strong competition, did indeed share their knowledge freely with the outside world by often giving presentations about the outcome of their project. This company profiles itself as an innovative company, hence the sharing is important and used as a way of marketing.

How participation in networks, learning relation and recognition of new external knowledge are exactly related seems not to be fully explained by the adapted model. Two companies had more intense relation with knowledge institutes and participates more often in (innovative) projects. The other two less. Does then the participation in network influence the learning relation, which influences the recognition of new knowledge? Or does the participation in network influence the learning relation (learning via participating in projects) and separately also influence the recognition of external knowledge? The latter seems to explain why a company participated in a project with a beforehand unknown knowledge domain. Is then the AC of these two companies higher than the AC of the companies with a less intensive contact with knowledge institutes? This has now not profoundly been investigated, but it appears to be so for it widens the scope of external knowledge which seems to be useful.

All companies indicated having an open mind to what is happening in the outside world. All four companies had employed staff in fixed contracts working with customs procedures, for whom the

company invested in their customs' education. Employees working in daily operation had at least customs' education on MBO-level. Others (on management level/ advisory staff) a customs



education on HBO/ WO-level. This well explains why these employees have their eye upon customs related knowledge. They understand these issues. One company clearly indicated having high expectations on customs knowledge. This knowledge should help the company to be better prepared for the future.

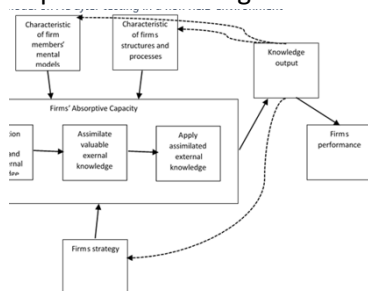
All four companies had an ordinary line- staff structure and are hierarchically organised, well formalised. This explains well why management plays an important role in the decision to assimilate and apply the knowledge and that this knowledge only truly

incorporates in case it is adapted by the line and/ or translated into new services/ products. This also explains why new external knowledge is not actively/ freely shared within the company. One could ask himself whether uncoordinated sharing information (as indicated by Vinding (2006: 510)) would proof to be effective in organisations were the focus is on productivity. The centralised decision making in all companies also limits the exploration of entirely new ideas. The companies seem to focus on improving the current state. Two companies appeared to have better incorporate the ideas behind AEO within their daily processes and structures. These two are were well prepared for the field assessment by customs. Both these companies indicated they took the yearly internal audits with matching improvements seriously and truly incorporated the ideas of AEO. This is then proven by the audits done by customs during field assessments/ re-assessments. Their absorption AEO seems to be better, allowing them to absorb other customs related knowledge possibly more easily as well.

Also the strategy of wanting to offer best services explains why companies bother to invest in innovations.

So internal and external knowledge, learning relations, participation in network, member's attitude and strategy all seem to mostly influence the recognition of external knowledge. Whereas characteristics of structures and processes seems to influence the assimilation and application of this knowledge. The latter seems to be fully internal oriented. So the network is used to recognise new knowledge but not used to use this knowledge. This is maybe due to the fact that it takes to know the own company to translate this knowledge and use this knowledge internally on an effective way. This is in line with Cohen and Levinthal (1990: 135), Lane, Koka and Pathak (2006: 836), Fabrizio (2009:255), Murrovec and Prodan (2009: 870) and Clausen (2013: 67). They also highlighted the importance of own staff as they know the company best and are therefore best equipped to translate new ideas into the need of the company.

All four companies indicated they learned from implementing AEO: being more in control and the importance of being in control. Having an AEO certificate allows them to work as they do now/



prepare them for the future. By having this knowledge they will be focused on customs related external knowledge in the future.

There is a difference between the four companies in how they truly incorporated the idea behind AEO within the company. Two have really went through PDCA cycles on a yearly basis and improved their processes constantly. They were well prepared for the field assessment. The other two did not. One company had just acquired the AEO status and for this company customs

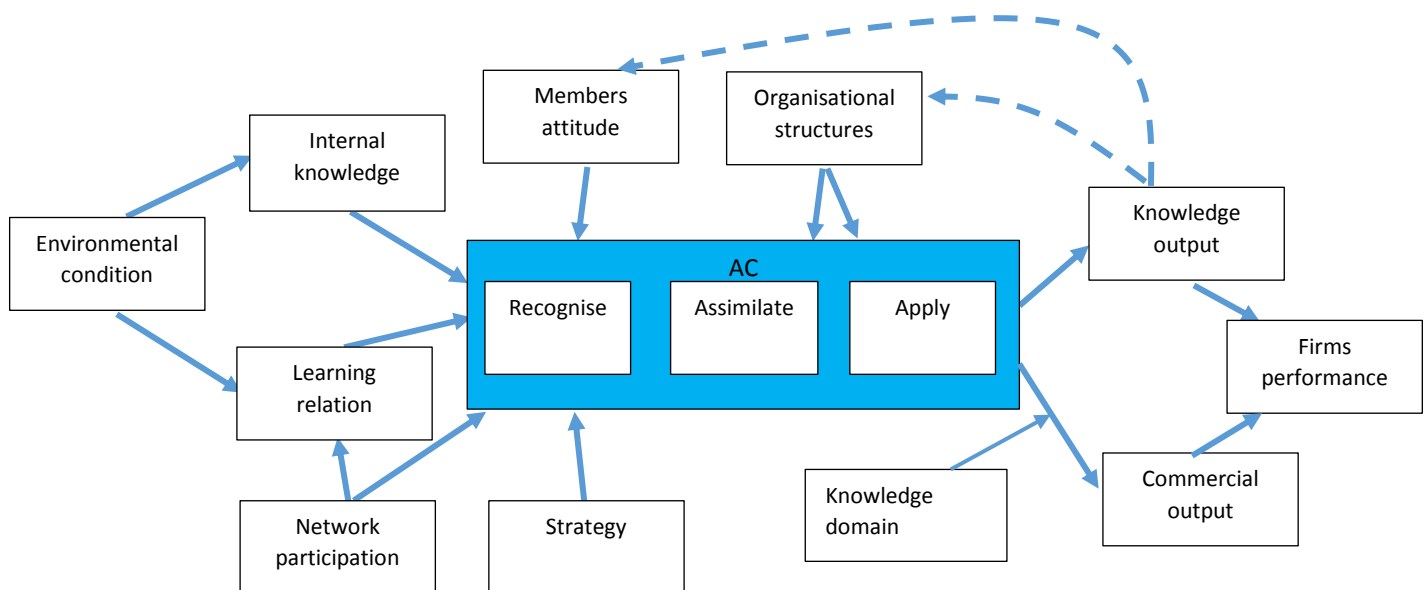
procedures are less important for their daily business. Although for future innovations, they need this status. Also to develop new services. The other company was more negative about this AEO development, maybe therefore did not truly build in internal control measures, but now has difficulty in passing the field assessment. As said before the AC of these two latter companies might be lower.

None of the four companies have changed their strategy due to the firm's performance. Maybe because customs processes are considered to be too unimportant for the company, or because implementing AEO/ one of the concepts was not really an eye-opener on strategic level (but merely on operational/ tactic level).

Although customs indicated they play no active role in expanding knowledge on UCC/ supervision concepts, all companies indicated they learned a lot from customs. Obviously customs do play an important role in expanding knowledge via their national canals (website, letters, DBO<sup>12</sup>, national congress, road-shows) and regional meetings with companies. They inform companies about e.g. reduction of the amount of mistakes made, improvement of the declarations and to smoothen the logistic flow. But they do not advice individual companies, in contrary they supervise individual companies.

So for both new concepts, Extension of the ENS and EIDR, the model on AC holds, with some small adaptations. The new purposed model on AC concerning knowledge on customs supervision models is presented below.

Figure 19 AC in a customs' domain

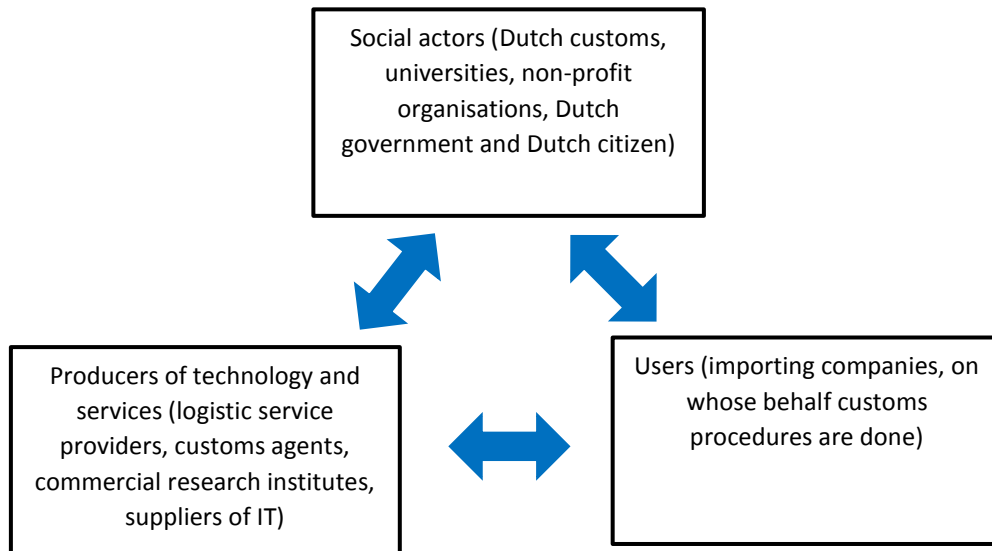


External knowledge seems to be part of network participation and influences in that way the learning relations. As said participation in networks seems to influence the learning relations, in the sense that the network gives the company the opportunity to participate in a project, which allows the company to learn by this participating, which stimulates the recognition of external useful knowledge. The network influences this recognition directly as well. This is in line with Owen-Smit and Powell (2004: 14), Koch and Strottmann (2008:520), Zucker, Darby and Armstrong (2002:138) and Fabrizio (2009: 265), who all also indicated the strong influence of networks and knowledge institutes. As networks seems to play such an important role in the absorption of new supervision models, the definition of networks has been explored a bit more. According to Pekkarinen and

<sup>12</sup> Douane Bedrijfsleven Overleg, Customs Company Meetings

Harmaakorpi (2006: 402) innovative network are not homogenous, but consists of representatives of companies, universities, technology centres and development organisations. If companies can interact in this network, this will be decisive for innovation. In line with Pekkarinen and Harmaakorpi (2006: 406) an innovative network in the Dutch customs' domain would look like the figure below.

*Figure 20 Innovative network in the customs' domain*



Companies will not share their valuable knowledge with their competitors, therefore social actors play a role in spreading knowledge, and all innovations are driven by users (demands and wishes from clients and whether or not a business case can be identified). The Dutch situation therefore seems to reflect a successful innovative network.

Other adaptations from the original model on AC in this new proposed model (figure 19) are:

- The knowledge output seems not to influence the strategy (this relation has been left away).
- Organisational structures influences the assimilation and application, whereas the recognition is influenced by all the other objects.
- AEO, EIDR and Extension of the ENS are no entirely new fields for three of the cases. Adaption of these ideas all have improved current processes. All four companies are more or less an ordinary line-staff organisation and have a rather formal way to translate and implement the changes via the organisational structures. This is also in line with Prajogo and McDermott (2014: 530), who also said that exploitative innovation can best be adapted formally.
- Added, in comparison with figure 5 and in line with figure 4, is the commercial outcome. New services will be developed due to this new knowledge by one company (the one which had hardly any customs knowledge before). Precondition of this however seems to be that the knowledge is from a **new** knowledge **domain**. New knowledge from a well-known knowledge domain mainly seems to improve current processes and procedures. So new knowledge from a new knowledge domain increases the relation between AC and the commercial output. New knowledge from a well-known knowledge domain seems to have a negative effect.

## Chapter 6 Contribution for research and practise

### 6.1 Contribution for research

This research has tried to explain Absorptive Capacity in a non-R&D environment. Does the model on AC also hold in an environment in which companies are dealing with the international flow of goods, where profit margins are small and customs law plays a part? The case studies have given no reason to fully reject the original model developed by Lane, Koka and Pathak (2006). For the larger part it can be assumed that this model also explains how Dutch companies involved in the international flow of goods has been en will be absorbing knowledge on supervision models customs law.

However small changes have been made.

1. It looks like network and participation in projects play a crucial role in this domain in order to recognise useful external knowledge. Without the network, very likely innovative concepts like AEO, EIDR and Extension of the ENS would not have been picked up. This is only logical as these innovative **supervision** concepts are developed externally by either customs organisations, knowledge institutes or even the European Commission. These organisations set the implementation of customs law and all companies simply have to follow (to put it bluntly). These new innovative concepts will hardly be developed by the companies itself (which are the ones which are going to be supervised). Supervising organisations themselves must decide how they will supervise. So naturally companies need the network to be informed about the new ideas of governments and supervising organisations. Next to this, as said, companies in this branch are not likely to share their valuable knowledge with their competitors. So neutral organisations, like the customs organisations and knowledge institutes, play a dominant role in expanding knowledge. The A “successful” innovative network in the customs domain is presented in figure 20.
2. It also shows the importance of truly incorporating the new ideas into the processes (e.g. via PDCA cycle or via the line managers) in order to use the new knowledge sustainably. If this does not happen enough, the concepts have not been “absorbed” enough and it looks like the company is not ready for further absorbing of new innovative supervision concepts. But maybe it is asked for a bit too much: to ask the ones being supervised to adjust so they can be better supervised. The advantages must be genuine enormous for a company to do this. Some companies, for whom these advantages haven proven to be real, have no problem in adapting to be better supervised.
3. The strategy seems not to be influenced by absorbing information about customs supervision. This might be related to either customs supervision models is too unimportant for a company to change a strategy or that this new knowledge is not really an eye-opener. It merely helps to improve what the company already did.
4. Last, in order to have also a commercial output from new external knowledge, it seems to be relevant that this knowledge comes from a new knowledge domain. Three companies were already active in the customs domain: declaring goods for all kinds of customs procedures for both own goods and on behalf of other companies. New knowledge on innovative supervising concepts merely improved their current processes. One company was relatively new in the customs domain. For them learning about customs law and procedures was an eye-opener and it will help them to develop new services for their clients in the future.

The model was adjusted according to this study and presented in figure 19.

## 6.2 Contribution for practise

The logistic domain is a, as said before, tough domain. Competition is fierce, profit margins are small. Many boxes, pallets, containers and declarations have to be moved/ made in order to make some money. There is no room for uncertain investments or adventures. However in case the business case proofs to be positive, all companies clearly indicated new ideas are embraced. Experts on both EIDR and Extension of the ENS indicated that in order to implement these two concepts, hardly any investment in IT is needed and hardly any new knowledge is needed, processes will only slightly change. So if this is true, the needed investment by companies in the new innovative concepts seems not to be an obstacle for absorbing new supervision concepts.

All four companies have well trained staff, have invested and keep on investing in training of staff (the latter possibly due to the new demands of AEO as listed in art. 39 UCC). According to Murovec and Prodan (2009: 870) this is essential to recognise useful external knowledge which is needed to satisfy customer's demands and wishes. So most companies already have employed staff which is capable to absorb knowledge on new supervision models.

Castka and Corbett (2013) made an overview of many researches on management standards like ISO 9000. They have found several conclusions which presumably would also apply for AEO, as AEO is like ISO 9000 a quality system. Management standards have a positive effect on performance (p. 338), whereby an implementation which truly incorporates the ideas behind the standard improves the performance (p.339). All four companies have implemented AEO and are varying from modest enthusiastic to very enthusiastic about it. As it had made the companies more aware of their own processes and more in control of their own processes. The chance they will have an open eye for new developments in the customs domain is therefore high, as is suggested in the self-enforcing cycle in figure 3. Castka and Corbett further suggest that companies involved in international trade surrounded by certified companies, are likely to feel pressure to implement the standards as well (p.339). Especially when "dominating" companies have this standard, they could move others to this standard as well (p.347). As stated before, at the end of 2016 around 1500 Dutch companies have the AEO certificate. Mostly logistic service providers, customs agents and big international companies are among these, so companies for whom international trade is core business and a secure trade lane is essential. Thirdly Castka and Corbett argued that in order to have the standard truly been incorporate by the company, the standards needs to be translated into the specific needs and peculiarities of the company, which differs between all companies. So uniform standards do not exist (p.341), as standards also bears the possibility that the ideas of the systems are wrongly interpreted and wrongly translated to the companies processes (p. 351). Truly incorporation of the standard means that the company also has a kind of PDCA cycle, this improves performance and prepares the company for future developments/ standards (p.348). This has been confirmed by the case studies. Two companies yearly go through an internal audit and take the outcome of this audit very seriously and translate it into internal improvement projects. These two companies seems to have absorbed the knowledge on AEO well and were well prepared for the field assessment. The last remark of Castka and Corbett is that practically every company starting a certification project, will end with a certificate (p.353). This is due to the commercial interest of companies granting the certificates. However also several KLaCo's have indicated that every company having an AEO certificate now, will in the end be re-assessed and be granted with an AEO licence. It might take time, but in the end all companies have "passed" the re-assessment. Main conclusion from the study of Castka and Corbett for this specific domain is that all companies already having an AEO certificate are likely to absorb new knowledge on innovative supervision models as well.

The above presented three conditions indicate why companies already involved in the customs domain are very likely to absorb new external knowledge on customs supervision models if they are facing this new knowledge.

Already in 2014 a research team, under auspices of VLM, Connekt and Top Sector of the Netherlands, wrote a white paper "Trade Compliance: the basis for a trusted supply chain". Already then it was argued that both governmental and logistic organisations need ... "to be informed and advised of the importance, risks and benefits of investing in Trade Compliance and trusted supply chains..... training and education are needed to take Trade Compliance to the next step" (Network Trade Compliance, 2014, p. 3-4). Most learning happens internally, both at companies and at customs. External relations, networks, however seems to play an important role in absorbing external knowledge.

This thesis has confirmed the determining role of network, especially the neutral organisations in the network, to accelerate the recognition of new ideas. Branch organisations, DBO, newsletters by customs, national customs congress, seminars, etc. can be used to spread the new ideas. Especially for companies already working in the customs domain, which have their eye upon every new development within the UCC (in which still much is unclear), new ideas and innovations will reach them.

In case the business case proves to be positive (and there is no reason to believe this will not be the case), the innovative concepts will be absorbed. The latter is obviously extremely important. Businesses are no supervising institutes. It is not in their interest to control themselves. Their interest is to make money as has already been discussed by Goldratt in 1986 in "the Goal" (p.38). Only if the supervising concepts truly prove to be more efficient for current business' processes (or more effective or make processes more reliable), companies will be interested. That business case must be a "clear cut case", as companies have been sceptical about the promised advantages of AEO and might therefore also be sceptical about other new innovative supervision models (see for example the annual report of Fenex 2008, p.3, and 2009, p.6 for this sceptics). Customs organisations should keep this in mind, for it is conflicting with the trend of delegating more and more customs' tasks to companies. AEO, REX and self-assessment are examples which involve tasks, which originally belongs to customs, but now given to companies. So there are two angles to look at this issue:

- From a company's point of view: if a supervision task is "taken over" from customs, does that improve the processes, or does that increase the profit? This is related to the business case for companies. Why should companies want to take over supervision tasks of customs?
- From the customs' point of view: how must customs assure that these trustworthy companies remain compliant (if they are less supervised)? The early days of GPA have shown that trustworthy companies do make mistakes and their declarations have turned out to contain many mistakes. Furthermore do horizontal supervision and system based auditing really decrease time needed by customs?

So for all these new supervision models tangible advantages for both companies and customs must be clear.

## Chapter 7 Conclusions and recommendations

### 7.1 Conclusions

When AEO was introduced in 2007, it took quite some time, before the concept was embraced by companies and companies started to implement necessary control measures in order to acquire the AEO certificate. Now with the introduction of the UCC, companies will face many changes again. New supervision models are developed by customs and knowledge institutes in line with UCC. If Dutch companies want to keep their competition position within global trade, this new developed external knowledge better be taken up by companies as quick as possible. Therefore this master thesis has explored the theory of Absorptive Capacity (AC). The theory on Absorptive Capacity was first introduced in 1990 by Cohen and Levinthal and later adjusted, fine-tuned, by Lane, Koka and Pathak in 2006. Absorptive Capacity consists of three sequential steps:

1. recognition of useful external knowledge;
2. assimilate this knowledge to the needs of the company; and
3. apply this knowledge successfully.

This master thesis has researched whether or not the *models on Absorptive Capacity (AC) explain how the absorption of innovative supervision concepts like AEO, EIDR and extension of the ENS by Dutch companies take place?* This has been the main question, as formulated in chapter 2, of this thesis. In order to do this two sub questions have been formulated:

1. Do models on AC need to be adjusted to the specific context of innovative supervision concepts like AEO, EIDR and Extension of the ENS?
2. How can SME companies best be motivated to absorb new knowledge on innovative supervision concepts like AEO, EIDR and Extension of the ENS?

The cases used in this study has given no reason to totally reject the model on AC developed by Lane, Koka and Pathak. For the larger part this model (which was presented in figure 4), does explain how companies have absorbed new external knowledge on AEO, EIDR and Extension of the ENS. Some changes have been made to meet the specific circumstances of companies working in the international trade of goods: highly competitive market with small profit margins, companies do not want to share valuable knowledge with competitors, and the new knowledge on AEO, EIDR and Extension of the ENS has a legal background and companies are sometimes forced to work accordingly (by having this knowledge companies can function as they do/ perform the services they offer).

In paragraph 5.4.5 in figure 19 the adapted model has been presented. Its fundament is the original model from Lane, Koka and Pathak, and the adaptations are justified by the case studies. This model explains how Dutch companies adapt knowledge on new supervising models like AEO, EIDR and Extension of the ENS. There is no reason to believe that the model could not be used to explain how companies would absorb other knowledge on other customs supervision models as well, as these new innovative supervision models also have a legal background. The adaptations are:

- Indication of the importance of the network. The environment for all involved cases is the same. Still differences exist between the cases in how external knowledge is absorbed. The network seems to explain these differences. As the environment does not explain why companies have different networks, the network is added as a new object, which influences the learning relation and the recognition of new external knowledge. Already in chapter 3



Lane and Lubatkin (1998) were quoted on inter-organisational learning. Learning between organisations is improved when (among others) the two share a common knowledge basis and shared research communities are established. Also this study highlighted the importance of networks. Probably the Dutch world of customs is not so big. Especially in a region, employees within companies working in the customs domain and customs officers know each other and on higher management levels, the network is more national oriented. And all within this network share a common knowledge basis (as confirmed by the interviewees). But as said, companies do not want to share their valuable knowledge (it might give them an advantage over their competitors). So obviously some partners in this network do share their knowledge with others (otherwise a company can't learn from the network). So the network plays a double role: it is used to recognise interesting new ideas, but people will always also give something back to the network. Others will learn from you. It is a bidirectional way. Probably the shared research communities, knowledge institutes, and customs organisations fill this gap. They act as neutral organisations which acquire knowledge from the network and share this again in a generalised form with the entire network. This is in line with the theory on successful innovative networks. The Dutch seems to work accordingly (see figure 20).

- Indication of the importance of the business case. Truly advantages for the company in terms of efficiency, effectivity and or reliability. This is important otherwise necessary internal changes in the company will not be made and the new external knowledge not truly be incorporate by the company. Using this knowledge is then only dressing up for the outside world. This has been the case with the absorbing of the AEO concepts at two of the cases. This is related to the core business of the company: making money now and in the future.
- The strategy does not change due to this new knowledge, so no relation between the outcome of the model and the strategy.
- In order to develop new products/ services or explore new markets, the knowledge must come from a new knowledge domain. All theory on Absorptive Capacity speak of existing knowledge in a company. A company needs to have knowledge on customs affairs in order to recognise useful external knowledge on customs<sup>13</sup>. This new knowledge then helps the company to improve what they were already doing (better processes, better products/ services). If a company comes across something entirely new (via their network), they really might come with something innovative (new products/ services or explore new markets).

Absorbing knowledge on new supervision models might be different than absorbing other new external knowledge. As argued before the first interest of companies is to make money now and in the future. That might be the reason that a company like Royal Shell is now investing in green energy, as that might their future product with which they can earn money. Absorbing knowledge on supervision models will be done as most companies simply want to act compliantly and for logistic service providers and customs agents this knowledge allows them to perform (complicated) customs procedures on behalf of others. This knowledge and designing processes accordingly allows the company to act as they do now. Therefore the specific nature of knowledge on supervision models is essential for companies as they do not want to face penalties, criminal prosecution or their licences taken away. The consortium therefore need not to worry that this new knowledge on supervision models will not be picked up by companies.

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<sup>13</sup> Or need to have knowledge on any subject to recognise useful new knowledge on that subject.

So SME companies can best be motivated to work with the new to be developed models on supervision, by spreading the new ideas into the networks (national customs congress, DBO, newsletters, branch organisations), by exploring new idea by neutral organisations like universities or branch organisations and by highlighting **tangible** profits.

## 7.2 Recommendations

This study involved two main cases (one company thinking about working with EIDR and one company working with the Extension of the ENS) and two helping cases (the companies at which the model was firstly tested). These cases gave reasons to adjust the original model developed by Lane, Koka and Pathak (as presented in figure 4) into a model that explain how Dutch companies involved in the international flow of goods absorb new external knowledge on customs supervision models (as presented in figure 19). However these four companies do not represent the entire population of Dutch companies involved in international trade. Therefore this proposed model should also be tested using a survey (Forza, 2002, p. 152) and using a representative sample of Dutch companies. Only then it is proven if the new model always explains the how and AC in this specific context. Most ideal would be to test it three times: one group with companies purely involved in EIDR and one group involved in Extension of the ENS and one group with only a AEO certificate<sup>14</sup> to indicate for certain whether or not differences exist between absorbing EIDR, Extension of the ENS and AEO. Although this testing is useful (to be double sure), it could be limited to test only the new adaptations to the model, as presented in figure 19. All the other relations have been tested in previous studies and this case study gives no reason to believe the original model, as presented in figure 4, does not hold for the larger part in this specific situation. But the role of the network, whether or not really no relation exists between outcome and strategy and the existing knowledge domain, which are new in figure 19, should be tested using a survey.

The other important element of truly assimilating and applying new ideas is to incorporate the changes into processes and to evaluate and improve regularly via a PDCA cycle. Apparently not all companies go through these cycles regularly or as seriously as they should. The question is then how companies can be triggered to take this PCDA cycle more serious? Is it simply a matter of costs – expected benefits as this thesis pointed out? Or is more at stake why companies don't do this. This should be explored further in order to advise how the last step of AC can be improved: the truly application of the new ideas.

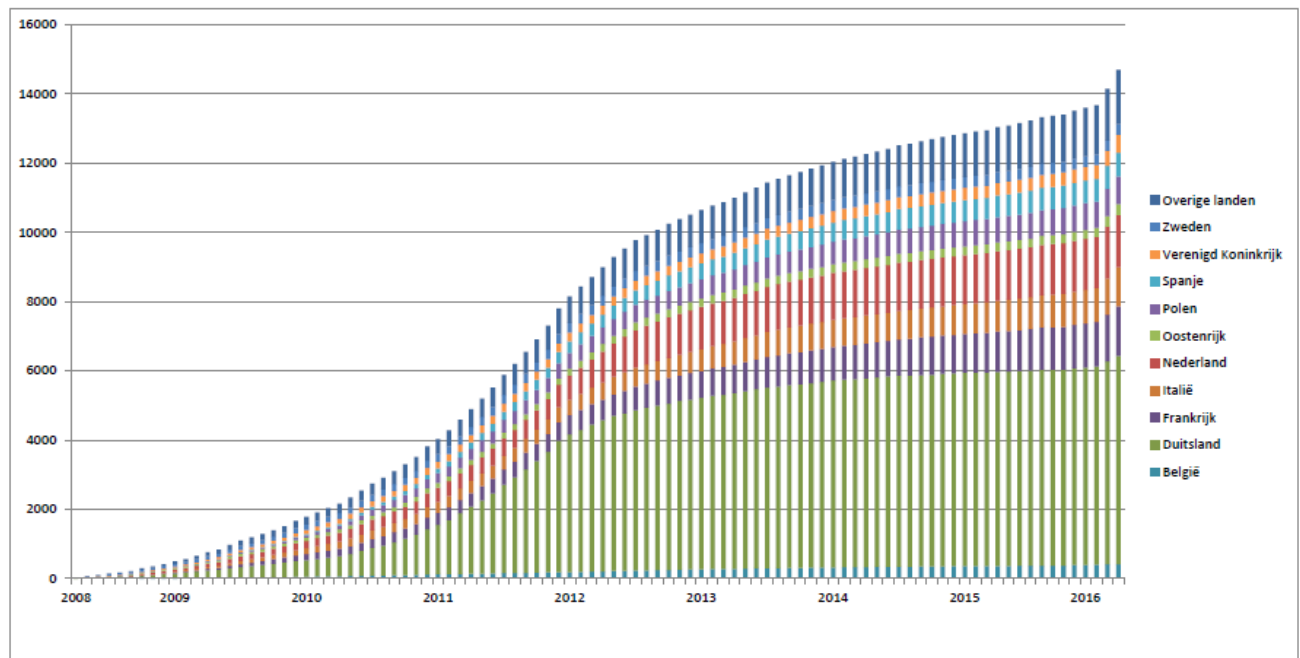
Also unknown is whether this study can be used to explain the AC in other countries. This study has been focussed on Dutch companies active in the international trade. The question is then whether or not it is likely for foreign companies involved in the international trade the suggested model holds. Typical about the Dutch situation is the “polder consultation model”. Dutch people seek cooperation with each other. Dutch companies and Dutch customs very naturally cooperate together. It goes without questioning. It might be part of Dutch culture (although this has not been investigated). The outcome if this thesis is that the network, which is organised around this specific way of Dutch cooperation, plays an important role. The network stimulates the informing of companies of new interesting and useful developments on these supervision models. Dutch customs, for example, go out en tell companies about these new supervision models. There is no reason to believe that networks would not play an important role abroad in spreading new ideas and knowledge. These networks will function differently than the Dutch. This is in line with Pekkarinen and Harmaakorpi (2006: 402), who states that the specific regional cooperation within networks, create differences between networks. So maybe abroad there is less involvement of national customs organisations in networks, but more with universities or branch organisations or more cooperation between

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<sup>14</sup> Which by that time will be a licence.

competitors. It might be interesting to investigate which kind of network and network cooperation has the best result on AC. In other words, does the Dutch way of sharing information by neutral organisations lead to a better absorption of new innovative supervision models than abroad? In the figure below an overview is given of the number of AEO companies in different EU member states.

Figure 21 Overview amount of AEO companies in EU member states



Source: [www.ktl-nederland.eu](http://www.ktl-nederland.eu)

The Netherlands are second, after Germany, in numbers of AEO companies. Although France, the UK and Italy are much bigger economies and more companies are established there, more Dutch companies have an AEO status. Is that due to the better cooperation in the network and therefore better absorption of new supervision models by Dutch companies? Sweden also has relatively much AEO companies. Sweden is also known for its non-conflict seeking and cooperation. That gives reason to believe the Dutch model does improve AC on supervision models. But why then does Germany also have such a large number of AEO companies? The Germans are not that known for their cooperation between customs and companies. Are the Dutch numbers then simply to be explained by the huge number of logistic service providers in the Netherlands? However this does not explain the huge number of Swedish AEO companies. So a research on network cooperation, inter-organisational learning in several countries in the EU (e.g. Sweden, Germany, the Netherlands, the UK and France) could be very interesting.

Figure 20 presents the Dutch customs' network, which seems to be an innovative network. This study however did not investigate extensively whether this model holds or not in this specific domain. Further investigation is needed to confirm this model. Is this model complete? Are all the social actors, producers of technology and services and users listed? How do they cooperate? How to measure successful innovative networks? Is the fact that companies are reluctant to share valuable knowledge very bad for the innovativeness of the network?

Currently more and more customs tasks are delegated to companies. The question is whether this is desirable. Do concepts like horizontal supervision and system based auditing really reduces the

needed customs' capacity, so do they really reduce customs' workload? And are safety, security and fiscal integrity guaranteed or even improved? Can we trust companies to do their own supervising? In Dutch we have a saying about butchers inspecting their own meat. This is not desirable. Why should then companies involved in international trade inspect themselves more and more? These thoughts go against the mainstream: it might take courage to investigate this.

### **7.3 Last remarks**

As said the original model on Absorptive Capacity as presented by Lane, Koka and Pathak (2006) holds for the largest part in this specific situation. Small changes have been made to the original model as presented in figure 19. This proposed model explains how Dutch companies involved in international trade absorb new external knowledge on innovative supervision models within the customs domain. Extremely important in this case seems to be:

- Role of the network.
- Clear cut business case for truly incorporating the ideas into processes.
- Whether or not the knowledge domain is new in order to have a commercial output.

This study also indicates there is still much to learn about Absorptive Capacity in this customs domain.

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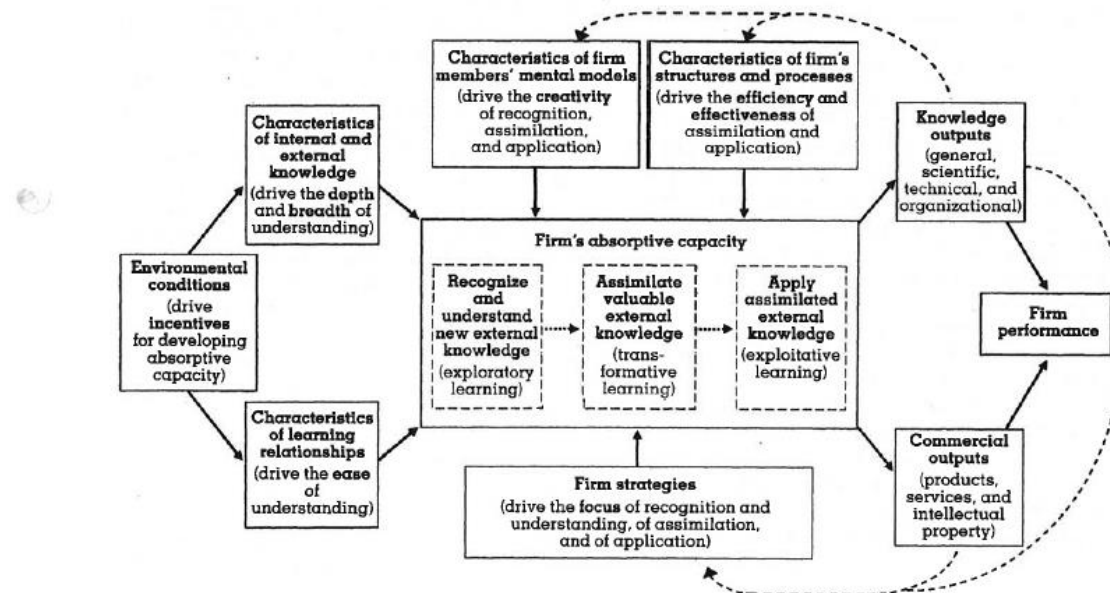
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## Appendix I Model on AC

Framework below has not been tested in a non-R&D environment and is derived from Lane, Koka and Pathak (2006: 856)



Environmental condition:

1. Describe market conditions/ competitions/ demands from clients customs related. Stable or dynamic/ uncertain/ hostile? Does clients/ social network forces the company into a direction?
2. Describe the legal forces that stimulate AC customs related/ is legislation considered to be relevant.
3. List all access to knowledge centers the company has contact with, representative organisations; amount of seminar visits/ network meetings. All customs/ UCC related.
4. List the networks the company is involved in.
5. Describe the learning within network (common basic knowledge, doing something for the other company is compensated, shared research communities are established/ dominant player who determines or not).
6. Describe the cooperation with suppliers/ service providers on UCC.

Source: Van den Bosch, Volberda and De Boer, 1999: 553, Lane, Koka and Pathak, 2006: 857, Murovec and Prodan, 2009: 870, Vinding 2006: 510, Lane and Lubatkin, 1998:470, Zucker, Darby and Armstrong, 2002: 138, Fabrizio, 2009: 265, Owen-Smit and Powell, 2004: 14, Koch and Strottmann, 2008: 520, Kitching and Smallbone, 2010: 21, Prajogo and McDermott, 2014: 530, Martínez-Sánchez, Vela-Jiménez, Pérez-Pérez and De-Luis-Carnicer, 2009: 553

Characteristics of internal and external knowledge:

7. What do you know? How divers is this? Experience? Customs/ UCC related
8. How well do you know it?
9. How similar is this to your learning partner? Who is your learning partner?
10. Have you lately learned something completely new? New field of knowledge?

Source: Zahra and George, 2002: 193, Todora and Durisin, 2007: 774 and lane, Koka and Pathak, 2006: 857

Characteristics of learning relationships:



## 11. How easy is it to learn from this partner? Time/ effort/ money

Source: Lane, Koka and Pathak, 2006: 857

## Characteristics of firm members' mental models:

- 12. What is the educational level of employees working with UCC?
- 13. Which percentage of work force is customs related?
- 14. What is the attitude towards changes from outside/ new external knowledge?
- 15. How divers are the teams "customs" employees work in? Logistic? IT? UCC?

Source: Vinding, 2006: 507, Lane, Koka and Pathak, 2006:857, Cohen/ Levinthal, 1990: 136, Claus, 2013: 67, Murovec and Prodan, 2009: 870, Petts, Herd and O'hEocha, 1998: 728

## Characteristics of firm's structures and processes:

- 16. Describe how employees work together (across departments/ matrix organisations/ project/ within departments/ training, job rotation, natural liaison devices and participation/ formally).
  - 17. Describe how employees communicate and cooperate (horizontally/ vertically, formal informal).
  - 18. Describe how new knowledge is shared within the company.
  - 19. Describe the firm's policy towards changes/ give examples.
  - 20. Describe how employees are rewarded for taking up new challenges.
  - 21. Describe the system combinative capabilities
  - 22. Describe the IT skills of employees/ use of IT is case of connecting tasks.
  - 23. Does the company have a centralized research department?
  - 24. Does the company uses much (temporary) employees/ outsource customs related activities?
- Source: Lane, Koka and Pathak, 2006: 857, Van den Bosch, Volberda and De Boer, 1999: 553, Vinding, 2006: 510, Bolívar-Ramos, García-Morales and Martín-Rojas, 2013: 912, Lane and Lubatkin, 1998:470, Prajogo and McDermott, 2014: 530, Martínez-Sánchez, Vela-Jiménez, Pérez-Pérez and De-Luis-Carnicer, 2009: 553

## Firm's strategy:

- 25. Describe the management involvement attitude/ strategy/ action towards new developments customs/ UCC related?
- 26. How much is yearly invested in new developments customs/ UCC related?
- 27. How much is yearly invested in training of staff and active human resource management?
- 28. Are well educated staff (more paid) employed?
- 29. How many employees are involved in new developments customs/ UCC related?
- 30. Are decision made centrally/ decentrally?

Source: Cohen and Levinthal, 1990: 132 and 135, Lane, Koka and Pathak, 2006: 836 and 857, Fabrizio, 2009: 255, Murovec and Prodan, 2009: 870, Clausen, 2013: 67, Prajogo and McDermott, 2014: 530, Nieves, 2016: 126

## AC

## Recognize and understand new knowledge/ Explorative learning:

- 31. Describe the scope of the new knowledge (does it cover several areas of knowledge? UCC/ IT/ logistic).
- 32. Describe the flexibility of the AC (are several knowledge sources available and used/ is existing knowledge reused?)

## Assimilate valuable/ external knowledge/ transformative learning:

- 33. Describe how the new knowledge is adapted to the firm
- 34. Describe how the new knowledge is combined with the existing knowledge
- 35. Describe how the new knowledge is related to own individual knowledge

36. Describe how the new knowledge is shared/ transferred across the firm

Apply assimilated external knowledge/ exploitative learning:

37. How much effort/ investment/ yearly costs are involved?

38. How much can be saved yearly?

39. New markets/ clients/ new revenue?

Source: Lane, Koka and Pathan, 2006: 858, Bosch, Volberda and De Boer, 1999: 552

Knowledge output:

40. Describe what changed internally due to this new knowledge (general/ IT/ processes/ Organisational)

41. Describe whether or not this changed the characteristics of the member's mental models./ attitude towards EIDR/ extension ENS

42. Describe whether or not this changed the characteristics of the firm's structures and processes.

43. Describe whether or not this changed the firm's strategy.

Commercial output:

44. Describe the new product/ services that derived from this new knowledge.

45. Describe whether or not this changed the firm's strategy.

Firm performance:

46. Describe if and how this new knowledge improved the firm's performance.

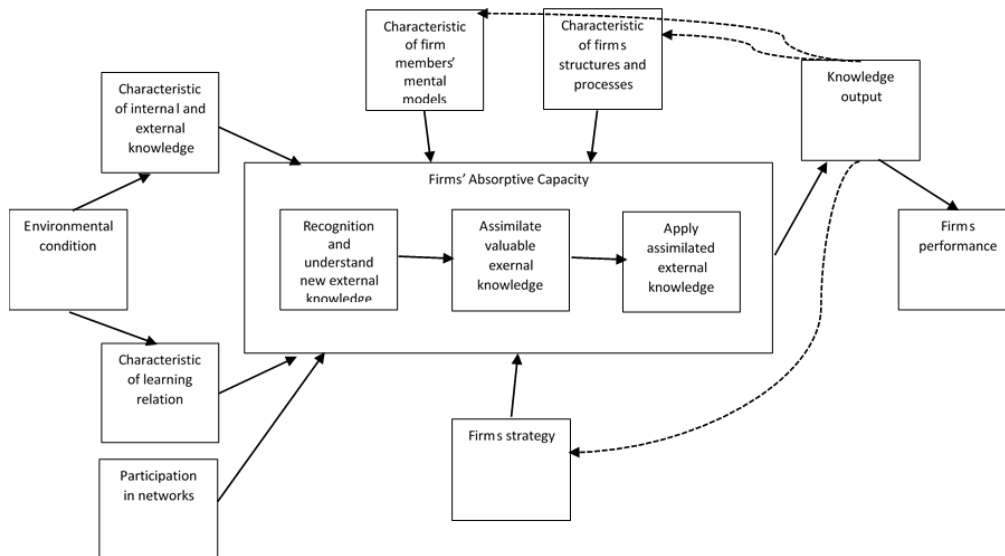
Source: Lane, Koka and Pathak, 2006: 857

AC development:

47. Did having an AEO certificate prepare you well on the field assessment?

## Appendix II Adapted model on AC

The suggested framework after testing it in a logistic environment (non R&D).



Environmental condition:

1. Describe market conditions/ competitions/ demands from clients.
2. Describe the legal forces that stimulated implementing AEO and implementing EIDR/ extension ENS

Participation in networks:

3. List all networks, access to knowledge centres the company has contact with, representative organisations; amount of seminar visits/ network meetings. All customs/ UCC related.

Characteristics of internal and external knowledge:

4. What did you learn from implementing AEO? Examples
5. How would you describe your knowledge field EIDR/ Extension of ENS related?
6. How well do you know it?
7. Who is your learning partner AEO and EIDR/ extension of ENS related? How similar is your knowledge field compared to that of your learning partner?

Characteristics of learning relationships:

8. Which role does your network play in learning about AEO and EIDR/ extension of ENS.
9. How easy is it to learn from this network/ partner?
10. How do you learn something new? How much time/ effort is spend on learning something new?
11. Who within the company decides to learn something new/ about EIDR/ extension of the ENS from an external partner? This decision is based upon what?

Characteristics of firm members' mental models:

12. What is the educational level of employees working with custom related processes?
13. Which percentage of work force is customs related?
14. What is the attitude towards changes from outside/ new external knowledge about EIDR/ extension of ENS related?
15. How divers are the teams "customs" employees work in? Logistic? IT? UCC?

## 16. Did implementing AEO changed any of the above? Examples

### Characteristics of firm's structures and processes:

17. Describe how the organisation is organised.
18. Describe how employees work together internally and externally.
19. Describe how employees communicate internally and externally.
20. Describe how employees are rewarded for taking up new challenges.
21. Does the company uses much (temporary) employees/ outsource customs related activities?
22. Did implementing AEO changed any of the above? Example

### Firm's strategy:

23. Describe the management involvement attitude/ strategy/ action towards the implementing of AEO and EIDR/ extension of ENS?
24. How much is yearly invested in keeping the AEO standards?
25. Did implementing AEO changed any of the above? Example

### AC

#### Recognize and understand new knowledge/ Explorative learning:

26. Have you lately learned about EIDR/ extension ENS? Is this a new field of knowledge?
27. How does the fact that you have AEO influenced the appreciation of EIDR/ extension of ENS?
28. From whom did you learned about EIDR/ extension ENS? Which sources were used to learn?

#### Assimilate valuable/ external knowledge/ transformative learning:

29. How did you/ are you going to assimilate your knowledge about EIDR/ extension ENS to your company?
30. Describe how new knowledge about EIDR/ extension ENS was shared/ is going to be shared within the company.
31. Describe how the new knowledge was/ is going to be combined with the existing knowledge.
32. Did your AEO status influenced this/ do you expect that your AEO status will influence this?

#### Apply assimilated external knowledge/ exploitative learning:

33. Are you going to work with EIDR/ extension ENS?
34. How many employees are involved with working with EIDR/ extension of ENS? How much do you expect to invest in implementing EIDR/ extension ENS?

### Knowledge output:

35. Describe what changed internally (or is expected to change) due to implementing new ideas about EIDR/ extension ENS (organisation, IT, processes, attitude employees, strategy)

### Firm performance:

36. Describe if and how this implementing of EIDR/ extension of ENS improved the firm's performance (or is expected to improve).

## Appendix III Overview of all labels derived from interviews

In the table below all answers given by the interviewees have been listed, but strongly reduced to keywords which describe the attribute. Behind each keyword the interviewees have been listed who said this (R1 stands for respondent 1, and so on). Due to time, not all questions have been answered by all interviewees. R1, R2 and R3 represent a company considering to implement EIDR. R4, R5 and R6 represent a company which has implemented a way of Extension of the ENS. R7, R8 and R9 represent three account managers of customs (KlaCo).

Environment	<ol style="list-style-type: none"> <li>1. Highly competitive market (R1, R3)</li> <li>2. Competition on service and quality (R1, R2, R3, R4, R5, R6)</li> <li>3. Reducing costs is always important (R1, R3, R5)</li> <li>4. Low competition (R4, R5)</li> <li>5. Market forces determine implementing AEO/ other customs related processes (R1, R2, R3, R4, R5)</li> <li>6. Implementing AEO allows current operations (R2, R3, R4)</li> <li>7. Legislation determines how (some) processes are organised (R3)</li> <li>8. Introduction of UCC has led to more strict customs operations (R7, R8, R9)</li> </ol>
Networks	<ol style="list-style-type: none"> <li>1. (old) colleagues and study mates (R1, R2, R3)</li> <li>2. Meetings organised by branch organisations (R2, R3, R4, R5, R6)</li> <li>3. Universities/ knowledge institutes (R2, R3, R4, R5)</li> <li>4. National and international companies (R4)</li> <li>5. Participating in projects (R5)</li> <li>6. Customs and other supervising organisations (R2, R3, R5, R6)</li> </ol>
Internal and external knowledge	<ol style="list-style-type: none"> <li>1. Low knowledge on EIDR/ ENS (R1, R2, R3, R6)</li> <li>2. Hardly any time spend on subject (R1, R2, R3, R6)</li> <li>3. Much time spend on learning (R5)</li> <li>4. High knowledge on concept level of optional filing/ Extension of the ENS (R4, R5)</li> <li>5. Klaco's are generalists with possibility to ask specialist colleagues (R7, R8, R9)</li> </ol>
Learning relations	<ol style="list-style-type: none"> <li>1. No active sharing of new information internally (R1, R2)</li> <li>2. Difficult to learn from network (R1, R2)</li> <li>3. Easy to learn from network (pick up interesting new developments) (R4)</li> <li>4. Network is needed to learn (R2, R3, R4, R5)</li> <li>5. Learning from internal colleagues (R1, R2, R3, R5, R6, R7, R8, R9)</li> <li>6. Learning from google/ site customs (handboek douane)/ professional journals (R1, R2, R3, R5)</li> <li>7. Learning from old colleagues/ study mates (R1, R2)</li> <li>8. Learning from branch organisation's meetings, including account manager customs (R2, R3, R4, R5)</li> <li>9. Learning by participating with project (R4, R5, R6)</li> <li>10. Learning by a study (R1, R2, R3, R5, R7)</li> <li>11. Existence of gatekeeper (R2, R3, R4, R5)</li> <li>12. Operational tasks/ questions clients/ change in law determine what to learn (R1, R2)</li> </ol>

	<ul style="list-style-type: none"> <li>13. Business case approved by MT determines what to learn &amp; change (R3, R4, R5, R6)</li> <li>14. Klaco's do neither inform companies individually, nor expend knowledge (R7, R8, R9).</li> <li>15. It is the company's own responsibility to inform themselves about relevant topics (R7, R8, R9)</li> <li>16. Customs have national inform sessions (website, letters, roadshows) and regional inform sessions (R7, R8, R9)</li> </ul>
Firm's mental models	<ul style="list-style-type: none"> <li>1. All operational employees at least MBO, staff and MT HBO/ WO (R1, R2, R3, R4, R5, R6, R7, R8, R9)</li> <li>2. Little customs knowledge (R4, R5)</li> <li>3. Much customs knowledge (R1, R2)</li> <li>4. Company has pro active attitude (R1, R4)</li> <li>5. Open attitude to help colleagues (R1, R2, R3)</li> <li>6. Critical attitude in what to change/ learn (R2, R3, R5)</li> <li>7. If law demands a certain change, the company follows (R3)</li> <li>8. Klaco's are willing to help companies, but may not advice (R7, R8, R9)</li> <li>9. First task of customs is to supervise (R6, R7, R8, R9)</li> <li>10. First task of KlaCo is to act as a point of mutual interest (R7, R8, R9)</li> <li>11. Many companies will not pass the re-assessment (R7, R8)</li> <li>12. Learning from implementing AEO (focus on entire company, monitoring and registering, security, truly embedding procedures, appreciating importance customs, obligation to have certain knowledge/ experience) (R1, R2, R3, R4, R5)</li> </ul>
Firm's structures	<ul style="list-style-type: none"> <li>1. Line- staff organisation with temporary project teams (R1, R2, R3, R5)</li> <li>2. Work is organised in departments, which need not to cooperate with other departments, no exchange of ideas/ knowledge, with linkin-pins between departments (R1, R2, R3)</li> <li>3. Strict processes captured in IT structures (R1, R2, R3)</li> <li>4. Company is organised to deal with huge quantities/ productivity (R2, R3)</li> <li>5. Management was involved in implementing AEO (R2, R3)</li> <li>6. Very limited customs related processes in entire company (R1, R2, R3, R4, R5)</li> <li>7. 20% of all activities are customs related (R6)</li> <li>8. All customs activities are limited to one department/ person (R1, R2, R3, R4, R5)</li> <li>9. Fix contract for nearly all customs related work (R1, R2, R3)</li> <li>10. AEO changed processes (more focus on security, registering, more efficient) (R1, R2, R3, R4, R5)</li> <li>11. AEO changed little processes (limited customs processes) (R5)</li> <li>12. AEO improved internal audits, company had no trouble with field assessment (R2)</li> <li>13. AEO allows current processes (R3, R4)</li> </ul>
Firm's strategy	<ul style="list-style-type: none"> <li>1. Company invests much in security (R1, R2)</li> <li>2. Company invests in developing new concepts (R4, R5, R6)</li> </ul>

	<ol style="list-style-type: none"> <li>3. No need to invest extra in AEO, a good company would fulfil all the AEO demands anyway (R3)</li> <li>4. Implementing AEO is a strategic decision (R1, R2, R3, R4, R5)</li> <li>5. Implementing EIDR is a tactic decision (R2, R3)</li> <li>6. Having AEO eases implementing new customs concepts (R1, R4, R5)</li> </ol>
AC, recognition	<ol style="list-style-type: none"> <li>1. Optional filing/ Extension of ENS/ EIDR was/ is new (R1, R2, R3, R4, R5)</li> <li>2. EIDR/ Extension of ENS will not change/ has not changed much internal (R1, R2, R3, R5)</li> <li>3. Current processes triggers interest in new concepts (R1, R2, R4, R5)</li> <li>4. Network points out importance new concepts (R2, R4, R5)</li> <li>5. Study triggers recognizing import elements from UCC (R2, R5)</li> </ol>
AC, assimilate	<ol style="list-style-type: none"> <li>1. Asking/ telling/ training colleagues about EIDR/ extension ENS (R1, R2, R5)</li> <li>2. Management decides to change (IT) processes (R1, R2, R3)</li> <li>3. New ideas must be incorporated in processes/ products within line (R1, R2, R3, R4, R5)</li> <li>4. Difficult to translate external knowledge to company's situation (R3, R4, R5)</li> </ol>
AC, apply	<ol style="list-style-type: none"> <li>1. Implementing EIDR will require little investment (R1, R3)</li> <li>2. Trade-off between extra costs/ profit will determine if EIDR will be implemented (R2)</li> <li>3. Processes in warehouse (obligation to present) and IT will change when EIDR will be implemented (R1, R2, R3)</li> <li>4. Extension of ENS has been applied, new developments are anticipated on (R4, R5)</li> </ol>
Knowledge output	<ol style="list-style-type: none"> <li>1. Little changes to internal operational and IT processes (R1, R2, R3)</li> <li>2. Better prepared for other customs concepts (R4, R5)</li> </ol>
Firm performance	<ol style="list-style-type: none"> <li>1. Still unknown, if EIDR will reduce costs/ throughput time (R1, R3)</li> <li>2. EIDR will increase throughput time/ Extension of ENS only brought more work (R2, R5)</li> <li>3. Extension of ENS will in the end improve processes, it is a mean (not a goal) (R4, R5)</li> <li>4. Extension of the ENS is the first step to new developments (clearing in the sky) (R4, R5)</li> </ol>