Cash, Community and Coordination: the Triple C Categorisation of Technology Transfer Office organisational philosophy

Jasmine Meysman[1,*], Sven H. De Cleyn[1,2], Johan Braet[1]
[1]University of Antwerp, Antwerp, Belgium
[2]Imec, Leuven, Belgium
[*]Corresponding author: jasmine.meysman@uantwerpen.be

Abstract

Although Technology Transfer as a research topic has become more and more popular, the mission and vision statements of technology transfer offices (TTOs) and the impact they have on the technology transfer processes leading to the creation of spin-offs, is still unfamiliar terrain. As mission and vision are incorporated into the organisational philosophy of a TTO, this paper aims to find out what organisational philosophies currently exist in TTOs with respect to spin-off creation, and if they can be aggregated into categories. An empirical study was performed through a survey of 51 European TTOs, representing different academic disciplines and affiliations. The results shows that currently, three organisational philosophy categories exist within European TTOs: Cash, Community and Cooperation. Consequently, the degree to which the licensing negotiation strategies for the creation of spin-offs matched the categories that TTOs proclaimed to adhere to was studied. The results show that, besides mission and vision, also the risk averseness of TTOs plays a major role in the organisational philosophy.

Keywords: Technology Transfer; Technology Transfer Office; Triple C; Organisational philosophy; Spin-offs; Commercialisation; Valorisation; Mission; Vision
JEL: 031; 032; 033

1. Introduction

Historically, the third mission of universities and academic institutions entails economic development. Although this economic development is theoretically with regard to the region in which the academic institution or university is active, in reality it often means the generation of cash flow to make up for diminishing government subsidies. It is under the influence of said governments that in the past decades this third mission has been institutionalised within the universities (Lockett, Wright, & Wild, 2015; Pinheiro, Langa, & Pausits, 2015; Rossi, 2017). The management of this third mission of universities is usually assigned to a specialised entity called a technology transfer office (TTO) or Industrial Liaison Office (ILO) (Rasmussen, 2008). These entities are (amongst other things) responsible for the negotiations and coordination of the universities intellectual property (IP) (Rasmussen, 2008; Siegel, Veugelers, & Wright, 2007; Vinig & Lips, 2015) and the creation of spin-offs (Rossi, 2017). As the TTO or ILO has to act in the universities' interest, the maximisation of third mission revenues should be high on its agenda. However, a recent study by Lockett et. Al (2015), shows that the government discourse on technology transfer as the third mission of universities has changed in the last decade, affecting TTO performance. Where revenue generation through the commercialisation of IP used to be the government's prime goal of technology transfer in the nineties and the beginning of the new millennium, governments have adjusted views and expect more meaningful

and relevant contributions to society (i.e. knowledge transfer) (Lockett et al., 2015; Pinheiro et al., 2015) from universities.

These findings are corroborated by previous work by Meysman, De Cleyn and Braet (2017), showing that, from the perspective of the TTO, with the changing social climate and under pressure from European policies, missions and visions of TTOs, also called the organisational philosophy of the TTO (Wartnaby, 2014), are changing. This is also apparent in the recent switch from licensing strategies to spin-off creation (Bray & Lee, 2000; De Cleyn, Tietz, Braet, & Schefczyck, 2010), scientific consulting and contract research (Rossi, 2017). These changes in organisational philosophy could result in different technology transfer approaches and focusses, such as a diminished focus on the generation of third mission cash flow and an increased interest in societal or industrial impact.

Circling back to the government expectations, Lockett et al. (2015) also found that, following the changing discourse on the third mission, governments are struggling to put adequate metrics in place to evaluate the performance of TTOs, bringing the many stakeholders (with their own agendas) into the discussion. The change in discourse, from revenue creation to 'impact' creation, made metrics that only focussed on financial returns on IP insufficient, and a call for activity-based indicators was heard. These activity-based indicators, however, as they are now developed by the TTOs themselves, are highly subjective in nature, and therefore unreliable (Lockett et al., 2015). Our contribution to the solution of this problem, is the confirmation of existence and subsequent development of categories of TTO organisational philosophy. We can formulate this in the following research question: *What organisational philosophy drives TTO actions when it comes to the transfer of technology through spin-offs and can these philosophies be aggregated into categories?*

Our contribution to the solution of this problem, is the confirmation of existence and subsequent development of categories of TTO organisational philosophy. When TTO organisational philosophies are aggregated into categories, this would enable TTOs to easily formalise their organisational philosophies as they can proclaim to adhere to one of the predefined categories. Through this formalisation, stakeholders (both internal and external) would know what to expect from their TTO. This categorisation could also help the objectification of TTO performance metrics, as per type of organisational philosophy, a specific objectively quantifiable set of indicators can be determined.

In the following sections, we will conduct a literature review, where we elaborate on the current state-of-the art when it comes to mission and vision statements in TTOs. We will also address the differences between the concepts of 'commercialisation' and 'valorisation', as they can be important indicators for the TTO's chosen organisational philosophy and constitute the theoretical framework for this study. Further, we will elaborate on the goal, scope and methodology of this research project and present the results. Finally, we will end with the conclusions, implications and discussion.

2. Literature review

Although organisational philosophy in its entirety or partly has been an important and well-studied area in the past, this research focused itself mostly on companies. Up till now, however, TTO missions and visions remain a highly underexposed topic in the existing research on technology transfer.

Management professionals have argued that the establishment of organisational values such as innovation, fairness, equity, etc. is related to organisational success (Ledford Jr., Wendenhof, & Strahley, 1995). Together with an organisation's mission and vision, they form the organisational philosophy (Wartnaby, 2014). This organisational philosophy defines specifically what the organisation wants to achieve, and the values and ethics through which it wants to achieve that (Marcinkeviciene, Mikalauskiene, & Peleckiene, 2010). The organisational philosophy is highly connected to organisational culture, as organisational culture

is in fact the operationalisation of the organisational philosophy (Kemp & Dwyer, 2003; Marcinkeviciene et al., 2010) The philosophy of an organisation encompasses the ethical belief system and principles that lie behind the organisation's culture (Kemp & Dwyer, 2003).
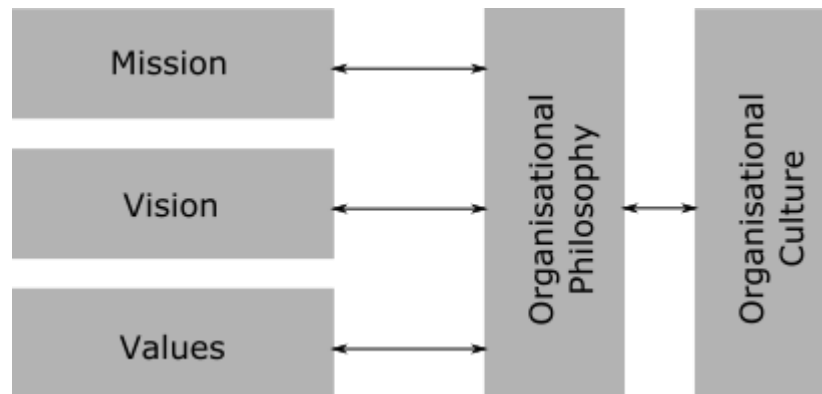

Fig. 1 *The organisational philosophy comprises the mission, vision and values of an organization and in operationalised through its culture. These concepts do influence each other. (source: own composition based on Kemp & Dwyer, 2003; Ledford Jr. et al., 1995; Marcinkeviciene et al., 2010; Wartnaby, 2014)*

Having an organisational philosophy could impact the organisation in three different ways: First, an organisational philosophy could guide the behaviour and decision-making process of its employees and executives, enabling individuals to organise their work and achieve common purposes in the absence of their managers (Ledford Jr. et al., 1995). Secondly, it influences organisational culture in such a way that employees know how to interpret ambiguous stimuli. Finally, it could improve organisational performance, even if it is only because one employee feels the organisational philosophy resonates with its own private values and therefore wants to be more engaged (Ledford Jr. et al., 1995).

Because the philosophy is implicitly present within a company, it is often formalised in a mission statement, a vision for the organisation or a formalised set of values.

By definition, a mission statement exists of an organization's unique and enduring purpose, formalized in a written document (Bart & Taggar, 1998). It answers the most fundamental questions on the purpose and existence of the organisation, and what it is trying to accomplish (Bart & Taggar, 1998). Often it is formatted as a one-pager, folded flyer or small booklet, as a reminder of religious synopses such as 'the Ten Commandments' in Christianity or Mao's 'Little Red Book' in political literature (Swales & Rogers, 1995). A well written mission statement can be helpful to stakeholders in order to understand the organisation and giving them an insight in its operational workings and behavioural conduct (De Smidt & Prinzie, 2009; Wartnaby, 2014).

The vision is the organisation's aspirational goal which it wants to reach within a set time frame, while the values of an organisation are the underlying principles concerning behaviour, character and culture (Kaplan, Norton, & Barrows Jr., 2008; Wartnaby, 2014). Together, an organisation's mission, vision and values form the organisational philosophy (Wartnaby, 2014). This organisational philosophy does impact a firm's performance: Through employee motivation, resources allocation, evaluation, etc. … (Bart & Baetz, 1998; Bart & Taggar, 1998).

Some related seminal work on TTO mission statements was performed by Fitzgerald & Cunningham (2016) for seven TTOs in Ireland. In their research, a TTO's mission statement is identified as indispensable for the identification of the TTO's central defining purpose or 'raison d'être' (Fitzgerald & Cunningham, 2016). The research was based on Pearce and David (1987) and their work on mission statements in general

companies. They identified eight key components that should be part of a qualitative mission statement (Pearce & David, 1987):

1. The specification of target customers and markets
2. The identification of principal products and services
3. The specification of the geographic domain
4. The identification of the core technologies,
5. The expression of commitment to survival, growth and profitability
6. The specification of key elements in the company philosophy
7. The identification of the company self-concept
8. The identification of the firm's desired public image

It is especially the result on the presence of the sixth key component in the TTOs mission statements that is noteworthy: none of the TTOs studied by Fitzgerald and Cunningham (2016) mention any company philosophy, such as core values or believes, in their mission statements. It is difficult to believe that a TTO is able to operate without a company philosophy to drive daily operations. As Fitzgerald and Cunningham (2016, p. 1238) state: '*Do mission statements reflect the organization reality and experiences, and as such are they genuine?*' Even if a company philosophy is not included in the mission statement, it does not mean that it is not present. The (organisational) philosophy of a company comes to the surface in the actions and structure of a TTO, but also in the wording used in the rest of the mission statement.

Of course, the mission statement of an organisation has to be linked to the purpose of that organisation. M Good, Knockaert, & Soppe (2017) identified four organisational purposes of TTOs, which can be found in table 1. First and foremost, the purpose of the TTO is to act as a bridge between the university and possible markets, such as industry or community (Geuna & Muscio, 2009; Huyghe, Knockaert, Wright, & Piva, 2014; Markman, Phan, Balkin, & Gianiodis, 2005; Schaeffer & Matt, 2016; Siegel, Waldman, Atwater, & Link, 2003). Traditionally, they also manage the university's intellectual property rights, with the purpose of generating revenue to support the university (Geuna & Muscio, 2009; Jefferson, Maida, Farkas, Alandete-Saez, & Bennett, 2017; Schaeffer & Matt, 2016). More recently, TTOs are also assisting researchers in bringing their inventions to the market and creating value for the community through economic development (Fitzgerald & Cunningham, 2016; Jefferson et al., 2017; O'Gorman, Byrne, & Pandya, 2008; Schaeffer & Matt, 2016; Siegel, Waldman, & Link, 2003; Siegel & Wright, 2007).

TTOs	Act as a **bridge** between university and market environments	Geuna and Muscio, 2009; Huyghe et al., 2014; Markman et al., 2005b; Schaeffer and Matt, 2016; Siegel et al., 2003a
	Protect university **proprietary rights in order to generate returns**	Geuna and Muscio, 2009; Jefferson et al. 2017; Schaeffer and Matt, 2016
	Support **pre-commercialisation of inventions**	Fitzgerald and Cunningham, 2016; Jefferson et al. 2017; Siegel and Wright, 2007
	Support local or regional **economic development**	Fitzgerald and Cunningham, 2016; Jefferson et al. 2017; O'Gorman et al., 2008; Siegel and Wright, 2007; Schaeffer and Matt, 2016; Siegel et al., 2003b

Table 1 The organisational purpose of a TTO is very diverse. (source: M Good et al., 2017)

In the following section, will further address this assumption and construct the theoretical framework of this study.

3. Theoretical framework

As stated in the literature review, implicit information can be extracted from the TTOs mission statement that can give an observant reader an insight into the TTO's organisational philosophy. The use of certain vocabulary or choice of words could be an indication of this organisational philosophy. In the specific case of TTOs, we specifically refer to the use of the terminology "commercialisation" and "valorisation" as indicators of organisational philosophy. In the following sections, we will elaborate on the disambiguation and definitions of these concepts.

3.1 Commercialisation vs. valorisation

In the field of technology transfer, commercialisation and valorisation are common concepts. A Scopus search reveals that commercialisation as a keyword goes back to the early eighties in research. Valorisation, however, is a much newer concept that finds its origins in the early beginning of the new millennium.
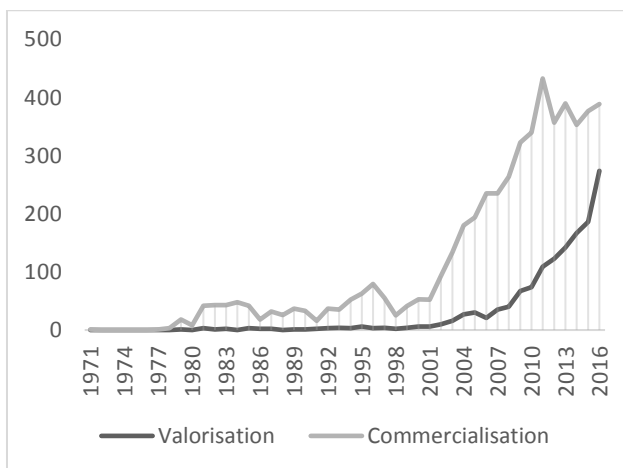
Fig. 2 *Papers published with key words 'Commercialisation' and 'Valorisation' in all research areas (source: Scopus)*
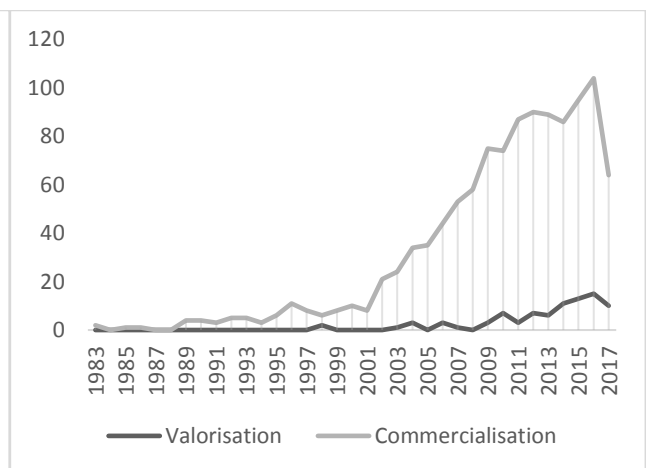
Fig. 3 *Papers published with key words 'Commercialisation' and 'Valorisation' in economics and business research (source: Scopus)*

In recent (academic) literature the concepts 'commercialisation' and 'valorisation' are often used as synonyms. It is, however, important to distinguish the nuances between those concepts, as they have different definitions. This fact makes them valuable indicators for TTO organisational philosophy as they tend to give an indication about the users' approach on technology transfer. Therefore, we will give an overview of the concept definitions and the use of both concepts in academic literature.

3.2. Commercialisation, a concept definition

As previously touched upon and can be seen in figures 2 and 3, the concept of commercialisation of academic research became popular in research in the early eighties, which can be linked to the passing of the Bayh-Dole act in 1980 in the United States (Conti & Gaule, 2011; Miller, Mcadam, & Mcadam, 2014; Rothaermel, Agung, & Jiang, 2007). This era is characterised by a sharp descent of government funding for academic research in the US under impulse of the Raegan administration (Grimaldi, Kenney, Siegel, & Wright, 2011; Hladchenko, 2016), leaving universities to fend for themselves and create new income sources (Hladchenko, 2016; Rasmussen, 2008).

Also in Europe, traditional governmental funding for technology transfer diminished in the 80s under pressure of cost reducing policies (Guena, 2001). However, these gaps were filled in with other types of specific funding frameworks from the European Commission and regional and national governments (Guena, 2001; Munari, Pasquini, & Toschi, 2015) such as proof-of-concept funding and university specific seed funds (Audretsch & Caiazza, 2016). As a reaction to the diminishing government subsidies, the amount of TTOs increased both in the United States and Europe (Muscio, 2010), as universities started to search for short term solutions[1] to their funding gaps. Many found a solution in licencing income (Bray & Lee, 2000).

This short term focus can be encompassed within the term commercialisation, as it is primarily motivated by commercial motives, albeit to sustain the operations of the TTO and the university, and heavily linked to academic capitalism (Benneworth & Jongbloed, 2010; Hladchenko, 2016). Universities and TTOs focusing on commercialisation of academic knowledge have a tendency to focus on financial and quantitative key performance indicators (KPIs) such as the amount of patents and licences an institution has filed for or the income revenue they generated over a period of time (Markman et al., 2005). This will also be reflected in the mission statement and organisational philosophy of the TTO.

3.3. Valorisation, a concept definition

The term 'valorisation' comes from the French verb 'valoriser' which translates to 'to enhance, to develop'. This origin frames it within a much broader context than it is often used. The original definition traces back to the Lisbon agenda of the European Union (Andriessen, 2005; Hladchenko, 2016) and was defined by the European Commission in its original context as (Leonardo UK National Agency, 2004):

> *'The process of enhancing or optimising project outcomes through experimentation and exploitation with a view to increasing their value and impact.'*

The difference with commercialisation situates itself at the end of the definition: The European government aim to increase the impact and relevance of technology transfer to society (Pinheiro et al., 2015). It is important to note that this definition does not specify that this impact should be of the financial or quantitative kind. It is tempting to focus on these key performance indicators (KPIs), as they are more readily measurable and give a perceived notion of objectiveness. The availability of quantitative and financial results, however, depend heavily on the research field under investigation. Physical and life sciences are often perceived as more successful when it comes to technology transfer, as their patents often generate obvious licensing income, whereas social sciences and humanities research outcomes often disseminate into the non-profit sector of government organisations and are therefore less obvious to quantify (Benneworth & Jongbloed, 2010).

The creation of the concept valorisation can be linked with changing discourse of governments concerning the third mission (Lockett et al., 2015; Pinheiro et al., 2015) and the subsequent strategy switch many TTOs have applied: In the beginning of the new millennium, spin-offs became more and more popular as technology transfer medium (Huyghe et al., 2014; Meysman, De Cleyn, & Braet, 2017). A study from De Cleyn, Tietz et al. (2010) shows that between 1997 and 2002 the amount of spin-offs created in Europe tripled. These findings suggest that TTOs started to focus more on the long term and on more indirect impact on economy and university.

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[1] The authors, however, believe that technology transfer itself should be considered a long term strategy for academic institutions. The creation and development of a TTO cannot be considered as a short term solution for funding problems, as a carefully built and maintained technology transfer strategy will result in a consistent income over the long term.

3.4. The use of the concepts 'Commercialisation' and 'valorisation' as indicators of organisational philosophy

From the previous sections it has become clear that a 'commercialisation' orientation and a 'valorisation' orientation are different. While the use of the concept 'commercialisation' in the TTO's mission statement theoretically indicates that the main aim of the TTO is to generate a revenue stream (possibly to sustain university operations), the use of the concept 'valorisation' in the mission statement indicates that it is the TTO's mission to create an impact on the community, not necessarily through the monetisation of new findings. In this study, we use this difference in definition to disambiguate the organisational philosophy of TTOs. In the following section, we will concretise this framework through the research question.

4. Goal and scope

The goal of this paper is to propose categories for TTO mission statements based the theoretical findings on the concepts 'commercialisation' and 'valorisation' and validated through empirical research. Specifically, we formulated following research question:

> *"What organisational philosophy drives TTO actions when it comes to the transfer of technology trough spin-offs and can these philosophies be aggregated into categories?"*

We studied 51 academic TTOs affiliated with one or more academic institutions, such as universities or Public Research Organisations (PROs), within the geographical region of Europe.

As the responsibilities of TTOs differ from one to the next, this may compromise the construction of categories for the complete mission statement. Therefore, the scope of this paper is limited to the TTO's organisational philosophy when it comes to the transfer of technology through spin-offs. In this context, it also partially includes licensing negotiation strategies, as often newly founded spin-offs become licensees of patented academic knowledge (or academic knowledge protected by other means, such as copyrights).

In order to find out if TTOs also practice their organisational philosophy, their licensing negotiation strategies are also studied.

5. Methodology

It has become clear that the concept 'Commercialisation' and 'Valorisation' are not one on one synonyms. Their use as such can therefore be an interesting indication on what the driving force behind the operations of a TTO is. Therefore, we will use these concept definitions to build the fundaments of a new categorisation, categorising the TTO based on its organisational philosophy. To test this newly found categorisation, a survey was conducted on the European level. Research design, sample characteristics, data collection and analysis will be explained in following paragraphs.

5.1. Research design and data collection

The fundaments of the categorisation to be built are found in a holistic multiple-case study (Yin, 2003) in Flanders and The Netherlands. An inductive approach for this case study was chosen (Dana & Dana, 2005), resulting in an empirical study based on real life observations. We opted for open ended, face to face interviews with TTO experts of six selected academic TTOs in Flanders and the Netherlands. The choice for this type of interview is derived from Glaser (1967) who stipulates that all is data. This specifies that the context and environment in which the interview takes place also contain implicit information, important for empiric research (Glaser & Strauss, 1967). The results that were deduced from the interviews were validated through a focus group. The focus group consisted of seven TTO experts with similar profiles as the previously interviewed experts in the case study.

Building on the results of the holistic multiple case study and the focus group, an online survey was composed (Vehovar & Lozar Manfreda, 2017) that was sent by e-mail in May and June of 2017 to TTO professionals with high operational experience all over Europe. The aim of the survey was to gather data on TTO affiliation, mission, vision, operations and demographics. This article focusses mainly on the TTO mission and vision part of the survey, while using the collected data on the other topics to put these missions and visions in context.

The e-mail survey was designed in an online survey tool, keeping the survey design quality criteria as proposed by Andrews & Preece (2003) in mind: Before sending it out, the proposed four-staged pilot process was run through (Andrews & Preece, 2003) with multiple test runs by different stakeholders. An online survey brings along certain risks, such as low response rates, impersonality, unclear answering instruction and the e-mail being perceived as junk mail (Evans & Mathur, 2005). These risks were mitigated with strategies as proposed by Evans & Mahur (2005): After the initial survey was sent out, we sent out several reminders in order to improve the response rate. Introductions and e-mails were personalised and sent from the personal address from the lead researcher, so that respondents felt personally involved. In case the test runs showed that the questions or answering instructions were unclear, extra information was added.

The survey existed out of several different question types. In one of the questions, respondents were asked to rank four statements on TTO mission and vision in the order that was most suitable for their TTO, with a top ranking as being most suitable and a bottom ranking as least suitable. The decision to use ranking instead of a multiple answer or multiple-choice question, was led by the belief that, unregarded the dominant mission and vision of a TTO, the other aspects of the categories are also present within the TTOs operations, as the categories in the categorisation are not considered mutually exclusive. In addition we assumed that ranking would alleviate the pressure to answer in a socially acceptable way, as previous studies showed that cash-driven TTOs are not always willing to come out into the open with this strategy (Meysman et al., 2017).

The statements were developed based on the results from the case study and focus group mentioned earlier. Based on the definitions on commercialisation and valorisation and the findings from six TTOs in Flanders and the Netherlands, which were confirmed by 7 TTO experts in the focus group, we formulated three statements which expressed a respective approach on each of the detected mission and visions. Said statements were carefully tailored to represent a neutral tone and tendentious wording was avoided. In order to overcome display bias, the statements were displayed in a random order to each respondent. Because the case study only gave an insight into the organisational philosophies of six TTOs, a fourth blank statement was offered to give the respondents the possibility to fill in any gaps with respect to their TTO's mission, vision and philosophy, as they were not represented in the other three statements. This ensured that if there are any undetected organisational philosophies present in TTOs, they could still be captured.

In order to find out if technology transfer offices also put their organisational philosophy into practice, we asked them to specify their licensing negotiation strategies when it comes to licensing to spin-offs. Again, based on the findings of the case study and focus group, three statements were formulated that represented licensing negotiation strategies aligned with the organisational philosophy statements. Respondents were asked to indicate which statement they consider appropriate for their TTO. Then the chosen statement was compared with the ranking of the organisational philosophy statements. The results are shown in section 6.3.

The remainder of the survey consisted of multiple choice, multiple answer and dichotomous questions. Although a thorough case study preceded this survey to provide a complete set of answers, extra text boxes

were provided in case respondents felt the need to clarify or if the answer applicable to their situation was not available.

5.2. Sample size and data analysis

For the affirmation of the Triple C Categorisation, we specifically looked at academic TTOs, i.e. TTOs that are affiliated with one or more academic institution and/or universities. To ensure the external validity of the study, an international context was preferred for a regional context. Therefore, the study is performed in a European context. 149 TTOs spread over 20 European countries were contacted to participate in the study. They were selected randomly and if contact information was available, the TTO was retained in the data sample.

After the collection of the responses, the raw data was cleaned on different levels. Firstly, in cases where multiple answers from the same TTO (from different respondents) were registered, the most complete answer from the person with the highest rank was retained. Then, in case the respondent made use of the option to add a specific fourth statement (as explained in section 5.1), the statement was analysed and scanned for keywords based on the definitions and scope from sections 3.2 and 3.3. If the fourth option had a significant overlap with one of these definitions, it was recategorised to the respective prevailing TTO mission focus 'C'. Although not expected, it was possible to recategorise all TTO specific statements to the three other categories.

After cleaning up the data, a sign test was performed to find out if any of the results on organisational philosophy lead to a conclusive outcome on possible organisational philosophy trends. This statistical test was chosen as it makes a pairwise comparison of two populations that are linked, and is closely related to the Wilcoxon signed-rank test (Sheshkin, 1997). It determines the relative magnitude of the observations of said populations (Aczel & Sounderpandian, 2007). In this case the different populations are the ranks given to each statement. Therefore, the test was performed three times, once for each pair of data. The results of these statistical tests will be presented in the next paragraph. Other statistical test were not possible, as the observation values are ranked, and thus not independent of each other (Aczel & Sounderpandian, 2007; Sheshkin, 1997). Other, more elaborate statistical analysis methods all assume independency (Sheshkin, 1997), which is not present when working with ranked data.

6. Results

In the following paragraph, we present the results from our study on TTO mission and vision. First, we offer some descriptive statistics on the research sample. Thereafter, we present the categorisation as it is derived from the results of the holistic multiple case study and focus group. In the last paragraph, we analyse the results from the survey, in order to answer the research question as formulated in section 3 and validate or reject the proposed categorisation.

6.1. Descriptive statistics

From the 149 TTOs contacted across Europe, 51 responded, which brings the general response rate up to just over 34%. Table 2 displays the amount of TTOs contacted per country and the respective amount of positive responses received. During the preparations of this research project, it became clear that not all TTOs can be contacted easily. As not all universities have their TTOs contact information on their websites, some TTOs were contacted through LinkedIn searches. However, many university TTOs remain unreachable for external parties. As this often occurs in specific countries, this results in a geographically unevenly distributed data sample. We managed, however, to contact a decent number of TTOs in each country.

TTOs contacted	Responses	Response rate

Austria	10	3	30,0%
Belgium	11	5	45,5%
Croatia	3	1	33,3%
Czech Republic	3	2	66,7%
Denmark	8	1	12,5%
Estonia	3	2	66,7%
Finland	5	1	20,0%
Germany	15	5	33,3%
Greece	3	1	33,3%
Hungary	4	1	25,0%
Ireland	12	7	58,3%
Italy	9	2	22,2%
Luxemburg	1	1	100,0%
Norway	3	3	100,0%
Poland	8	3	37,5%
Spain	8	1	12,5%
Sweden	4	2	50,0%
Switzerland	10	1	10,0%
The Netherlands	9	2	22,2%
United Kingdom	20	7	35,0%
Total	**149**	**51**	**34,2%**

Table 2 *TTOs in 20 European countries have been contacted to participate in this study. In some countries, TTOs are easier to contact than in others, leading to unevenly distributed sample.*

All five academic disciplines (Arts, Humanities, Social Sciences, Natural and Applied Sciences) are represented in the sample. Figure 4 shows the percentage of universities with faculties in respective academic disciplines. All academic disciplines are represented by more than 50%. Natural and applied sciences are the most popular represented academic disciplines, scoring high in the ninety percent region.

It is noteworthy to mention that the large majority of the participating TTOs are considered as 'Single University TTOs'. A single university TTO is affiliated with only one university. An exception is made for universities that have affiliated university colleges and/or hospitals. Although they might operate as separate legal entities, they are branded under the name of the university. For the purpose of this study, they are, therefore, considered as part of the university they are affiliated with. Multi-university TTOs, on the other hand, are affiliated with two or more universities, who do not have any affiliation with each other. Some descriptive statistics on TTO affiliations are displayed in figure 5.

% of Universities offering academic disciplines (n=51)

Applied Sciences — 94%
Natural Sciences — 96%
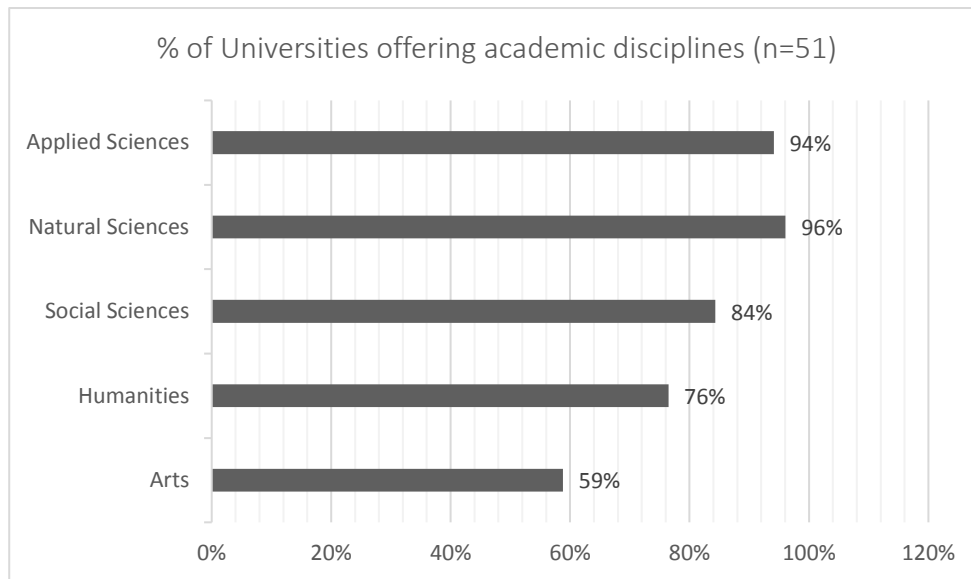Social Sciences — 84%
Humanities — 76%
Arts — 59%

Fig. 4 Natural and applied sciences are very well represented in the sample. More than half of the TTOs also represent universities with Arts faculties.
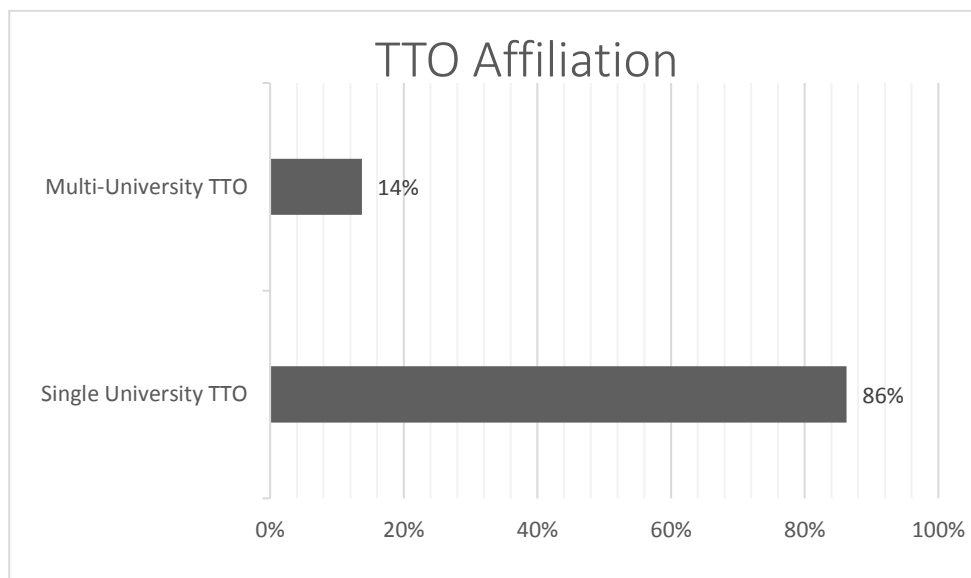

TTO Affiliation

Multi-University TTO — 14%
Single University TTO — 86%

Fig. 5 The majority of TTOs is affiliated with only one university while some TTOs have affiliations with more than one University

6.2. Building the Triple C-categorisation

In the results of the holistic multiple case study and the focus group we found that TTOs generally adhere to one of three mission statements (Meysman et al., 2017):

- *Cash*:   A TTO that is focused on generating hard cash to ensure the continuation of the research activities of the affiliated institutions adheres to the 'Cash' mission. They are often also characterized by Intellectual Property (IP) austerity, an approach in which the university always (and without exception) has to be remunerated correctly for the use of its IP. Often payment indirect or non-monetary (new research contracts, internships, etc. …) is not accepted. A 'Cash' driven mission will be characterised by the use of the concepts 'commercialisation', 'revenue creation' and will focus on financial indicators and number of filed patents and licenses.

- *Community:*   TTOs that are more focussed on regional development and creating impact in the community will prioritise the transfer of technology above correct compensation. They are predominantly looking to create positive spin-off effects in the region such as job creation and increasing innovativeness. TTOs that adhere to the 'Community' mission statement focus on long term partnerships and accept indirect or non-monetary compensation for their IP, such as the procurement of (paid) internships for students, guest lecturing, contract research, equity in the licensing spin-off, etc. TTOs that are 'Community' driven, focus on concepts as 'valorisation' and 'impact' and will report on created jobs, spin-offs, long terms partnerships and attracted research grants.
- *Coordination:*   When the TTO's main task is to support inventors and researchers administratively and they fulfil a predominantly coordinating role, they adhere the 'Coordination' mission. In these cases, the inventor or researcher that wants to commercialise or valorise a technology will find its own licensees and carry the ultimate responsibility for the decision. The TTO can have an advisory role, but decision power will lie with the inventor himself. When Coordination is the focus of a TTO, their main tasks revolve around administration.

When linking these definitions back to the organisational purpose theory from Good et al. (2017), we can see that each organisational philosophy is linked to specific purposes. One could conclude that the organisational purpose is the operationalisation of the organisational philosophy.

	Organisational purpose	Organisational philosophy
TTOs	Act as a **bridge** between university and market environments	Coordination, Cash, Community
	Protect university **proprietary rights in order to generate returns**	Coordination, Cash, Community
	Support **pre-commercialisation of inventions**	Cash, Community
	Support local or regional **economic development**	Community

Table 3 Organisational purpose and philosophy are linked. The combination of organisational purpose and philosophy steers the TTO in its day to day business (source: own compilation based on M. Good et al., 2017)

Before proceeding, we would like to insist that all three organisational philosophies are equally viable. The organisational philosophy of a TTO often depends on the political climate and local, regional and national legislation.
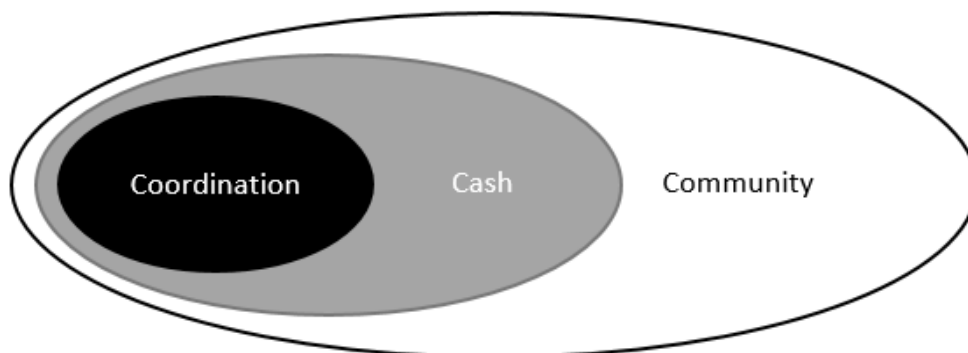

Fig.6 The different categories of the categorisation are not mutually exclusive.
'Coordination' can be seen as subset of both 'Cash' and 'Community', while 'Cash' on its own is also a subset of 'Community'

We also want to stress that the categories in the categorisation are not mutually exclusive. A 'Community' oriented TTO will not always license its IP for indirect or non-monetary compensation, nor will it not offer any assistance to researchers who are willing to manage the technology transfer process themselves. 'Cash' oriented TTOs will also offer this assistance when necessary, but are less likely or even unwilling to accept Indirect or non-monetary compensation for their licenses.

The previous definitions of the Triple C categorisation originate from a multiple-case study on 6 TTOs in the Flemish region and The Netherlands. To affirm the Triple C Categorisation, a survey was performed in a European context. The purpose of this study was to probe TTOs for their current missions and visions in order to categorise them accordingly and to make sure that the small sample from previous work had not left gaps in the categorisation.

6.3. Categorisation analysis

In figure 7, the results of the survey are displayed as ranking histograms. The Community organisational philosophy scores highest with 29 TTOs that have ranked this statement as most suitable to describe their organisational philosophy. The difference between the Cash and Coordination organisational philosophy is
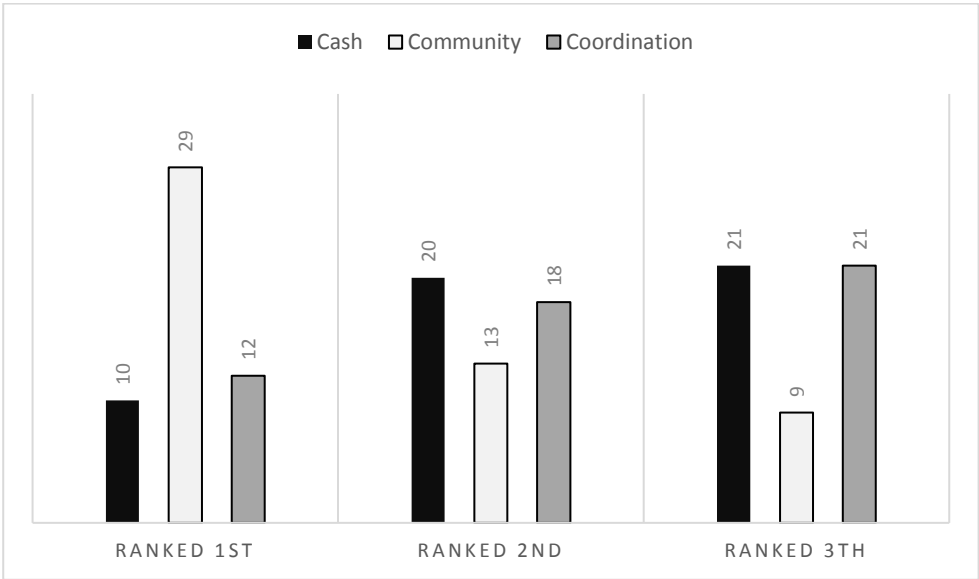

Fig 7 It is clear that the Community oriented organisational philosophy scores best with the studied TTOs, while Cash driven TTOs and Coordination TTOs are present in near equal amounts

much more difficult to distinguish. While Coordination scores highest on first ranks, Cash is always the highest category as a second and third rank.

Categorical comparison	p-value
Cash-Community	0.002
Coordination-Community	0.012
Cash-Coordination	0.5

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As described in section 5.2, to get more clarity about the results, a sign test was performed. The results of the pairwise comparison of the sign test are depicted in figure 8. The sign test demonstrates that Community as an organisational philosophy scores significantly better than Cash or Coordination. There is, however, no statistical significant difference between the ranking scores of these latter two.

From these results, some important conclusions can be drawn. So is it apparent that a little more than half of the TTOs acknowledge that they prefer a broader view on technology transfer, and therefore opt for 'valorisation', assuring that their transferred knowledge creates an impact on the region. Only 20% of the studied TTOs propagate a mission that revolves around creating revenue for the affiliated universities as main reason of existence. And, despite all policy efforts of the European Union, 20% of the studied TTOs are still predominantly administrative entities. As both Cash and Coordination score well as second ranks, it is acceptable to draw the conclusion that, despite the Community orientation of a TTO, administrative support and revenue creation are still important goals and should not be overlooked.

Keeping these conclusions in mind and as the creation of spin-offs often goes together with the transfer of IP (possibly in exchange for licensing fees, royalties, equity positions, etc. …) (Bray & Lee, 2000), we also surveyed the IP licensing negotiation strategy in order to find out if the proclaimed mission or organisational philosophy is aligned with actual operations.

As Meysman et. al. (2017) have shown, different approaches on IP licensing negotiation strategy exist, ranging from austerity to leniency. This is of great importance as often, when a new spin-off is created, a patent on academic knowledge is licensed to this new spin-off. In case the TTO mission is lined up with TTO operations, this mission should also have an influence on licensing negotiation strategies. Specifically, one would expect a TTO that has a 'Cash' organisational philosophy, and therefore rather wants to commercialise its universities technology than to valorise it, would drive a hard bargain during licensing negotiations and only accept correct monetary compensation for the use of its IP. 'Community' driven TTOs that put the emphasis on valorisation, would not try to get the most out of it when it comes to monetary remuneration. As discussions on monetary licensing remuneration have a tendency to stretch out, negatively influencing the time to market of a technology, indirect or non-monetary compensation would allow the process to be sped up.
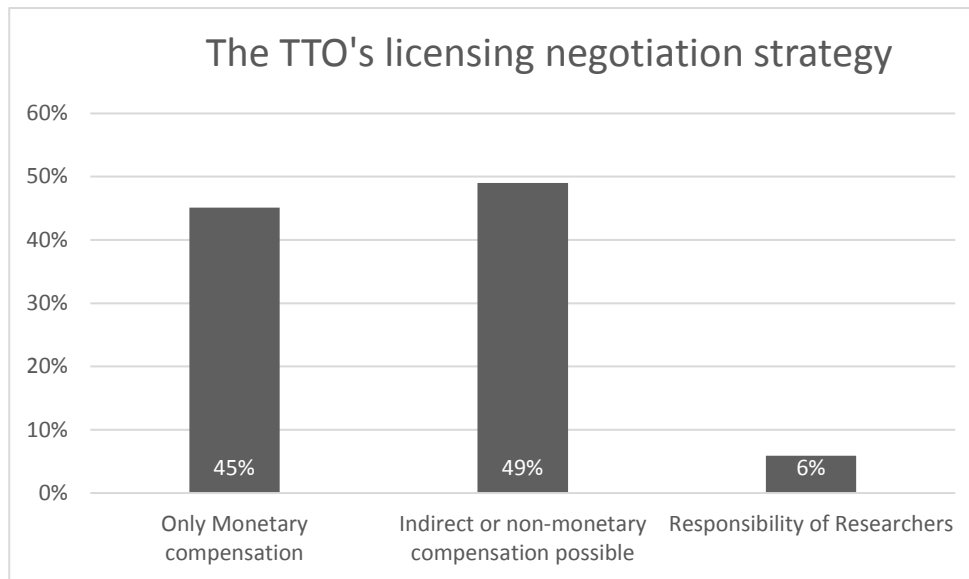
Fig. 9 Although less pronounced as in figure 7, the majority of TTOs act quiet lenient on IP negotiations

While almost 60% of the TTOs identified themselves as 'Community' oriented when it comes to organisational philosophy, barely 49% of the responding TTOs indicate that they are open to indirect or non-monetary compensation for their IP.

		IP negotiation strategy		
		Only monetary compensation	Indirect or non-Monetary compensation possible	Responsibility of Researchers
TTO organisational philosphies	Cash	6	3	1
	Community	11	17	1
	Coordination	6	5	1

Table 4 This matrix links TTO mission (rows) to licensing negotiation strategy (columns). The diagonal represents the theoretical answer per mission type. It is clear that the reality often deviates from the theory.

In table 4, TTO missions and licensing negotiation strategies are linked. Although the majority in the categories 'Cash' and 'Community' apply the theoretically expected licensing negotiation strategy. However, many of the TTOs that claim to propagate valorisation ('Community' driven TTOs) still seem to focus on the hard cash during licensing negotiations. Some 'Cash'-driven TTOs, on the other hand, show some unexpected leniency when it comes to monetary compensation for IP. A possible explanation is that, when these TTOs focus on indirect or non-monetary compensation, they are securing future cash flow through research contracts and other financial constructions.

Remarkably, even TTOs that focus on cooperation, and give predominantly administrative support, still have certain expectations when it comes to licensing negotiation strategies.

7. Conclusions, limitations, implications and discussion

The goal of this study was to find out what organisational philosphies are currently present in European TTOs, driving their daily operations and influencing the financial and strategical decisions that are made internally. And in case such organisational philosphies could be identified, would it be possible to aggregate them into categories? This study proposed an initial categorisation (Triple C) of organisational

philosophies, based on results from a prior case study and the theoretical framework presented in this paper. The initial categorisation was then tested through a survey of 51 TTOs across Europe. To mitigate the risk of data loss during the data gathering, TTO experts were given the option to define their own definition for their mission if they perceived the existing categories as insufficient. The experts that made use of this option, often did so to specify their position as the suggested categories were found to broad. As all statements could be re-categorised to one of the 'C' definitions, we can conclude that the Triple C categorisation can be classified as a valid and all-encompassing categorisation method. From the results of our study, we can conclude that there are three organisational philosophies that are prevalent amongst European TTOs: Coordination, Cash and Community.

It is however important to understand that there are certain limitations to this study: Frist, there is the limited number of TTOs that were studied. Although we contacted 149 TTOs, of which 51 responded, there are many more TTOs active in a the European geographical area. The problem, however, seems to be being able to contact them, as many TTOs are only attainable for internal stakeholders and no contact details are publically available. This might also suggest, thinking from the Triple C angle, that many TTOs have a coordination organisational philosophy, only offering services to internal stakeholders such as researchers and are thus not interested in outside contacts. Secondly, this study only focussed on organisational philosophy concerning the creation of spin-offs. It is possible that, when other modes of technology transfer are taken into account, the categories as currently defined, can be considered too narrow.

A third caveat is the potential incorrect use of terminology such as 'valorisation' and 'commercialisation': The results have shown that from the 51 participating TTOs, 29 identify themselves as 'Community'-driven TTOs, putting emphasis on valorisation rather than commercialisation. By pursuing valorisation, these TTOs aim specifically at generating impact in the community instead on focussing on revenue. When we link this mission to their licensing negotiation strategies, however, a different image rises: despite the good intentions, a large part (38%) of these TTOs still believe in IP austerity when it comes to transferring any IP. Therefore, one could ask the question if the image of these 'valorisation' minded TTOs is just that: an image.

As explained in section 2.3., the definition of valorisation can be traced back to the European Commission (Andriessen, 2005; Hladchenko, 2016). Since Research and development in member countries is highly linked to the European policy, it is possible that 'valorisation' as a term seeps into national and regional policies and language (eg. Vlaamse Regering, 2014). From there it can easily be picked up by research institutions and universities to adopt it into their jargon. This study shows that, although TTOs claim to 'valorise', they often do not put their money where their mouth is. Hence, 'valorisation' as defined by the European Commission runs the risk of becoming an empty term.

In addition, we would like to add that, although the intentions of the European Commission were noble when introducing the term 'Valorisation', we believe that the mission and strategy of a TTO most likely comes down to the willingness of the TTO to take risks when transferring technology. With airtight licensing contracts and well negotiated royalties and fees, a TTO is quite certain of its returns. While the acceptance of other payment methods such as equity, research contracts, internships, etc. … brings along a certain investor risk.

The identification of the Triple C categorisation for TTO organisational philosophies concerning spin-off creation also has some important implications. The confirmed existence of this categorisation enables TTOs to formally adhere to one of the three possible TTO organisational philosophies and thus giving their internal and external stakeholders an insight in what to expect when dealing with the TTO.

As stated in the introduction, governmental discourse concerning technology transfer has changed during the past decades, affecting the expected performance of the TTOs by the government. As many

governments still provide subsidy schemes and operational grants to TTOs across Europe, which are often allocated based on performance based distributions keys, TTOs often have no other choice than to keep governmental discourse, and its subsequent performance expectations, in mind during decision making processes. If, for example, the government rewards generating income through licenses, a TTO would be far more likely to negotiate harder terms with possible licensees, than if the creation of jobs is encouraged.

Formalising the organisational philosophy of a TTO under Triple C, and thus proclaiming it publically, will probably increase transparency for all contracting parties. It should also lead to adjusted metrics for measuring TTO performance, as discussed in the introduction, as different missions, visions and organisational philosophies lead to different types of output of a TTO. Performance measurement should subsequently be adapted to the mission of the TTO, in order not to favour one mission or philosophy over the other. There is the possibility to identify metrics for every one of the three categories of organisational philosophy under Triple C, and subsequently use them in TTO reporting to stakeholders. Adapting the metrics to organisational philosophies will level the playing field in the competition for government funds.

The identification of such metrics will lead to far away from the topic of this paper, as one could not decide on this topic without taking the field of performance measurement into account. It is also important to study the current reporting requirements of TTOs towards their governments in more detail. This research angle, thus, provides a myriad of possibilities for further research.

The results of Meysman et al. (2017) and Lockett et al. (2015) suggest that TTO organisational philosophy is linked to the discourse of the government of the country they are active in. This also leads us to believe that, as the discourse of governments on technology transfer and TTOs has changed in the past, it could also change in the future. This will result in the emergence of new organisational philosophies, aligning TTOs with the expectations of their governments. The Triple C-categorisation is therefore a living categorisation, that should be amended and supplemented to ensure its relevance in the future.

This study is limited in a European context, but validation in other geographical areas would improve the categorisation's strength. Especially academic TTOs in the United States would serve as an interesting research sample, as the policy framework for technology transfer is significantly different from the European Union.

8. Bibliography

Aczel, A., & Sounderpandian, J. (2007). *Complete business statistics* (5th editio). McGraw-Hill.

Andrews, D., & Preece, J. (2003). Electronic Survey Methodology : A Case Study in Reaching Hard-to-Involve Internet Users. *International Journal of Human-Computer Interaction*, *16*(2), 185–210.

Andriessen, D. G. (2005). *Value , Valuation , and Valorisation*. Rotterdam-Dordrecht. Retrieved from http://www.innovativedutch.com/downloads/ValueValuationandValorisation.pdf

Audretsch, D., & Caiazza, R. (2016). Technology transfer and entrepreneurship : cross-national analysis. *The Journal of Technology Transfer*, *41*(6), 1247–1259. http://doi.org/10.1007/s10961-015-9441-8

Bart, C. K., & Baetz, M. C. (1998). The relationship between mission statements and firm performance: an exploratory study. *Journal of Management Studies*, *35*(6), 823–853.

Bart, C. K., & Taggar, S. (1998). *A model of the impact of mission rationale, conten, process and alignment on firm performance* (Innovation Research Working Group No. 73). Hamilton, Ontario.

Benneworth, P., & Jongbloed, B. W. (2010). Who matters to universities? A stakeholder perspective on humanities , arts and social sciences valorisation. *Higher Education*, *59*(5), 567–588. http://doi.org/10.1007/s10734-009-9265-2

Bray, M. J., & Lee, J. N. (2000). University Revenues from technology transfer: Licensing fees vs. Equity. *Journal of Business Venturing*, *15*(5–6), 385–392.

Conti, A., & Gaule, P. (2011). Is the US outperforming Europe in university technology licensing? A new perspective on the European Paradox. *Research Policy*, *40*(1), 123–135. http://doi.org/10.1016/j.respol.2010.10.007

Dana, L.-P., & Dana, T. E. (2005). Expanding the Scope of Methodologies Used in Entrepreneurship Research. *International Journal of Entrepreneurship and Small Business*, *2*(1), 79–88. http://doi.org/10.1504/IJESB.2005.006071

De Cleyn, S. H., Tietz, R., Braet, J., & Schefczyck, M. (2010). *Report on the status of academic entrepreneurship in Europe 1985 - 2008*. Puurs: UniBook.

De Smidt, S., & Prinzie, A. (2009). *Does your mission statement have any value? An explorative analysis of the effectiveness of mission statements from a communication prespective* (No. D/2009/7012/20). Ghent.

Evans, J. R., & Mathur, A. (2005). The Value of Online Surveys. *Internet Research*, *15*(2), 195–219. http://doi.org/10.1108/10662240510590360

Fitzgerald, C., & Cunningham, J. A. (2016). Inside the university technology transfer office : mission statement analysis. *The Journal of Technology Transfer*, *41*(5), 1235–1246. http://doi.org/10.1007/s10961-015-9419-6

Geuna, A., & Muscio, A. (2009). The governance of university knowledge transfer: A critical review of the literature. *Minerva*, *47*(1), 93–114. http://doi.org/10.1007/s11024-009-9118-2

Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory*. New Brunswick: AldineTransaction.

Good, M., Knockaert, M., & Soppe, B. (2017). Bridging the science-market gap : Towards a typology of technology transfer ecosystems in academia. In *Technology Transfer Society Conference*. Washington, DC.

Grimaldi, R., Kenney, M., Siegel, D. S., & Wright, M. (2011). 30 years after Bayh–Dole: Reassessing academic entrepreneurship. *Research Policy*, *40*(8), 1045–1057. http://doi.org/10.1016/j.respol.2011.04.005

Guena, A. (2001). The Changing Rationale for European University Research Funding : Are There Negative Unintended Consequences? *Journal of Economic Issues*, *35*(3), 607–632.

Hladchenko, M. (2016). Knowledge valorisation A route of knowledge that ends in surplus (an example of the Netherlands). *International Journal of Educational Management*, *30*(5), 668–678. http://doi.org/10.1108/IJEM-12-2014-0167

Huyghe, A., Knockaert, M., Wright, M., & Piva, E. (2014). Technology transfer offices as boundary spanners in the pre-spin-off process: the case of a hybrid model. *Small Business Economics*, *43*(2), 289–307. http://doi.org/10.1007/s11187-013-9537-1

Jefferson, D. J., Maida, M., Farkas, A., Alandete-Saez, M., & Bennett, A. B. (2017). Technology transfer in the Americas: common and divergent practices among major research universities and public sector institutions. *Journal of Technology Transfer*, *42*(6), 1307–1333. http://doi.org/10.1007/s10961-016-9516-1

Kaplan, R. S., Norton, D. P., & Barrows Jr., E. A. (2008). Developing the Strategy : Vision, Value Gaps , and Analysis. Boston: Harvard Business School Publishing.

Kemp, S., & Dwyer, L. (2003). Mission statements of international airlines: A content analysis. *Tourism Management*, *24*(6), 635–653. http://doi.org/10.1016/S0261-5177(03)00049-9

Ledford Jr., G. E., Wendenhof, J. R., & Strahley, J. T. (1995). Realizing a Corporate Philosophy. *Organizational Dynamics*, *23*(3), 5–19.

Leonardo UK National Agency. (2004). Valorisation Guidance Note for Applicants and Projects (Procedure B). Birmingham: ECOTEC Research & Consulting Limited.

Lockett, A., Wright, M., & Wild, A. (2015). The institutionalization of third stream activities in UK higher education: The role of discourse and metrics. *British Journal of Management*, *26*(1), 78–92. http://doi.org/10.1111/1467-8551.12069

Marcinkeviciene, V., Mikalauskiene, B., & Peleckiene, A. (2010). Concept of " Organizational Philosophy " Term in Modern Society. In *International Scientific Conference UNITECH '10* (p. 553). Grabovo: Techničeski Universitet Grabovo.

Markman, G. D., Phan, P. H., Balkin, D. B., & Gianiodis, P. T. (2005). Entrepreneurship and university-based technology transfer. *Journal of Business Venturing*, *20*(2), 241–263. http://doi.org/10.1016/j.jbusvent.2003.12.003

Meysman, J., De Cleyn, S. H., & Braet, J. (2017). Identifying the key processes for technology transfer through spin-offs in academic institutions : a case study in Flanders and The Netherlands. *International Journal of Technology Transfer and Commercialisation*, *15*(3), 291–308.

Miller, K., Mcadam, M., & Mcadam, R. (2014). The changing university business model : a stakeholder perspective. *R&D Management*, *44*(3), 265–287.

Munari, F., Pasquini, M., & Toschi, L. (2015). From the lab to the stock market ? The characteristics and impact of university- oriented seed funds in Europe. *The Journal of Technology Transfer*, *40*(6), 948–975. http://doi.org/10.1007/s10961-014-9385-4

Muscio, A. (2010). What drives the university use of technology transfer offices? Evidence from Italy. *Journal of Technology Transfer*, *35*, 181–202. http://doi.org/10.1007/s10961-009-9121-7

O'Gorman, C., Byrne, O., & Pandya, D. (2008). How scientists commercialise new knowledge via entrepreneurship. *Journal of Technology Transfer*, *33*(1), 23–43. http://doi.org/10.1007/s10961-006-9010-2

Pearce, J. A., & David, F. (1987). Corporate Mission Statements : The Bottom Line. *The Academy of Management Executive*, *1*(2), 109–115.

Pinheiro, R., Langa, P. V., & Pausits, A. (2015). The institutionalization of universities' third mission: introduction to the special issue. *European Journal of Higher Education*, *5*(3), 227–232. http://doi.org/10.1080/21568235.2015.1044551

Rasmussen, E. (2008). Government instruments to support the commercialization of university research: Lessons from Canada. *Technovation*, *28*(8), 506–517. http://doi.org/10.1016/j.technovation.2007.12.002

Rossi, F. (2017). The drivers of efficient knowledge transfer performance: evidence from British universities. *Cambridge Journal of Economics*, *6*(1), 21–37. http://doi.org/10.1093/cje/bex054

Rothaermel, F. T., Agung, S. D., & Jiang, L. (2007). University entrepreneurship: A taxonomy of the literature. *Industrial and Corporate Change*, *16*(4), 691–791. http://doi.org/10.1093/icc/dtm023

Schaeffer, V., & Matt, M. (2016). Development of academic entrepreneurship in a non-mature context: the role of the university as a hub-organisation. *Entrepreneurship and Regional Development*, *28*(9–

10), 724–745. http://doi.org/10.1080/08985626.2016.1247915

Sheshkin, D. J. (1997). *Handbook of parametrical and nonparametrical statistical procedures*. (T. Pletscher, Ed.). Boca Raton: CRC Press.

Siegel, D. S., Veugelers, R., & Wright, M. (2007). Technology transfer offices and commercialization of university intellectual property : performance and policy implications. *Oxford Review of Economic Policy*, *23*(4), 640–660. http://doi.org/10.1093/icb/grm036

Siegel, D. S., Waldman, D. a., Atwater, L. E., & Link, A. N. (2003). Commercial knowledge transfers from universities to firms: Improving the effectiveness of university-industry collaboration. *Journal of High Technology Management Research*, *14*(1), 111–133. http://doi.org/10.1016/S1047-8310(03)00007-5

Siegel, D. S., Waldman, D., & Link, A. (2003). Assessing the impact of organizational practices on the relative productivity of university technology transfer offices : an exploratory study. *Research Policy*, *32*(1), 27–48.

Siegel, D. S., & Wright, M. (2007). Intellectual property: The assessment. *Oxford Review of Economic Policy*, *23*(4), 529–540. http://doi.org/10.1093/oxrep/grm033

Swales, J. M., & Rogers, P. S. (1995). Discourse and the projection of corporate culture: the Mission Statement. *Discourse & Society*, *6*(2), 223–242.

Vehovar, V., & Lozar Manfreda, K. (2017). Overview: online surveys. In N. G. Fielding, R. M. Lee, & G. Blank (Eds.), *The SAGE handbook of online research methods* (2nd editio, pp. 146–161). London: Sage.

Vinig, T., & Lips, D. (2015). Measuring the performance of university technology transfer using meta data approach : the case of Dutch universities. *The Journal of Technology Transfer*, 1034–1049. http://doi.org/10.1007/s10961-014-9389-0

Vlaamse Regering. (2014). *Regeerakkoord vlaamse regering 2014-2019*.

Wartnaby, D. (2014). Organisational Philosophies : Mission , Vision and Values Statements Introductory Thoughts.

Yin, R. K. (2003). *Case Study Research: Design and Methods* (3th Editio). Thousand Oaks: Sage Publications.