staying in control while unlocking the knowledge.*

Practical study on good governance for knowledge institutions with regard to knowledge valorisation process: current state, key principles and suggestions for improvement

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*connectedthinking

PRICEWATERHOUSECOOPERS

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Preface

Knowledge valorisation represents an important topic on the political agenda of the Netherlands. The innovation goals of the Lisbon Agenda and the international competitive position of the Netherlands, as well as its attractiveness to foreign investors, make knowledge valorisation a policy priority. Good governance can help in managing this challenging task. For this purpose, there is a clear need to develop a shared vision on good governance among actors involved in the process.

With this report we intend to share an understanding of what good governance for knowledge institutions actually means with regard to knowledge valorisation, by bringing together perspectives of multiple actors involved in the process. We gathered opinions of representatives from the Dutch government, businesses and academia in order to construct a comprehensive picture. The study examined the current state of good governance of knowledge valorisation activities in the Netherlands, as well as possible areas for its improvement. We derived the five key principles from our findings thus providing knowledge institutions with the overall guidelines on good governance of knowledge valorisation.

There is no one best way to do things. Different backgrounds of knowledge institutions (e.g. technical universities, UMCs etc.) and their various specific objectives require different organisational approaches. These differences should be treasured, and standardisation is therefore out of question. Each university or medical center has to find its own specific pathway, its own specific configuration of how to change in this chaotic and extremely unpredictable environment. At the same time, it is important to avoid that knowledge institutions struggle with the same issues autonomously thus constantly trying to reinvent the wheel. We have therefore extracted the principles that represent the essence of good governance in general terms and can be adjusted to different contexts and needs. The principles were developed based on the analysis of the current situation in The Netherlands, and changes in the environment should be taken into account when applying these principles in the future.

Remember that besides various desirable benefits, there are also multiple challenges on the way towards effective knowledge valorisation. So stay in control while unlocking the knowledge!

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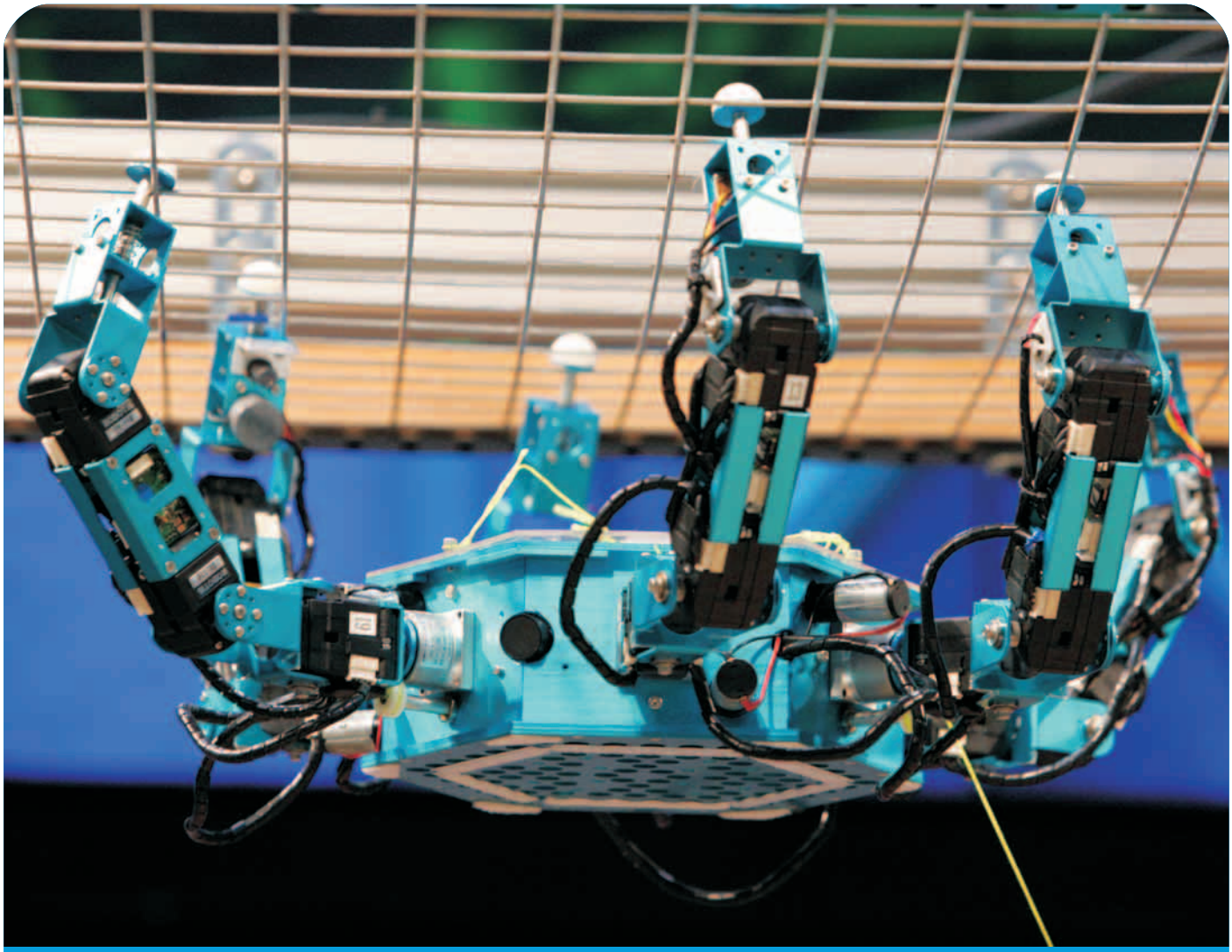
TECHNO PARTNER

Alles begint met pionieren



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Executive Summary

Knowledge valorisation is an important item on the political agenda in The Netherlands, specifically one of the eight policy pillars in the coalition agreement of the cabinet Balkenende-IV. It is a relatively new field, which requires that knowledge institutions enter the economic system directly and function there as a business partner. In order to be able to manage this challenging task, a strong governance structure needs to be put in place. However no standards have been set for good governance in this field so far.

This study examines the current state of good governance of knowledge valorisation activities in Dutch universities, extracts key principles of good governance and detects areas for improvement for both knowledge institutions and policy makers. The current study is purely of a practical nature and intends to serve as a basis for discussion between university representatives, entrepreneurs and policy makers regarding the issues of good governance of knowledge institutions in the field of knowledge valorisation.

The findings show that Dutch universities and university medical centres (UMCs) are still at the beginning of a learning curve. Knowledge institutions try to develop guidelines and procedures for the governance of their knowledge valorisation activities themselves or in collaborative alliances (e.g. VSNU, 3TU and NFU). Inevitably, different universities go about this in different ways. Some focus on profit goals with their knowledge valorisation activities, others consider top research to be paramount and only engage in knowledge valorisation when it supports basic research. While strategies and approaches differ, all universities and UMCs we interviewed are involved in knowledge valorisation and have undertaken numerous initiatives to continuously improve their results in the field.

There is no ‘one size fits all’ approach towards good governance of knowledge valorisation. However, the study revealed the five key principles which can be universally applied by every knowledge institution engaging in the process. The principles are of a guiding nature, and can be adjusted to different contexts and needs. The five key principles are as follows:

(1) Effectiveness: Good governance means focusing on the university’s purpose and creating value for the Dutch (or European) economy.
Incorporating knowledge valorisation into a university’s vision, strategy and action plan; considering value making instead of profit making a primary objective; as well as reducing inconsistency of knowledge valorisation-related objectives within the university to a minimum are all means to increase effectiveness.

(2) Transparency: Good governance means transparency of information related to existing knowledge valorisation-related conditions, decisions and actions.
Sufficient information should be given on the knowledge valorisation management of the university to various stakeholder groups: the government, internal staff and students, partner organisations, as well as the general public.

(3) Accountability: Good governance means equal accountability to the society as well as to the individuals involved.
This includes understanding of multiple accountability relationships to the government, the staff, the researchers/entrepreneurs, the market, as well as the general public.

(4) Efficiency: Good governance means stimulation, measuring and monitoring of knowledge valorisation-related performance.
First, the university should have a set of indicators in place to measure the knowledge valorisation-related performance. Second, a monitoring system should be established, which provides data on the knowledge valorisation-related performance of the institution against its planned strategies and operational targets. Finally, an incentive system should be applied to stimulate both process facilitators (professors, business developers) as well as researchers/entrepreneurs to engage in knowledge valorisation activities.

(5) Good governance means constant interaction with society.
This principle implies having a strong system of agreements and the post of Knowledge Valorisation Ombudsman in place; responding to the needs of society; cooperating closely with the region (municipalities) and contributing to its development are ways of interacting with society. Other elements refer to having a special committee in place advising the Board in cases of conflicts of interest and ensuring that everybody with relevant initiatives can participate in knowledge valorisation activities.

A number of suggestions for improvement were detected during the study, which address both knowledge institutions and policy makers. Based on these suggestions, a discussion was organised with representatives of knowledge institutions, the business sector and the Dutch government.

Combining the outcomes of the discussion with the findings from the interviews has resulted in five implications for policies at the level of the universities. These policy implications are:

(1) Direct the university towards value making instead of profit making by using different organisational modes and models.
(2) Be transparent towards partner organisations and constantly exchange knowledge and experience.
(3) Strictly define internal accountability relationships. In order to have an unambiguous overview of the process, as well as to secure positions of internal actors, the university has to be clear about who is responsible for what with regard to knowledge valorisation.
(4) Differentiate selection indicators for different fields, apply long-term oriented indicators of success, and think broader than tangible results of knowledge valorisation.
(5) Collaborate with as many external partners as possible. Knowledge valorisation is a complex process in which a knowledge institution is one of the multiple actors involved.

1 Introduction

1.01 Knowledge valorisation is an important theme for Dutch universities. Research has demonstrated that although much new knowledge is developed in the Netherlands, the degree of innovation in the Dutch economy is lagging behind other countries[1][2], as "exploitation of research results is inadequate"[3]. Several initiatives have been put forward to solve this "knowledge paradox" and the newly installed cabinet Balkenende-IV is energetically addressing the issue of knowledge valorisation[4]. In our 2006 report on stimulating knowledge valorisation, we defined knowledge valorisation as "capturing value of knowledge and exploiting it by means of creating a new company (spin-off) or by licensing the technology out".[5]

1.02 The relative newness of knowledge valorisation as an activity for Dutch universities results in several characteristics:

- In this new field *"everything is still under construction"*. (Robert Al, Erasmus MC)
- There are many new structures and organisational roles in place: university holdings, Technology Transfer Offices (TTOs), Knowledge and Science parks, internal facilitating departments.
- Knowledge valorisation activities are undertaken in a chaotic and unpredictable environment: *"Knowledge valorisation differs from research and education only in terms of the process, not the principles of good governance. Knowledge valorisation is more dynamic, more impulsive and more ad-hoc. There is no one-size-fits-all structure."* (Robert Al, Erasmus MC)
- Universities are faced with fluctuating attention from the government's side. There is "a tendency towards a 'committee culture' in which publication of strategic documents receives more attention than actual implementation"[6].
- Knowledge valorisation requires the university to enter the economic system directly and function as a business partner.

1.03 Knowledge valorisation is an important item on the political agenda in the Netherlands. Dutch universities and other knowledge institutions are increasingly involved in knowledge valorisation activities, but so far no standards have been set for good governance in this field. This report aims to create an understanding of the good governance of knowledge valorisation activities of universities and to create an inventory of the visions and opinions of university professionals in this field. Hence, our research question for this report is: *"What is the current state of good governance of knowledge valorisation activities in Dutch universities and what do knowledge valorisation professionals think should change?"*

1 Ministerie van Economische Zaken (2003), Innovatiebrief deel II, Analyse van de Nederlandse Innovatiepositie.
2 A full list of sources can be found in Appendix B at the end of this report.
3 European Commission (2006), European Innovation Progress Report 2006, Trendchart, p. 181
4 A clear example is the 2007 congress "De kunst van verzilveren" where the declaration "Samenwerken aan valorisatie: kennis verzilveren" was signed to stimulate cooperation in knowledge valorisation.
5 Nell, L.., B. van der Torren and K. Dervojeda (2006), Boosting the knowledge valorisation process: Putting plans into action, The Hague: PricewaterhouseCoopers and TechnoPartner, p. 15.
6 European Commission (2006), European Innovation Progress Report 2006, Trendchart, p. 182

1.04 The funnel in Figure 1 demonstrates how we have conducted our study. In the first stage we conducted desk research to gather background information on the topics of knowledge valorisation and good governance. The second stage conducted of comparing good governance in the commercial sector with good governance in the public sector and identifying differences that are relevant to this study. The third stages focused on good governance in the public sector, while the fourth and fifth stages narrowed down our scope to good governance for knowledge institutions with particular attention for the knowledge valorisation process.

1.05 In order to answer our research question, we have interviewed knowledge valorisation professionals at nine Dutch universities. The findings from these interviews, which lead to the consolidation of visions, opinions and statements that comes out at the bottom of the funnel, are in Chapter 3.

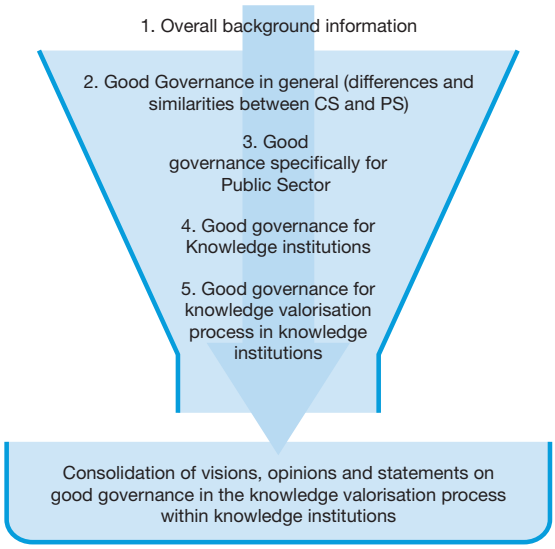

Figure 1: Overview of the study

1.06 The findings from the interviews were discussed with representatives from knowledge institutions, the business sector and the Dutch government after an introduction by governance expert Jaap van Manen. The outcomes of this discussion are in Chapter 4. Subsequently, policy implications were formulated and laid down in Chapter 5.

Good governance in the public sector

1.07 "How public money is spent and the quality of services it provides is critically important to us all as users of services and as taxpayers. Because of this we all need governance of our public services to be of a high standard. Good governance leads to good management, good performance, good stewardship of public money, good public engagement and, ultimately, good outcomes. … It is perhaps surprising that there is no common code for public service governance to provide guidance across the complex and diverse world of public services, which are provided by the public sector and a range of other agencies."

1.08 The above introduction is a citation from the UK *Good Governance Standard for Public Services*[7]. Since the publication of the Dutch Corporate Governance Code by the Tabaksblat-committee in 2003 good governance has been in the spotlight both in the commercial and public sector. Over the past few years governance codes were published domestically and internationally. International examples are the United Nations document *What is good governance?*[8] as well as the UK *Standard* cited above, while in the Netherlands codes were published in the areas of Charity Organisations and HBO institutions (higher vocational training institutions). In 2007 the VSNU, the Dutch association of universities, published its Code Goed Bestuur Universiteiten[9] (Code of good governance for universities). Most Dutch universities have some type of good governance code in place.

7 The Independent Commission for Good Governance in Public Services, 2004, *The Good Governance Standard for Public Services*, London: OPM and CIPFA.
8 United Nations, 2007, *What is good governance?*, http://www.unescap.org/huset/gg/governance.htm
9 VSNU, 2007, *Code goed bestuur universiteiten 2007*, http://www.vsnu.nl/web/p?DOWNLOAD.code_goed_bestuur_universiteiten_2007&id=88765

Good governance in knowledge valorisation

1.09 Figure 2 displays a model of the actors involved in knowledge valorisation within the university organisation. These are, among others, the university Board, business developers and the researchers who start a business.

Actors in the process of knowledge valorisation

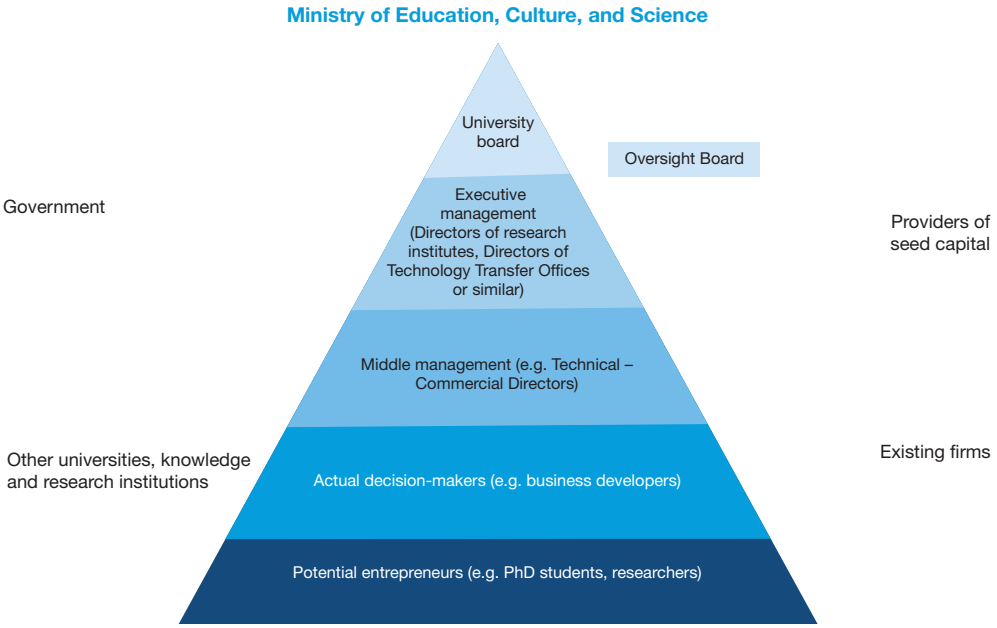

Figure 2: Actors in the process of knowledge valorisation

1.10 In Chapter 2 we will develop a model for addressing good governance of the knowledge valorisation activities of knowledge institutions. We will subsequently report the findings of our interviews with knowledge valorisation professionals in Chapter 3.

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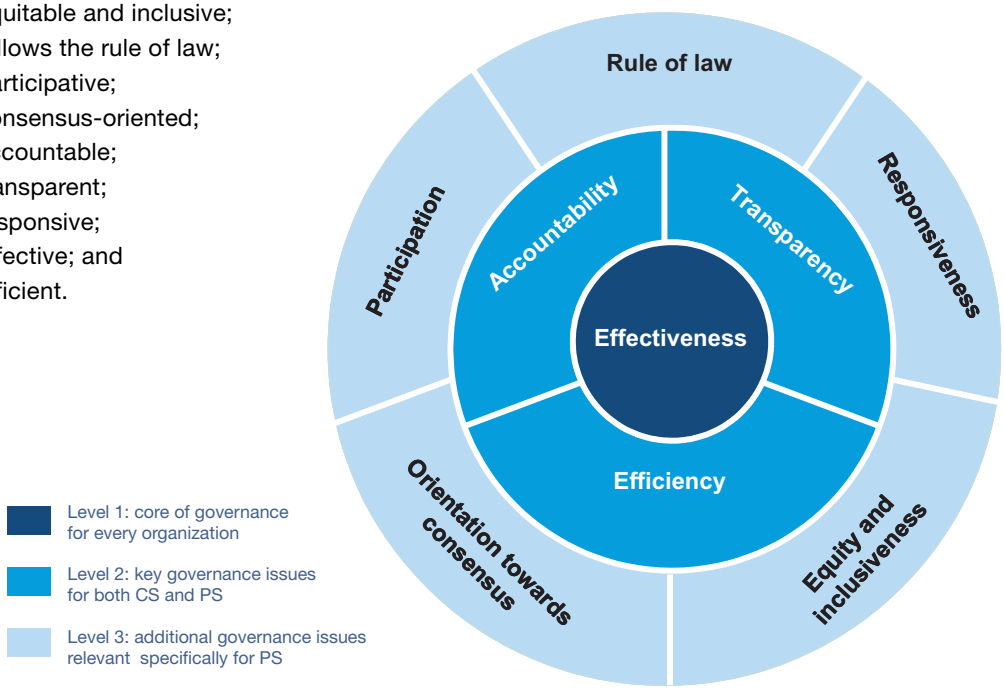
2 Conceptual Framework

2.01 Knowledge valorisation has thus far been conducted in a relatively intransparent manner. It is not always clear whether and which procedures are followed in selecting private parties that are allowed to exploit publicly financed research outcomes. The VSNU code mentioned above does not include references to the topic of knowledge valorisation. The governance model put forward in this chapter is a first attempt to fill this transparency gap.

2.02 As a basis for the model, we have used nine major characteristics of good governance proposed by the United Nations[10]:

1. equitable and inclusive;
2. follows the rule of law;
3. participative;
4. consensus-oriented;
5. accountable;
6. transparent;
7. responsive;
8. effective; and
9. efficient.



2.03 We have grouped nine elements of good governance in three levels, as represented in Figure 3. The three levels reflect the importance of the different elements in specific types of organisations. The first level, in dark blue, is relevant to good governance in *all types* of organisations. The second level is relevant to organisations in *both* the commercial sector (CS) and the public sector (PS). The third level, in light blue, applies *only* to public sector organisations. As the large majority of Dutch universities are public sector organisations, all three levels apply.

10 United Nations, 2007, *What is good governance?*, http://www.unescap.org/huset/gg/governance.htm

2.04 Effectiveness is at the centre of the figure as it is essential to any governance system to achieve organisational objectives. Therefore, it is also on the *first level* of the model: without Effectiveness, a system of governance cannot add value to an organisation. Good governance means focusing on the organisation's purpose and outcomes for citizens and service users and asking questions like: "What is the optimum level and nature of involvement in strategic plans and implementation processes?". In operational terms Effectiveness comes down to formulating a clear purpose of an organization and being clear about the functions of the board.

2.05 On the *second level* of the model are the elements of Accountability, Transparency and Efficiency, as these elements are relevant to organisations in both the commercial sector and the public sector. For example, these elements are also found in the Dutch Corporate Governance Code, which is a guideline for good governance in the commercial sector.

2.06 Accountability focuses on the relationships to stakeholders on whose behalf an organisation works. The accountability of boards and their organisations is ultimately to the public on whose behalf they work. In practice, most governing bodies have multiple accountability relationships with others who have the authority to represent the public interest, such as government and ministers, parliament, independent regulators and perhaps partner agencies, as well as accountability relationships directly to the public and the users of products and services. This means being clear about relationships between the board and the public, understanding formal and informal accountability relationships, engaging effectively with institutional stakeholders, and taking an active and planned approach to responsibility to staff.

2.07 Transparency involves the openness of an organisation when it comes to sharing information about its functioning with others. In practice this means sharing information related to existing conditions, decisions and actions that provides society as a whole with sufficient information to judge the management of a university. This implies being rigorous and transparent about how decisions are taken, having and using good quality information, advice and support and making sure that an effective risk management system is in operation.

2.08 The third element on the second level of the model is Efficiency, which involves the performance in quantitative terms of professionals in organisations, including motivation and monitoring issues. Executive performance is best motivated using compensation approaches that are consistent with the organisational values, objectives and strategy and best measured and monitored through appropriate oversight by senior management.

2.09 The *third level* of the model includes those elements that are specifically relevant to organisations in the public sector. These are Rule of Law, Responsiveness, Equity and Inclusiveness, Orientation towards Consensus and Participation.

2.10 Rule of Law addresses issues of regulation and inspection that are exclusively relevant to public sector organisations. Public sector organisations are regulated and inspected by a number of public sector bodies. The challenge for governing bodies is to develop a relationship with regulators based on a shared interest in effective governance and services.

2.11 Responsiveness is the degree in which public sector organisations respond to present and future societal needs. Being open and responsive to society, as well as balancing its present and future needs are challenges to all public sector organisations, but particularly to knowledge institutions that operate in the field of knowledge valorisation with its many and diverse stakeholders.

2.12 Equity and Inclusiveness addresses the extent to which individuals within and outside a public sector organisation feel that their wellbeing is enhanced by its activities. In the case of knowledge institutions involved in knowledge valorisation this includes business partners, individual researchers and research departments, but also people less involved with knowledge valorisation such as students, the government or tax payers.

2.13 Orientation towards Consensus reflects that public sector organisations operate in a landscape of conflicting interests that they need to address. There is a clear need of mediation of different interests in society by public sector organisations in order to reach a broad consensus in what is the best interest for the whole community and how this can be achieved. Taking an active and planned approach to dialogue with the public is important in this respect.

2.14 Finally, Participation implies that no specific groups are excluded from participating in the activities of public sector organisations. This entails ensuring the opportunity for everybody to participate in knowledge valorisation (men and women, local citizens and foreigners, students and professors, academics and entrepreneurs et cetera).

2.15 The descriptions above are tailored towards knowledge institutions that undertake knowledge valorisation activities, but the model is applicable to other public sector activities and organisations as well.

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3 Interview Findings

3.01 All the interviewees admit that knowledge valorisation is a relatively new field, where *"everything is still under construction"* (Robert Al, Erasmus MC). As emphasised by one interviewee, *"We are still in the beginning of the learning curve"* (Kees Eijkel, Universiteit Twente). The interviewees describe governance of knowledge valorisation as based on codes of conduct, rules and procedures. The relative priority of knowledge valorisation activities varies between universities: while some interviewees give knowledge valorisation a very high priority, others indicate that for their organisation it only comes after research, education and, in case of some of the university medical centres, patient care. Another difference is that while several interviewees indicated that they would like to have more government funding for knowledge valorisation activities, others explicitly state that public money should not be used in the development of commercial products. Although the field of knowledge valorisation is still in development, the interviewees have presented us with many insights and ideas of how good governance should take shape in the field of knowledge valorisation.

3.02 The following five principles of good governance of knowledge valorisation were derived as a result of the interviews. These principles are linked to different elements of the good governance model presented in Chapter 2.

(1) Effectiveness: Good governance means focusing on the university's purpose and creating value for the Dutch (European) economy:
(1.1) incorporating knowledge valorisation into the university's vision, strategy and action plan;
(1.2) considering value making instead of profit making a primary objective;
(1.3) ensuring active communication of knowledge valorisation-related university's objectives both internally and externally (creating a communication plan);
(1.4) reducing inconsistency of knowledge valorisation-related objectives within the university to a minimum.

(2) Transparency: Good governance means transparency of information related to existing knowledge valorisation-related conditions, decisions and actions:
(2.1) providing the government with sufficient information to judge on the knowledge valorisation management of the university (different types of reporting);
(2.2) providing sufficient information for internal staff and students to judge the knowledge valorisation management of the university (e.g. via internal magazines/newspapers, website, presentations, workshops, training sessions and other knowledge valorisation-related events like business plan competitions);
(2.3) giving partner organisations (alumni networks, investor/business angel networks) sufficient information to judge on the knowledge valorisation management of the university;
(2.4) giving the general public sufficient information to judge the knowledge valorisation management of the university.

(3) Accountability: Good governance means equal accountability to society as well as to the individuals involved:
(3.1) understanding accountability to the government;
(3.2) understanding accountability to the staff;
(3.3) understanding accountability to the researchers/entrepreneurs ("people who take the risk to start a business");

(3.4) understanding accountability to the market;
(3.5) understanding accountability to the general public.

(4) Efficiency: Good governance means stimulation, measuring and monitoring of knowledge valorisation-related performance:
(4.1) having a set of indicators in place allowing to measure the knowledge valorisation-related performance (number of patents per year, number of spin-offs per year, number of jobs created, number of students taught about entrepreneurship, number of ties with (external) business partners, et cetera);
(4.2) establishing a monitoring system which provides data on the knowledge valorisation-related performance of the institution against its planned strategies and operational targets;
(4.3) applying incentive system to stimulate both process facilitators (professors, business developers) as well as researchers/entrepreneurs to engage in knowledge valorisation activities.

(5) Good governance means constant interaction with society:
(5.1) *Rule of Law*: having a strong system of agreements and the position of Knowledge Valorisation Ombudsman in place;
(5.2) *Responsiveness*: responding to the needs of society;
(5.3) *Equity and Inclusiveness*: cooperating closely with the region (municipalities) and contributing to its development;
(5.4) *Orientation towards Consensus*: having a special committee in place advising the Board in cases of conflicts of interest with commercial funding bodies, and a system of regular reporting on conflicts of interest at all levels;
(5.5) *Participation*: ensuring that everybody with relevant initiatives can participate in knowledge valorisation activities.

3.03 Below we elaborate on each of these principles and their sub-principles.

1 Effectiveness: Good governance means focusing on the university's purpose and creating value for the Dutch (European) economy

1.1 Incorporating knowledge valorisation into the university's vision, strategy and action plan

According to all interviewees, making knowledge valorisation part of a university's agenda implies embedding it into the university strategy and action plans. Incorporating knowledge valorisation into a university's vision should lead to a set of qualitative and quantitative objectives and a list of actions to take, supplemented by procedures, mandates and rules to be followed. The interviewees emphasise that the university should make sure there is a clear statement of knowledge valorisation-related purpose and that is serves as a basis for the planning and distribution of resources.

1.2 Considering value making instead of profit making a primary objective

A diversity of opinions is found with regard to the nature of the effectiveness in the field of knowledge valorisation. As expressed by some interviewees, since the profit is embedded in the definition of entrepreneurship, it would not be correct to proclaim that it is not an issue in the field of knowledge valorisation. However, *"we will only start getting a real return after 10-20 years."* (Amandus Lundqvist, TU Eindhoven) As emphasised by other interviewees, while optimisation of funds is important, profit is still not a primary objective in this respect. Rather than profit, effectiveness means sustainability, i.e. improving the wealth of the region, the country, Europe and the world as a whole. One interviewee voiced the middle course: *"We regard knowledge valorisation, bringing knowledge to society, as the fourth public task (in addition to patient care, research and education). We don't mind earning some money while fulfilling this task."* (Frans van

der Meché, Erasmus MC) The conclusion then, as formulated by one of the interviewees, is that good governance means keeping a university a public institution while enabling it to play a market-oriented game.

When it comes to indicators of Effectiveness in knowledge valorisation, all interviewees mention the number of spin-offs created per year, although this is not always the most important indicator for them. Some universities include long-term aspects in this goal (e.g. number of spin-offs surviving more than two years). Other examples mentioned by multiple interviewees are number of jobs created, number of students taught about entrepreneurship, number of patent applications per year and, interestingly, the reputation of the university and ties with (external) business partners. But: *"Our focus is on excellent research and education. And for commercialisation, excellence of results is also essential."* (Kees Eijkel, Universiteit Twente)

1.3 Ensuring active communication of knowledge valorisation-related university's objectives both internally and externally (creating communication plan)

A hallmark of good governance is active communication of knowledge valorisation-related values and objectives to both internal and external actors. As expressed by most of the interviewees, this begins with a clear communication plan and is followed by a range of communication activities like internal workshops and presentations, brochures and magazines, discussions and publishing of success stories. Good governance implies having a structured approach towards communication. An organisational code of conduct is one of the means to disseminate values and objectives. *"We have developed our own AMC Research Code (2001, 2nd edition 2004) to preserve the independence and scientific integrity of researchers. The Research Code has become a standard part of the first joint research training course that all PhD students are expected to take. The Code therefore works on day-to-day basis in the AMC's research practice. Every researcher at the AMC should be aware of the legal obligations governing research" (*Louise Gunning-Schepers, AMC).

1.4 Reducing inconsistency of knowledge valorisation-related objectives within the university to the minimum

Most of the interviewees recognise the existence of inconsistencies with regard to knowledge valorisation-related objectives at different levels. Some contradictions pop up when comparing objectives of the university and its research institutes or the university and individual researchers. As expressed by one of the interviewees, *"Knowledge valorisation is a part of Europe's, the country's and the university's agenda, but it is not yet embedded into individual agendas."* (Amandus Lundqvist, TU Eindhoven) Since these contradictions jeopardise the effectiveness of the whole system, there is a need for the university to align the objectives as much as possible. As expressed by some interviewees, this can be achieved through active communication of knowledge valorisation-related objectives at all levels and designing effective stimulation systems.

2 Transparency: Good governance means transparency of information related to knowledge valorisation-related conditions, decisions and actions

All interviewees indicate that they pro-actively produce documentation to make internal and external stakeholders aware of developments in knowledge valorisation. *"This is just a natural thing. You simply have to be transparent. It doesn't work otherwise."* (Martin Kropff, Wageningen Universiteit en Researchcentrum). Several interviewees mention that they have regular meetings with stakeholders. All interviewees feel that they do enough to be transparent. In general, no specifications of individual agreements with businesses are made public. One interviewee mentions that *"The basic guideline for the individual scientist is that everything you do should be printable in tomorrow's newspaper."* (Yvonne van Rooy, Universiteit Utrecht) The government and universities' own staff and students are provided with the most information, but the general public is mostly not considered an important stakeholder in knowledge valorisation. One interviewee mentions that for the

UMCs it is important to be transparent about transactions with suppliers of medical and research equipment who offer research funds together with equipment.

No quantitative indicators for transparency are used. Several interviewees indicate that others, inside or outside their organisation, have agreed that they are sufficiently transparent. Several suggestions for improving Transparency are mentioned: improving communication further and discussing possible conflicts of interest internally. A suggestion for researchers in UMCs is keeping a laboratory notebook. Few interviewees mention challenges in improving Transparency. The few challenges mentioned relate to integrity and incentives at the level of the individual researcher.

2.1 Providing the government with sufficient information to judge on the knowledge valorisation management of the university (different types of reporting)

As specified by one of the interviewees, the information the university should share with the government covers three key issues: (1) the position of the university in the value chain; (2) the facts and figures demonstrating the results of the university's efforts with regard to knowledge valorisation (including indicators for effectiveness and efficiency of the university's operations and policies); and (3) the university's policy towards personal involvement in knowledge valorisation-related deals through various models like consultancy and shareholdership. A number of interviewees stress that this kind of information can be communicated through annual reports and strategic plans. In individual cases events, project proposals and reports on knowledge valorisation-related grants were also mentioned as possible means of communication.

2.2 Providing sufficient information for internal staff and students to judge the knowledge valorisation management of the university (via internal magazines/newspapers, website, presentations, workshops, training sessions and other knowledge valorisation-related events like business plan competitions)

All interviewees agree that internal transparency is crucial for good governance. However a variety of opinions can be observed with regard to the type of information to be shared internally, as well as the most appropriate means of communication. One of the interviewees emphasises that it is vital to disseminate the results of knowledge valorisation performance in the form of showcases. Other interviewees mention development of internal procedures and guidelines. The most popular means of internal communication mentioned by interviewees refer to regular events, manuals, website and newsletters, as well annual reports and strategic plans. Some interviewees also mention posters, e-mail, workshop and meetings, presentations and personnel magazines as possible means of communication.

2.3 Giving partner organisations (alumni networks, investor/business angel networks) sufficient information to judge on the knowledge valorisation management of the university

As emphasised by one of the interviewees, the nature of the information to be shared with partner organizations refers to the overall vision and position of the university in the value chain. Second, this also includes the role the university has to portray when entering negotiations and deals with commercial players. The most popular means of communication mentioned by the interviewees in this respect refer to annual reports, meetings and presentations, as well as joint activities supported by the relevant internal players.

2.4 Giving the general public sufficient information to judge the knowledge valorisation management of the university

Good governance implies keeping the general public informed about the three key issues. First, the vision of the university with regard to knowledge valorisation should be communicated, drawing a clear line around the activities in which the university wants to be actively involved. Second, facts and figures representing results of the university's efforts have to be disseminated. Finally, the university should clarify its policy on personal involvement in knowledge valorisation-related deals. As possible means of communication, the interviewees

mentioned press releases, pro-active events (e.g. open days), as well as annual reports, websites and showcases.

3 Accountability: Good governance means equal accountability to society as well as to the individuals involved

Most interviewees mention the government and oversight boards as stakeholders they are accountable to. Interestingly, “the market” and “people who take the risk to start a business” are both mentioned by several interviewees. The information reported to these stakeholders is on the one hand financial in nature, but on the other hand policies, conditions and rules also play an important role when communicating to internal staff as well as the market. One university explicitly reports to multiple stakeholders about the character/role they intend to portray when entering into negotiations with commercial partners.

Very few universities/UMCs have indicators of Accountability. When applied, indicators are provided by external auditors. When asked about possible improvements in Accountability, the tendency among the answers is that the systems are in place and now it is up to the people to do it. One interviewee mentions an integrated management system as an improvement. No challenges to improving Accountability are mentioned by the interviewees.

3.1 Understanding accountability to the government

As emphasised by several interviewees, traditionally the government has been considered the most important stakeholder in terms of accountability relationships. As the main aspect of accountability the interviewees mention true and fair use of budgets to be spent on research that could result in valorised knowledge. This implies reporting on the results of knowledge valorisation activities, as well as on government grants/financing. As specified by one of the interviewees, accountability to the government includes fiscal accountability, performance accountability (key performance indicators), as well as insuring that inventions are effectively taken to the market and the added value is created.

3.2 Understanding accountability to the staff

The accountability to the staff implies the ability to defend the choices that were made during the process of knowledge valorisation, i.e. why certain milestones, amounts and percentages were chosen, as expressed by one interviewee. Other interviewees specify that this aspect includes ensuring effective transfer to the market, ensuring adequate financial return obtained for institution, as well as ensuring that core teaching and research missions of the university are not jeopardised. Clear policies and rules are also mentioned as important elements of accountability to the staff.

3.3 Understanding accountability to the researchers/entrepreneurs (“people who take the risk to start a business”)

Similar to the staff, accountability to the researchers/entrepreneurs involves the ability to defend the choices made for negotiation, with only difference that this person ‘sits on the other side of the table’. As emphasised by one of the interviewees, one should be able to defend one’s assumptions and demands. Clear policies and clear contracts and conditions on IP transfer are named as the most relevant elements in this respect.

3.4 Understanding accountability to the market

Several interviewees emphasise the importance of accountability to the market, since relationships with the market have a direct influence on the number of knowledge valorisation-related deals the university can close. Most important accountability aspects mentioned by interviewees refer to ensuring effective transfer to the market, as well as developing clear contracts and conditions on IP transfer.

3.5 Understanding accountability to the general public

Since the university is a public institution, it is primarily accountable to the public. As specified by one of the interviewees, the result of knowledge valorisation that the general public mainly looks at represents the way the revenue is distributed. According to the interviewee, distribution of revenues that are meant for the future research or organization as a whole are taken for granted, while redirecting some money to researchers for their private use often results in a negative reaction of the society. Therefore the university should clearly communicate the reason why an individual receives a certain amount of money.

4 Efficiency: Good governance means stimulation, measuring and monitoring of knowledge valorisation-related performance

4.1 Having a set of indicators in place allowing to measure the knowledge valorisation-related performance (number of patents per year, number of spin-offs per year, number of jobs created, number of students taught about entrepreneurship, number of ties with (external) business partners et cetera)

There are vast differences in the use of indicators of Efficiency in universities. Some interviewees respond that they have indicators for maintaining a good portfolio of participations in spin-offs and number of patents at the level of a research group. Others run their Technology Transfer Office based on many business-like indicators. Overall five basic groups of indicators are mentioned by the interviewees: (1) the number of relationships the university has with companies; (2) economic value – generated income; (3) the number of jobs created; (4) the number of spin-offs created; and (5) indicators related to the university's reputation. Some interviewees indicate however that they do not use Efficiency indicators at all.

4.2 Establishing a monitoring system which provides data on the knowledge valorisation-related performance of the institution against its planned strategies and operational targets

Regular monitoring of knowledge valorisation-related results should be maintained at the centralised level. The data should include the efficiency indicators outlined above. The most popular groups of indicators monitored by the university, as mentioned by interviewees, refer to the number of registered patents and created spin-offs. The data should be gathered from all the faculties and/or research institutes involved in knowledge valorisation activities. As emphasised by one of the interviewees, monitoring should be combined with the institutional research and data should be stored in a centralised database thus providing an overview of the overall knowledge valorisation-related performance.

All the universities and UMCs visited have a system in place to monitor knowledge valorisation activities. Interestingly, in some cases knowledge valorisation monitoring/TTO is clearly an embedded part of the university organisation, while in other cases universities explicitly want to keep it somewhat isolated from the 'university bureaucracy'.

4.3 Applying incentive system to stimulate both process facilitators (professors, business developers) as well as researchers/entrepreneurs to engage in knowledge valorisation activities

Several interviewees mention the rewards researchers get for inventions. The universities differ in terms of the amount of revenues from inventions they award to individual researchers. The technical universities (TU Delft, TU Eindhoven and Universiteit Twente) have agreed on distributing revenues 1/3 – 1/3 – 1/3 across the individual researcher, the research department in which the invention was made and the university organisation. The UMCs (AMC, Erasmus MC and VUMC) prefer a 20% – 40% – 40% distribution, thus awarding a relatively smaller part of the revenues to the individual researcher. Some interviewees mention organisational aspects (research/support staff ratio, double functions in committees to limit number of people involved). One UMC works with finders, founders and binders shares to ensure that staff involved in the commercialisation of an invention will remain dedicated to the spin-off company. One interviewee suggests

working together at national level and organising central direction for knowledge valorisation in UMCs. As emphasised by one of the interviewees, group incentives are more important than individual ones since teamwork is crucial.

5 Good governance means constant interaction with society

5.1 Rule of Law: Having a strong system of agreements and the post of Knowledge Valorisation Ombudsman in place

According to most interviewees, a strong system of agreements should be put in place. Agreements should be checked by various management levels and legal people, and should strictly define expectations and obligations of both the university and a researcher/entrepreneur. *"When scientists take on external entrepreneurial jobs this needs to be discussed openly and formerly approved. Our experience shows that this affects positively the performance. However if there is a negative effect on the scientific and educational performance this can be measured and addressed."* (Marco Waas, TU Delft) One interviewee mentions that it is sometimes hard to distinguish between the researcher and the entrepreneur when they are the same person. The CAO (collective labour agreement) does not provide solutions for this. In this respect there is still a 'cultural difference' between the university environment and the business world: *"In Philips you wouldn't dream to use the corporate knowledge for your own business."* (Kees Eijkel, Unviersiteit Twente) Participation agreements have to be always arranged through the notary. For knowledge valorisation activities, there is also a need to create the post of Knowledge Valorisation Ombudsman and establish a procedure for reporting suspected fraud and improper conduct of knowledge valorisation activities. The whole procedure of how to deal with fraud has to be established. Some UMCs already practice this in the field of research.

5.2 Responsiveness: Responding to the needs of society ('Science for Impact' approach)

As emphasised by most of the interviewees, bringing knowledge to humanity and improving the quality of life is essential. The added value of the knowledge created within the university gives the researchers an intrinsic motivation. The interviewees mention a number of examples of fields in which their universities respond to the needs of society like CO_2 reduction, tissue engineering, production of healthier food, building cooperation in Africa. Wageningen University and Research Centre calls this *"Science for Impact"*.

5.3 Equity and Inclusiveness: Cooperating closely with the region (municipalities) and contributing into its development

Cooperation with the region implies close cooperation with municipalities, building science parks and engaging in other similar initiatives. Partnerships with other Dutch universities were often mentioned as an important aspect of cooperation. Some universities/UMCs work with international partners/stakeholders. One interviewee mentions the university alumni as a source of knowledge, contacts and new opportunities. On another note regarding the embedding of the university in the community, *"We are also a business and an employer and as such should remain interesting [for future employees]."* (Frans van der Meché, Erasmus MC)

5.4 Orientation towards Consensus: Having a special committee in place advising the Board in cases of conflicts of interest with commercial funding bodies, and a system of regular reporting on conflicts of interest at all levels

As confirmed by most of the interviewees, conflicts of interest constantly accompany knowledge valorisation activities. One UMC has developed a checklist which may assist in avoiding potential conflicts (points which should be taken into account when drafting research contracts) regarding research activities. Similar checklists could be developed listing points that should be taken into account when drafting knowledge valorisation agreements. Another good practice from the research field refers to a committee which advises the Executive Board on the best solution in cases of conflicts of interest. As stated in the AMC Code, researchers/entrepreneurs then will be "required to report annually to the Business Manager of their division

whether they might be caught up in a conflict of interest or are exposed to potentially conflicting interests outside the institute, and at any other time when they come up against a possible conflict of interest. The Business Manager will inform the head of the department of all such notifications".[11]

5.5 Participation: Ensuring that everybody with relevant initiatives can participate in knowledge valorisation activities

Universities/UMCs are open to internal/external organisations/people approaching them for knowledge valorisation, but these people should contribute something substantial and the proposed activities should fit the area of expertise of the university/UMC. One interviewee mentioned that although efforts are made to attract more women to knowledge valorisation, the natural sciences are still the realm of men. Also, researchers who want to engage in knowledge valorisation activities are expected to do this primarily at their own university.

Suggestions for improvement

3.04 A number of areas for improvement were detected during the study, which address both knowledge institutions and policy makers. The suggestions for improvement are preceded by the element (or elements) of good governance to which they are relevant.

Improvements at the university level

- Effectiveness: Awareness of knowledge valorisation can still be increased at the level of an individual researcher. One of the possible solutions here refers to the entrepreneurship courses for students and researchers, as well as to an active information policy using multiple means of communication (internal magazines/newspapers, website, presentations, workshops, training sessions and other knowledge valorisation-related events like business plan competitions).
- Effectiveness: The impact of knowledge valorisation on the public function of knowledge institutions should be evaluated in the future.
- Effectiveness/Efficiency: For researchers who want to make a selection from different possible knowledge valorisation activities, as a guideline "*there are seven reasons to engage in knowledge valorisation activities:*
  1. *It gives access to jobs for our students and PhDs.*
  2. *It makes the university more attractive to large industrial partners.*
  3. *It brings in European Union assignments and others without having to write proposals (because industrial partners will do this for the university).*
  4. *It creates a larger pool of useful infrastructure through facility sharing.*
  5. *It adds points of inspiration for researchers and leads to new ideas.*
  6. *It creates incentives and increases motivation for university employees.*
  7. *It's just fun!" (Kees Eijkel, Universiteit Twente)*
- Transparency: *"A future code of conduct could provide guidelines on how to improve your position with regard to dissemination of the information on the university's performance to society."* (Kees van Ast, Universiteit Twente)
- *Accountability/Efficiency*: Implementation of an integrated management information system for knowledge valorisation was suggested as an improvement.
- Efficiency: To improve efficiency, there is a need to be selective about which inventions to commercialise, and generating more patents with the same amount of people is desired. However, *"many research topics will not make it to a business case"* (Elmer Mulder, VUMC) *"Since we started we preach: 'Thou shalt consider patenting before publishing.' But not everything is patentable and if so, not exploitable. We will have to disappoint people."* (Ward Mosmuller, VUMC)

11 AMC (2004), "*Independence in scientific research; Research Code AMC*", second edition.

- Efficiency: The NFU could provide more efficiency indicators to its members.
- Rule of Law: Students do not have an employment contract with the university and are not bound to the rules that apply to researchers when it comes to knowledge valorisation. This may hamper future efficiency improvements and therefore needs to be solved.
- Equity and Inclusiveness: In terms of organisation, universities can choose between a model in which all knowledge valorisation tasks are internalised or a model in which knowledge valorisation is conducted in cooperation with many external partners, alumni, other universities and other organisations. When it comes to good governance, both organisational models present their own separate challenges.
- Equity and Inclusiveness/Participation: Knowledge valorisation may be approached with less of a local focus. Some interviewees indicate that international cooperation is inevitable if knowledge valorisation is really to take flight. However, there are limited facilities for researchers who want to cooperate in knowledge valorisation projects with colleagues in other Dutch universities, let alone universities abroad.

Improvements at the policy level

- Effectiveness: The government should provide more funding earmarked for knowledge valorisation, without trying to control the process to much (act more like a partner). Resources in the Netherlands are relatively quite low when compared to Scotland's Knowledge Transfer Grant or the US ASPIC funding. *"[In the field of knowledge valorisation] there are several initiatives aimed to help, but too little funding overall compared with, say the UK, to act to the same level of effectiveness."* (Bob Smailes, Leiden Universiteit) Investments in the knowledge valorisation infrastructure as well as the development of indicators are necessary.
- Effectiveness: The Ministry of Education, Culture and Sciences should provide more often its own vision and not follow the Ministries of Economic Affairs and Finance so much.
- Effectiveness/Rule of Law: Spin-offs should not be taxed until they are generating cash. When patents are commercialised, these small firms are essentially taxed based on valuations alone.
- Effectiveness/Rule of Law: When a university holds more than 50% of the shares of a spin-off company, this company will lose its SME status and will not be eligible to certain tax exemptions. Universities that want to be active shareholders will thus hurt their own spin-offs. Legislation changes could solve this issue.
- Rule of Law: Involvement of the Dutch government is not always appreciated, especially when new rules and regulations are implemented. There should be more consistency in the knowledge valorisation policies of the Dutch government; they should not change whenever a new cabinet is installed.

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4 Discussion findings

4.01 On 26 September 2007, the TechnoPartner Thema-lunch took place in Wassenaar, bringing together representatives of multiple parties involved in knowledge valorisation process. Delegates of the Dutch government, knowledge institutions, as well as business sector representatives were actively discussing the preliminary findings of the current report. The objective of the meeting was to exchange opinions and experiences regarding the issue of good governance of knowledge valorisation while sharing different perspectives on the same issue. An introduction of the topic was provided by PricewaterhouseCoopers' governance expert Jaap van Manen.

4.02 The discussion during the lunch was centered on three statements that were used as debate starters:

(1) Making profit should not be a decision criterion for universities involved in knowledge valorisation.

(2) The number of patents per year does not say anything about a university's success in the field of knowledge valorisation. Only long-term indicators (e.g. survival rate of spin-offs after five years) provide real information.

(3) Effective knowledge valorisation means co-operation with as many relevant (business and other) partners as possible.

4.03 The debate on these three statements was held at three tables and concludes to the following:

(1) Most participants agreed that profit is only one of the objectives of knowledge institutions, and not the primary one. In case of knowledge institutions, the term 'profit' should refer to social instead of commercial issues. The reference was made to the situation in the U.S., where, as expressed by one of the participants, only top-10 universities manage to earn money from knowledge valorisation, and the rest only invests. The general opinion thus was that knowledge institutions represent public bodies and their key objective should be oriented towards serving to the community instead of purely focusing on commercial interests. Universities should not be 'giving away' their knowledge below cost price, so the revenues should at least cover the costs of valorisation on a project basis. One participant however emphasised that there should always be a profitable exchange of knowledge for money. It was expressed that there are many more ways than patenting to make knowledge valorisation deals. For example, at UMC Radboud (Nijmegen) many different legal forms are used, for example an internal patent funds where researchers can get funding when applying for patents.

(2) Opinions varied regarding the second statement. While some participants feel that good and reliable indicators that track progress over time are essential to reporting on knowledge valorisation, other made it clear that they are not enthusiastic about reporting on different indicators, as this will hamper creativity in innovation processes. Some knowledge valorisation projects have a large non-financial value for society and inspire new ideas in people. Also prestigious projects will attract new students to a university. These examples show that indicators do not always suffice. The participants agreed that indicators should be customized for different research areas (technical/medical/other), because time horizons, maturity of the market and complexity of projects vary across domains. An improvement could be the definition of categories (e.g. monetary profit, reputation of the university, development of partnerships with businesses) to one or more of which a knowledge valorisation project should contribute to be viable.

(3) Partnerships are extremely important, especially when knowledge valorisation takes place in the form of a spin-off. Researcher-entrepreneurs often have difficulty getting customers for their new products, which is why bringing in partners with business experience (focused on selling skills) is essential. As an

additional point, the alumni network of Dutch universities should be cultivated much more. American universities tend to have alumni databases that are available to students and researchers, which can help develop business relationships, finding one's way in a new market or territory, or leveraging technical expertise.

4.04 In addition, some general issues took an important part in the discussion:

- As indicated by many participants, there is nothing wrong in the field of governance per se. The question which requires careful consideration refers to how to valorise more effectively. Answers to this question should be then translated into the internal policy implications for knowledge institutions.
- The participants also indicated that there should be a maximum amount to the revenues from a patent that can be awarded to an individual researcher in case the patent is licensed out. When the researcher is taking the entrepreneurial risk of exploiting the patent commercially, such a maximum should not apply.
- An additional comment was that it is important to remember that knowledge valorisation is a process involving multiple actors, both internal and external, and therefore governance should not be limited to internal processes only. More complex and comprehensive approach is needed to analyse knowledge valorisation.
- Finally, a concern was expressed by representatives of knowledge institutions regarding a possible shift from high trust towards a low-trust model of the Dutch government. As was explained by Renée Bergkamp, DG Innovation & Entrepreneurship of the Dutch Ministry of Economic Affairs, the diversity of approaches used by different knowledge institutions should be treasured. However it is important to avoid that knowledge institutions struggle with the same problems autonomously and try to reinvent the wheel all the time. This is where overall guidelines could be helpful.

5 Policy implications

5.01 Based on the results of our analysis complemented by input from the discussion, a number of policy implications were derived for knowledge institutions with regard to knowledge valorisation. These policy implications should be seen as general recommendations for the internal policies of knowledge institutions, and imply further adjustments to the specific context of a university or UMC.

(1) Direct the university towards value making instead of profit making by using different organisational modes and models.
Profit should be considered *one of* the objectives of knowledge institutions, but not the primary one, and should refer to the social instead of commercial issues. The social issues in this respect relate to bringing knowledge to the market and improving the quality of life overall. Development of a shared vision, strategy and action plan reflecting this concept is therefore essential, and should be performed at the centralised level of a knowledge institution followed by active dissemination to the decentralised level. In terms of organisation, knowledge valorisation activities may be undertaken by one or more internal departments of a university, the university organisation in collaboration with external partners or by a separate, private organisation that is fully or partly owned by the university. The latter mode has the advantage of creating a strict organisational separation between the public and commercial activities of a university, which also allows for close co-operation between the external valorisation entity and private investment funds.

(2) Be transparent towards partner organisations (e.g. university and UMC associations, alumni networks, investor/business angel networks) and constantly exchange knowledge and experience.
To benefit from an open system concept, knowledge institutions should switch from the approach of 'knowledge autonomies' towards constant exchange of knowledge and experience with partner organisations. The information to be shared includes lessons learned and best practices in the field of knowledge valorisation, thus allowing the partners to learn from each other and therefore constantly improve the overall performance. The activities leading to constant exchange of experiences include regular meetings and presentations, as well as conferences and other jointly organised events. Knowledge institutions should act as initiators of these activities.

(3) Strictly define internal accountability relationships.
In order to have an unambiguous overview of the process, as well as to secure positions of internal actors, the university has to be clear about who is responsible for what with regard to knowledge valorisation. The centralised definition of accountability relationships is therefore needed specifying what kind of actions and decisions have to be reported, how those can be justified, as well as defining consequences in case of misconduct. This definition may be laid down in a university's organisational code or a similar type of document.

(4) Differentiate selection indicators for different fields, apply long-term oriented indicators of success, and think broader than tangible results of knowledge valorisation.
Three efficiency-related policy implications were derived as a result of the study. Firstly, indicators used for the selection of knowledge valorisation projects should be customised for different research areas (e.g. technical, medical etc.) since time-to-market, maturity of the market and complexity of projects varies across domains. It is favourable to delegate the decision on selection of indicators to the decentralised level where university employees are working directly 'in the field'. Secondly, long-term oriented indicators of success should be applied when measuring the success of knowledge valorisation activities. Such indicators as the

number of patents or spin-offs created per year do not provide sufficient information to judge on long-lasting success of a knowledge institution. Therefore good and reliable indicators that track progress over time are essential to reporting on results. An example of long-term oriented indicators refers to the spin-off survival rate within a certain period of time. Furthermore, knowledge institutions should not limit themselves to tangible results of knowledge valorisation. Indicators referring to entrepreneurial education, knowledge exchange with external partners as well as the overall reputation of a knowledge institution or the number of students that have been attracted to the university as a result of well-known inventions should also be taken into account when judging on the success of a university or UMC in the field of knowledge valorisation.

(5) Collaborate with as many external partners as possible.

Knowledge valorisation is a complex process in which a knowledge institution represents one of the multiple actors involved. Collaboration with partners (potential clients, investors, other knowledge institutions etc.) is therefore crucial, especially when knowledge valorisation takes place in the form of a spin-off, which requires competences such as selling and negotiation skills. In order to be able to quickly react to problems and adapt to changing market conditions, a decentralised external network should be established for every certain area of scientific expertise. At the same time, a central ‘reception’ should be put in place to create a contact point for new comers, as well as for general matters regarding knowledge commercialisation.

A List of Interviewees

The following persons were interviewed in the course of this research. We are grateful for the information and suggestions they have provided.

Academisch Medisch Centrum:	Prof.dr. L.J. Gunning-Schepers (President UMC Board) Dr. W.J. Van Oort (Director AMC Bureau Kennistransfer)
Erasmus MC:	Prof.dr. F.G.A. Van der Meché (Holding Director) Drs. R.M. Al (Manager Erasmus MC Incubator)
Technische Universiteit Delft:	Prof.drs. M. Waas (Faculty Dean) Drs. H.P.S. Althuis (Director of CICAT)
Technische Universiteit Eindhoven:	Ing. A.H. Lundqvist (President University Board) Ir. W.E.J.M. Bens (Director of Business Development)
Universiteit Leiden/LUMC:	Drs. H.W. te Beest (Vice President University Board) Dr. B. Smailes (Director of LURIS)
Universiteit Twente:	Ir. K.J. van Ast (Vice President University Board) Dr. C.J.M. Eijkel (Director Innovation Lab and Kennispark) Drs. S.J. van Tongeren (Executive Director of Institute for Governance Studies)
Universiteit Utrecht:	Mr. Y.C.M.T. van Rooy (President University Board) Prof.dr. W.H. Gispen (Vice President University Board) Drs. B. Allart (Project leader Start Impuls)
Vrije Universiteit/VU Medisch Centrum:	Prof.drs. E.B. Mulder (President UMC Board) Dr.ir. W.E.W.J. Mosmuller MBA (Director of Technology Transfer Office)
Wageningen University & Research Centre	Prof.dr. M. Kropff (Vice President University Board) Prof.dr. W.M.F. Jongen (Director Wageningen Business Generator)

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C Questionnaire

The questionnaire that was used in the interviews is presented below, followed by two matrices used to get an overview of Transparency and Accountability activities.

Section 1: General

1. What does good governance mean to you in the context of university?
2. What are the specifics of good governance regarding knowledge valorisation (KV)?
3. What should be improved in the governance of KV process in the next 3 years?

Section 2: First two levels of good governance

Effectiveness

4. What does effectiveness with regard to good governance of KV mean to you?
5. What are the indicators of effectiveness with regard to good governance of KV?
6. What could be done to improve effectiveness?
7. What are the key challenges and issues in achieving that?

Transparency

8. What does transparency with regard to good governance of KV mean to you?
9. What are the indicators of transparency with regard to good governance of KV?
10. What could be done to improve transparency?
11. What are the key challenges and issues in achieving that?

Efficiency

12. What does efficiency with regard to good governance of KV mean to you?
13. What are the indicators of efficiency with regard to good governance of KV?
14. What could be done to improve efficiency?
15. What are the key challenges and issues in achieving that?

Accountability

16. What does accountability with regard to good governance of KV mean to you?
17. What are the indicators of accountability with regard to good governance of KV?
18. What could be done to improve accountability?
19. What are the key challenges and issues in achieving that?

Section 3: Level 3 of good governance

20. How do you think the rule of law is relevant to good governance of KV?
21. How do you think responsiveness is relevant to good governance of KV?
22. How do you think equity and inclusiveness is relevant to good governance of KV?
23. How do you think orientation towards consensus is relevant to good governance of KV?
24. How do you think participation is relevant to good governance of KV?

Transparency

25. What kind of KV-related information should the university share with the following stakeholders to be transparent? Which means of communicating this information should be used?

Stakeholder group	Type of information	Means of communication
Government		
Internal staff and students		
Partner organizations		
General public		
Other:		

Accountability

26. Please mention the most important aspects of accountability to the following stakeholder groups:

Stakeholder group	Most important aspects of accountability
Government	
Staff	
Researchers/Entrepreneurs (people who take the risk to start a business)	
Market	
General public	
Other:	

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Alles begint met pionieren

Colophon

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