



Guide to Dealing with Knowledge Institutions' and Employees' Equity Interest in Academic Start-Ups (or Spin-Offs)

Association of Universities in the Netherlands (VSNU), the Netherlands Federation of University Medical Centres (NFU), the Royal Netherlands Academy of Arts and Sciences (KNAW), the Netherlands Cancer Institute (NKI) and the Netherlands Organisation for Scientific Research (NWO)

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Purpose of this Guide

Utilising knowledge gained from research carried out at public research organisations (valorisation) is important for society, particularly in facing its challenges and economic opportunities. Therefore, knowledge transfer is one of the core duties of a knowledge institution. Sometimes, a university will establish a new company, i.e., an academic start-up or spin-off company. This will be a new company, founded on the basis of assets that belong to the knowledge institution. It is vital that clear agreements be drawn up regarding the use of these assets and regarding the knowledge institutions' employees' involvement in the start-up.

This means that there is an increasing need for a guide to dealing with knowledge institutions' and employees' equity interest in academic start-ups. In addition to presenting universities and their staff with an opportunity to lay the groundwork for new, promising and potentially important companies, start-ups also pose certain risks, e.g. conflicts of interest (or the appearance thereof) between public and commercial/private interests. Therefore, the transition from public intellectual property rights to a private company must be realised in accordance with transparent rules.

The purpose of this Guide is to elucidate the knowledge institution's basic principles with regard to the knowledge institution¹ and an employee of the knowledge institution² acquiring or holding an equity interest in a start-up. Please note that the Guide is not binding. It is merely meant to present knowledge institutions with a tool they can use to draw up their policies. This document may be regarded as the outlines of such a policy. It is a framework document designed to provide knowledge institutions with some direction. The experiences thus gained by the institutions will ensure that the institutions take a more common approach to equity interest. The Guide provides tools with which the knowledge institutions can prevent actual or alleged conflicts of interest. It was drawn up to explain the rules to employees, entrepreneurs, investors and other stakeholders. The basic idea is to apply its content, or provide an explanation in case its content cannot be applied, and in doing so provide predictability and transparency about what employees and start-ups can expect in this regard. Business principles and the risk/reward ratio play a major role in this. Many knowledge institutions have their own binding policies with regard to valorisation, and people who wish to get involved in such matters must familiarise themselves with these policies.

For the sake of readability and understanding, this Guide mainly deals with the relationship between the start-up, the employee involved and the knowledge institution. It is important to remember that start-ups come in many guises. A start-up can be a consulting firm run by a sole trader as easily as it can be a private limited company with several shareholders, major investors, an extensive management team and a supervisory board. Start-ups may be service providers, focus on R&D or production or specialise in software, medicines, complex technology, high-quality equipment, etc. In addition, it should be recognised that the various knowledge institutions all have their own ideas with regard to holding equity in academic start-ups and managing conflicts of interest. There is no one-

¹ To ensure harmonisation with the definitions used in the Set of Guidelines Dealing with Intellectual Property Rights, we will use the phrase 'start-up' in the rest of this document, but the word 'spin-off' is equally applicable.

² Since students are not employees, they are not subject to the collective labour agreement (CAO-NU), the ancillary activities scheme (in Dutch *'regeling nevenwerkzaamheden'*) and policies governing employees of knowledge institutions. Students are allowed to found companies if licensed by the knowledge institution to exercise the necessary intellectual property rights. In some cases, the knowledge institution may become a shareholder in the company if it has contributed to the company.

size-fits-all approach to acquiring and holding shares. For an illustration of this fact, see the four realistic scenarios outlined on pp. 12-15.

In July 2016, we published the Set of Guidelines Dealing with Intellectual Property Rights (IPR)³ with regard to academic start-ups. This was done under the supervision of the Association of Universities in the Netherlands (VSNU), the Netherlands Federation of University Medical Centres (NFU), the Royal Netherlands Academy of Arts and Sciences (KNAW) and the Netherlands Organisation for Scientific Research (NWO) (see [NFU-website](#) or [VSNU-website](#), among other documents). The present 'Guide to Dealing with to Knowledge Institutions' and Employees' Equity Interest in Academic Start-Ups (or Spin-Offs)' builds on this document. For more background information, please consult the Set of Guidelines with regard to IPR and academic start-ups. We recommend that you take notice of its contents.

These days, all Dutch knowledge institutions have their own organisation, department or agency tasked with supporting valorisation (also known as Valorisation Department, Technology Transfer Office (TTO), or Knowledge Transfer Office (KTO), which sometimes is placed under the knowledge institution's holding company. Such organisations are a logical and often mandatory point of contact for advice and guidance in the establishing stages of a start-up and in drawing up agreements with the knowledge institution with regard to the use of intellectual property rights. This type of organisation will be referred to in the remainder of this document as 'the Valorisation Department'.

Many knowledge institutions or regions have a business incubator where start-ups can receive coaching, mentoring, offices, start-up financing and all sorts of programmes designed to help the companies get off to a better start⁴. It is a good idea not to incorporate this type of business incubator into the Valorisation Department. The Valorisation Department, along with the knowledge institution and companies, is responsible for maximising the start-up's potential for a maximum impact. Business incubators are mainly about focusing on a start-up's potential for success and growth. Sometimes, imparting knowledge and technology to a start-up is the best way to generate a maximum impact. At other times, this can better be achieved by licensing or transferring intellectual property rights to an existing company.

Basic principles

The road to commercialising knowledge and technology by means of a start-up is almost by definition paved with conflicts of interest. Depending on the nature and/or size of the start-up, the interests of the parties involved in a start-up may vary considerably. One major issue that may occur is financial interest, which often takes the form of shares in a start-up. Another type of conflict of interest that may arise is the ratio in which time and effort are expended on various duties, i.e. the ratio of a person's tasks as an employee of a knowledge institution and the person's tasks as a founder of a start-up (conflict of commitment).

This Guide explains how having financial interest in a start-up can be reconcilable with a knowledge institution's mission, and why it may even be desirable. It also explains why there are limitations to this and provides possible solutions to knowledge institutions' employees holding shares.

³ If intellectual property rights are licensed to an existing company rather than to a start-up, the inventors are entitled to a percentage of the licensing revenues in their private bank accounts, in accordance with their institution's policy.

⁴ Utrecht Inc, YesDelft, ACE, Startup Eindhoven, Mercator Incubator Radboud University, SMB Incubator, Radboud University Medical Centre, Erasmus MC Incubator, etc.

It is important to remember that knowledge institutions have public duties, are largely financed with public money and are accountable to the public. Therefore, they are not completely free to enter into just any agreement with a start-up, nor to enter into just any agreement on intellectual property rights. It is vital that a proper balance be struck between the business conditions under which knowledge or technology is provided to the start-up, and the economic and social impact the knowledge or technology developed at the institution may have.

This Guide only serves as a supplement to several other arrangements, many of which are binding, including (but not limited to) the collective labour agreement, the ancillary activities scheme (in Dutch 'regeling nevenwerkzaamheden'), codes governing conflicts of interest and the scientific integrity codes that are in force at knowledge institutions. For example, an academics' obligation to list their ancillary activities and their interest in companies on their profile pages on the university's website.

Researchers can consult their HRM Department or Valorisation Department to find out which policies and arrangements apply to them.

Why acquire financial interest or equity interest?

Knowledge institutions, as well as their employees can contribute to the foundation and development of start-ups in several ways. When we mention start-ups here, we are generally referring to private limited companies with one or more shareholders. For academic start-ups, input provided by knowledge institutions and their employees may be paramount in the early stages, as it may allow them to translate scientific results into strong business cases and specific strategies that will help them arrive at a company that converts scientific results into products or services relevant to society. Both the knowledge institution and its employees may contribute several things to a start-up. Some start-ups may involve a fair bit of risk, and it is not unusual, and indeed often a legal requirement (e.g. for fiscal reasons), for there to be some form of compensation to reflect this. When people invest in a start-up, they may be rewarded for the risk they are taking by means of shares, which may result in a profit in the long term. When a new company is founded, investors may deem it important that the principal investigators and/or the knowledge institution have a financial interest in the company, as this will encourage them to be fully committed to the company. To ensure a company's success, it may be necessary for the knowledge institutions' employees to actually work at the company or serve as consultants to the company. Compensation can be by means of a royalty agreement. Employees/inventors can obtain a financial share through a direct equity interest, through the knowledge institution's equity interest or through a licence conferred by the knowledge institution. Knowledge institutions have drawn up policies on how to allow inventors to share in the revenues from invested or licensed intellectual property rights.

When founding a start-up, it is wise to consider creating an option pool or keeping some shares in reserve for future employees of the start-up.

When founding academic start-ups, knowledge institutions generally comply with the following basic principles:

Decision-making and foundation of the start-up

- a. Normally, the foundation of a start-up requires a (draft) business plan. This business plan is submitted to the competent part of the organisation and the Valorisation Department by the employee(s) taking the initiative⁵. At the very least, the plan must contain a description of the

⁵ It may be a good idea to consult this department before drawing up a complete business plan.

employee's role in relation to the initiative, the time spent and an indication how the activities undertaken by the start-up and by the knowledge institution may be related. The Valorisation Department will then provide the entrepreneur(s) wishing to establish a start-up with feedback, and will in many cases help the entrepreneur(s) draw up a solid plan by providing advice and support. In addition, the Valorisation Department can provide advice on how to apply for a subsidy and what external consultants and coaches to use, help draw up the requisite contracts and introduce the entrepreneur(s) to potential investors.

- b. An employee/entrepreneur who wishes to found a start-up may try to find an entrepreneur who will run the business in the event that s/he does not want to run the business himself/herself, or is unable to do so. If necessary, the Valorisation Department may assist him/her in this matter.
- c. The employee or entrepreneur who wishes to found a start-up and the knowledge institution (generally represented in this matter by the Valorisation Department) must reach an agreement regarding the following issues:
 - the ratio in which the employee involved will expend his/her time and effort on his/her duties at the knowledge institution and his/her duties at the start-up (generally, this will be discussed with the employee's direct manager and/or the dean);
 - the contribution of intellectual property rights and knowhow, where relevant (for intellectual property rights, see below under D; also see the Set of Guidelines Dealing with IPR);
 - the distribution of shares between the parties involved at the time of the foundation and, where necessary, agreements on a revision of this distribution ratio – for instance, when a team member leaves or a new team member is hired, or when a certain milestone is or is not achieved). In some cases, the knowledge institution may forgo having a share in the company;
 - where relevant, collaboration agreements between the start-up and the knowledge institution, in line with the usual procedures. In this matter, the knowledge institution cannot be represented by the employee/entrepreneur;
 - the timetable for the foundation of the start-up and any regularly scheduled evaluation moments which may be implemented until the commencement of business (and possibly thereafter);
 - insight into the possible consequences for colleagues;
 - where relevant, a description of the supplier-customer relationship between the start-up and the knowledge institution.
- d. Normally, intellectual property rights will be conferred on the start-up by the knowledge institution through licensing. In exchange for the rights, the start-up will have to pay royalties and/or milestone payments (which will be subject to the Inventors' scheme). If the investors so desire, the title of the intellectual property rights sometimes can be transferred, subject to royalty and/or milestone payment obligations and certain other conditions. In some cases, intellectual property rights can be brought in in exchange for shares, depending on the preferences indicated by the knowledge institution and/or the start-up and other stakeholders (e.g. previously hired managers or investors), if any.
- e. Once the Valorisation Department has approved the business plan, the plan (from which certain confidential information has been removed, if necessary) and a summary of the agreements to be entered into with the knowledge institution ('term sheet') must be submitted to the competent authorities at the knowledge institution. The business plan must contain certain elements, as outlined in Appendix 1.
- f. The employee who initiated the foundation of the start-up and/or the entrepreneur running the business is responsible for founding and organising the new company. The Valorisation Department may support him/her in this. The costs associated with the foundation of the company will be borne by the company.

- g. In those cases in which the knowledge institution (or its holding company) acquires an equity interest in the start-up, the Valorisation Department will generally play an active part in the drawing-up of its articles of association, shareholders' agreement and board agreement. At the very least, the Valorisation Department will be closely involved in the drawing-up of the licensing agreement and/or partnership agreement with the knowledge institution.
- h. In terms of business and organisation, the founders must establish the start-up in such a way as to enable its proper growth, even in the longer term. In growth companies that are strongly dependent on investors (venture capital), dilution of the founders' equity interest generally applies.

Grounds on the basis of which the employee and the knowledge institution may acquire shares; contributions

These days, private limited companies can be founded without any start-up capital. However, in practice, a company needs money, and it is generally a good idea not to found a company until sufficient financial resources are available. Other matters also need to be brought into the company on economic grounds.

The employee may contribute the following tangible and less tangible matters to the company:

- founder activities carried out in his/her own time;
- the employee's network;
- the employee's general knowledge of his/her field;
- the employee's reputation;
- his/her own money.

The knowledge institution may contribute the following tangible and less tangible matters to the company:

- licence or transfer of intellectual property rights: patents, including applications for patents, study results that have yet to be published, materials, cell lines, DNA constructs, etc.;
- copyrights for software/algorithms, designs, (electronic) files, design rights, etc.;
- knowhow;
- some of the employee's hours at the knowledge institution, so as to enable the employee to further develop the product and/or draw up a business case;
- support provided by the Valorisation Department (like the founder, the Valorisation Department may also allocate some time to founder activities);
- making the incubation space (laboratory and/or office space) or the equipment available, at a price rate that is below the market price (and which the institution must be additionally compensated for, so as not to disrupt the market, or if the system involves payments after the fact);
- making available financial support, e.g. a start-up loan;
- mediating/providing advice on the application for start-up-specific subsidies (e.g. NWO-TTW's Take Off or the EU's ERC Proof of Concept grant);
- access to the knowledge institution's network;
- support provided by the knowledge institution to the (academic) careers of the researchers involved;
- a financial investment by the knowledge institution (or its holding company) in the company.

The aforementioned matters, which can be contributed by the employee and/or the knowledge institution, may be expressed in shares, but can also be repaid in some other way.

Knowledge institutions would be wise to appoint expert employees for guidance in starting businesses and managing shares in Start-ups, including for guidance on financing by third parties such as venture capital. The desired expertise is not limited to the start but also the subsequent phases. Preferably there is a holding company with sufficient mandate and expertise that manages the shares of the knowledge institution. Start-ups of knowledge institutions often benefit from actively involved shareholders.

Cash contributions can be simple (one euro, one share, one vote) but can also be more complex. Contribution in kind and / or goodwill in exchange for shares is often more complex with many (fiscal) regulations and jurisprudence. This Guideline does not deal in detail with the various financial, legal and / or fiscal aspects. The use of a tax specialist, lawyer and / or accountant may be necessary if there is a contribution in the company in kind. The starting point is that what is introduced in kind must be valued according to economic criteria. This also applies to the less tangible matters. Valuations of this can be complicated and in some cases requires the use of an external valuation expert.

Options on shares for managers and/or essential employees

For Start-ups, it regularly applies that the management at start-up is not necessarily the right management for the growth phase or the venture capital phase. For the growth of the Start-up it may be necessary to expand the management or even to replace it in some cases. To ensure the further growth of a start-up, it may be necessary to expand the management team or, in some cases, actually replace managers. Other essential staff members of the start-up may likewise be interested in building a small equity interest. It is partly for this reason that it may be a good idea to create an option pool for staff and future staff at some point, allowing essential employees and/or managers to acquire shares, or additional shares, in the start-up, subject to conditions and performance (milestones). An option pool can be a great tool to attract highly talented staff, both from the Netherlands and abroad.

This Guide was not drawn up to provide an in-depth discussion of 'Options on shares'. The same is true for the various types of shares discussed below. If you would like to receive more information on these subjects, please consult a notary, a legal adviser or your institution's own Valorisation Department. In addition, there are other tools that may serve as incentives to a company's staff (career promotion incentives, fringe benefits, bonuses, etc.), but these will not be discussed in this Guide.

Types of shares

Where necessary, start-ups may issue several types of shares, some of which may give shareholders many rights, while others give shareholders fewer rights (e.g. with regard to voting, sharing in the profits), depending on the situation. It is wise to streamline the various shareholders' interests, and the start-up's, to the maximum extent possible. Furthermore, legal possibilities and limitations should be kept in mind, as well as the arrangements' compliance with fiscal law. For instance, it is not possible to issue 'free' shares in an active start-up.

This Guide was not drawn up to provide an in-depth discussion of 'Types of shares'. If you would like to receive more information on this subject, please consult a notary, a legal adviser or your institution's own Valorisation Department

Conflicts of interest

It is crucial that conflicts of interest be prevented or mitigated where possible, or that transparency be provided on their nature. An obvious means is to carefully arrange who can represent which

party, especially when it comes to making appointments between Start-up and Knowledge institution. An additional instrument could be to grant financial incentives to the employees of the knowledge institution, but to limit or even prevent control in the company. Sometimes it is better not to have the employee of the institution sit in the management of the Start-up or to limit the role to 'scientific director'. It is possible to work with profit shares on which there is no control or voting right. Or the shares can be placed in a dedicated Trust Office (StAK), such to arrange that the employee is not entitled to attend the shareholders meeting. The Valorisation Department can provide further advice. A clear choice by the employee can be helpful in managing any conflicts of interest. Will the entrepreneurial researcher fully allocate his/her time to the Start-up or is it an ancillary activity (see below)?

The following are prerequisites for employees who wish to establish a start-up:

- The duties they are supposed to be carrying out at the knowledge institution (e.g. the supervision of PhD students) must either not suffer at all or it must be possible for other employees of the institution to take over these duties.
- There must be a clear and verifiable separation of the activities the employee carries out on behalf of the start-up and those s/he carries out on behalf of the knowledge institution, with regard to contamination of intellectual property rights, 'leaking' of intellectual property rights or knowhow and conflict of commitment.
- The potential for a conflict of interest on the part of the employee must be sufficiently limited.
- The start-up must not damage the knowledge institution's scientific, organisational and/or business interests and must not reflect poorly on the knowledge institution.
- Transparent communication on the employee's positions at both the start-up and the knowledge institution.

People who are considering establishing a start-up or acquiring shares in a start-up are advised to contact the Valorisation Department at a very early stage. The Department will be able to provide more information on the next steps to be taken. The table below provides a brief explanation on what to arrange in which situation.

A company is being founded and/or someone is acquiring shares in a start-up (simplified table)			
Employment?	Employee leaves the institution entirely	No arrangements necessary (unless a partnership with the institution is desired)	Arrangements must be made with regard to property rights
	Employee switches to part-time employment with the institution	Arrangements must be made with regard to potential conflicts of interest	Arrangements must be made with regard to conflicts of interest and access to property rights
	Employee continues to be employed by the institution	Arrangements must be made with regard to potential conflicts of interest	Arrangements must be made with regard to conflicts of interest and access to property rights
/		No	Yes
Institution's property rights required?			

A typical start-up generally requires the following agreements: the private limited company's articles of association, a shareholders' agreement, a board agreement, a collaboration agreement concluded with the knowledge institution, a licensing agreement and, in the event of a financial investment, an investment agreement and/or loan agreement.

Examples of start-ups

To give more insight into the various possibilities, two general possibilities for a Start-up are described below: 1) running the start-up independently and 2) running the start-up as an ancillary activity. Afterwards, we will provide four imaginary but specific examples.

1. Running the start-up independently: the employee will leave the knowledge institution at once, or soon, or his/her hours at the knowledge institution will be significantly reduced.
2. Running the start-up as an ancillary activity: the employee will continue to work for the knowledge institution fulltime or most of its time and will continue to perform all or most of his/her duties, but will also perform duties on behalf of the start-up for a short or longer period of time.

Ad 1. Characteristics of a start-up run independently by an employee

- a. The inventor/employee/entrepreneur coordinates the foundation of the start-up. If necessary, the Valorisation Department will provide support. Generally, the employee/entrepreneur (and possibly a third party) holds most of the shares or all the shares.
- b. The knowledge institution may or may not have a minority shareholding. It will sign a licensing agreement with the start-up. This will allow the knowledge institute a financial return on the intellectual property rights put into the company in the form of milestone payments and royalties (or in the form of shares).
- c. Generally speaking, the institution's shares will be held by one of the knowledge institution's holding companies.
- d. In some cases, the employee/entrepreneur may continue to be employed on a part-time basis during the first few months of the start-up (e.g. the first 3 to 12 months following the foundation of the start-up), subject to authorisation by the head of his/her department, and will also be employed on a part-time basis by the start-up. The precise nature of the transition period will be determined in advance; work hours may have to be reduced in stages. In exceptional cases, the knowledge institution may check whether the employee is eligible for a return to the knowledge institution, and if so, in what manner and within what time span.
- e. The employee/entrepreneur will not receive any pay from the knowledge institution for the hours s/he spends working on behalf of the start-up.

Ad 2. Characteristics of a start-up run as an ancillary activity by an employee

- a. The inventor/employee may have a limited equity interest (depending on the employee's contribution and other people's contributions). A commonly used upper limit for employees on a full-time contract with a knowledge institution is 4.9%⁶ of the shares. In the event that the employee switches to part-time employment by the knowledge institution, s/he may acquire a greater equity interest, but never more than 50% of all shares. In most cases, the equity interest will be significantly smaller. The equity percentage will be determined on the basis of the employee's contribution and the level of risk involved.
- b. She does not have another direct business relationship with the start-up, which is to say that s/he is generally not the start-up's managing director nor a member of its formal management team.

⁶ If a party's equity interest does not exceed 5%, it is not considered a "Substantial Interest" ("Aanmerkelijk Belang") and therefore comes under Box 3 in the party's tax return.

However, the employee may serve as an adviser or consultant, in which case the knowledge institution may send him/her on secondment. S/he will often be allowed to hold the position of Chief Scientific Officer, subject to authorisation by his/her manager and the director of the Valorisation Department. Alternatively, an employee may serve as a scientific adviser to the company.

- c. Generally, the foundation of the company is taken care of by an external entrepreneur/investor, with or without the support of the Valorisation Department.
- d. In patent applications, all new foreground intellectual property rights generated in the field of the start-up relating to an invention made by the employee concerned or by another employee of the knowledge institution will be credited to the knowledge institution. Afterwards, the knowledge institution may grant the start-up a licence, which may or may not be exclusive. The terms for a licence need to be on market terms.

Sample scenarios of start-ups and their equity interest

Example no. 1: Piet, an assistant professor, founds a consultancy firm

Piet works at a university. He teaches undergraduates on fluid dynamics and supervises a PhD student whose research involves a software model used to simulate the flow of fluids. This PhD student will soon be awarded his doctorate. The software was developed at the university by several persons over the course of over a decade in order to help find solutions to scientific quandaries. Piet has lately been contacted by several market parties who want his advice on concrete and practical solutions in the field of fluid dynamics.

Piet would like to become an entrepreneur, and therefore concludes an agreement with his employer to the effect that his hours at the university will be reduced to two days a week (teaching duties), thus leaving him three days a week to work as an independent entrepreneur. Piet and the university agree on a competitive, non-exclusive licence to use the university's software. In addition, Piet will use the reduction of his number of work hours at the university to found his own consultancy firm, which will allow him (and any employees he may hire) to provide services within the scope allowed by the licence, including the use of the simulation software. Piet will be the sole proprietor of his own consultancy firm and will pay the university an annual fee for the use of the software that is in keeping with market prices.

Example no. 2: Abdel, a student, establishes a company

Abdel is getting a degree at a university of technology. During his research work placement, he and Dorien – a researcher at the university – invented and tested an innovative and smart way of packaging things at the university's laboratory. It looks like the design may be patentable. Once he has completed the university's incubation programme, Abdel would like to found his own company, which will produce the design he and Dorien came up with, and he will serve as its director and major shareholder. He would rather not have to pay any royalties, and wishes the patent to be applied for to be granted to his company. His company will bear the costs of the patent application.

By mutual consultation, after the parties have made many calculations (in which Abdel is supported by an experienced tutor affiliated with the incubation programme), the intellectual property rights are valued at 50% of the initial value of the company. Abdel's efforts and the business plan he has written are also valued at 50% of the initial value. According to the inventors' scheme in place at the university, (1) the inventors, (2) the research department, and (3) the university are each entitled to 33.3% of the net revenue from patents.

In line with the foregoing, the parties arrive at the following share division in the company at the time of its foundation:

- Abdel: 58.3% (50% for the contribution he is making as an entrepreneur and writer of the business plan, plus 8.3% to which he is entitled as an inventor);
- Dorien: 8.3% (to which she is entitled as an inventor);
- the university's holding company: 33% (the proceeds will be equally distributed between the research department and the university as a whole).

Since the intellectual property rights are completely offset against shares and since the start-up will hold the title to the patents, no licence will have to be issued, nor any royalties paid. In addition to getting his degree, Abdel will be an independent entrepreneur. A reasonably wealthy relative of Abdel's will lend the company some money in order to allow it to create several series of good prototypes of the smart packaging product and to pay the costs for obtaining the patent. Once the prototypes are available, Abdel wishes to licence the concept on a non-exclusive basis to various players in the packaging industry. Dorien will not be directly involved in the company. The parties

Example no. 3: Madelon, a full professor, establishes a biotech company

Madelon is a professor of immunology at a university medical centre (UMC). Her research group's research projects, which have spanned many years, have resulted in three patents with multiple inventors. Madelon and the Valorisation Department have been approached by an experienced entrepreneur who wishes to use Madelon's technology to establish a biotech company. Their first few meetings are business-like and pleasant. The entrepreneur, who will serve as the company's CEO, will draw up the business case, create a management team, contribute start-up capital (€100,000 in exchange for nearly 47.5% of the company's shares) and attract investors in due course. For its part, the UMC's holding company/TTO will also supply €100,000, in exchange for nearly 47.5% of the company's shares. The founding shareholders agree in the shareholders' agreement to issue 15% new shares in the long term in order to be able to create an option pool for essential employees.

When the company is founded, Madelon contributes €10,000, meaning she acquires nearly 5% of its shares. It is expected that the three parties' equity interest will be reduced once other investors join the company, but that the value of the shares may significantly increase if the application is successfully developed. The investors may eventually create an option pool for employees and members of the management team, which will go some way to covering the dilution of the shares. The CEO expects to be able to attract some €500,000 from a few 'angel investors' within one year. The company will have to attract €5 million's worth of risk capital from a venture capital provider within two years. Both the level of financing and the conditions under which the funding will be supplied are still unclear, and will have to be determined in consultation with the angel investors and, at a later stage, the venture capital provider.

The start-up and the UMC agree on a competitive exclusive licence regarding the patents, the requisite anti-body and any improvements that may be made during the partnership. Furthermore, the start-up and the UMC enter into a three-year partnership agreement, allowing some of the R&D to be carried out at Madelon's lab (costs to be borne by the start-up). In addition, the company has an option to receive the title to the patents at some point, provided that it has been able to attract the €5 million cash investment. The predetermined royalty rate will remain in effect following a transfer of title, if indeed such a transfer of title takes place.

For the first three years, Madelon will serve as the company's Chief Scientific Officer and will be a member of the management team. She will carry out her duties on behalf of the company (which will take her about one day per week) based on a secondment contract signed by the UMC and the company. In this way, Madelon will be able to spend some of her time engaging in science and product development for the company. Officially, she will still be employed by the UMC on a full-time basis.

In order to prevent conflicts of interest, or the appearance thereof, to the maximum extent possible, Madelon will not be able to represent either the company or the UMC when the two parties are negotiating. These responsibilities will be borne by the company's CEO and the knowledge institution's management team (supported by the Valorisation Department). Madelon will be able to take part in R&D activities, but will not be allowed to be directly involved in any clinical studies that may be carried out later.

Example no. 4: A full professor, a research fellow and an entrepreneur establish a contract research organisation

The knowledge institution has developed research materials and protocols. Although they are hardly unique, the Valorisation Department thinks a company could use them to make a profit. An external relation of the Valorisation Department's director would like to become an entrepreneur and appears to have all the right qualities. The director introduces his relation to the research fellow and the professor. All the parties involved get on well. Following a few consultations and work sessions, they arrive at the conclusion that a serious small or medium-sized enterprise may develop – in the niche market in which the company will operate – to have fifty employees, a €20 million turnover and a €3 million annual profit in ten years' time. Of course, this will require the company to be successful, which is by no means guaranteed.

The research fellow will obtain her doctorate soon, and afterwards will focus on product development at the company. She would like to become the company's product manager. The full professor involved in the project will remain at the knowledge institution, but indicates that he will be happy to place his knowledge and network at the company's disposal every so often, so as to help the company be successful. Since this will not take much of his time, he feels he does not need any form of remuneration. However, he would like to be able to hold some shares in the company, as a thank-you for his involvement.

With some help from the research fellow, the entrepreneur submits a Take-Off Stage 2 loan application to NWO-TTW, which is accepted. The professor beta-read the application and provided some input. The company to be established will accept the interest-bearing €200,000 loan granted by NWO-TTW. If the business case is successful, the loan and its interest will be repaid in three years from the company's cash flow.

The recipes for the research materials and the associated user protocols have been published and are neither very unique nor very valuable. Therefore, the Valorisation Department chooses to put them into the company free of charge, just like the various parties' knowledge, expertise, networks and level of experience. In this case, there is no invention that can be protected by a patent.

In addition to the NWO-TTW loan, the company will need a €100,000 start-up capital to break even. The entrepreneur wishes to obtain the majority of the shares so as to be able to run the company in a decisive manner and would rather not have any other external investors/shareholders, except the research fellow, the professor and the knowledge institute. The entrepreneur wishes to be able to consult the director of the Valorisation Department whenever necessary, because he is certain he will encounter many situations that require input and harmonisation, and the Department has considerable experience of start-ups. The director is willing to allocate a reasonable amount of time to this start-up.

By mutual consultation, the parties arrive at the following strategy: the research fellow will invest €2,500 in exchange for 10% of the shares; the full professor will invest €1,225 in exchange for 4.9% of the shares; the knowledge institute (through its Valorisation Department) will invest €8,825 in exchange for 34.1% of the shares and the entrepreneur will invest €12,750 in exchange for 51% of the shares. To make up the €100,000 needed to found the company, the Department (or the knowledge institution's holding company) and the entrepreneur will each lend the company €37,500 at a 6% interest rate. The entrepreneur and the Department's director have also promised that, if the two €37,500 loans prove insufficient, they will each lend the same amount again, provided that they still have confidence in the project. In the future, the NWO-TTW loan will be repaid first, after which the loans provided by the entrepreneur and the Department will be repaid on a pro-rata basis. The company is not

Appendix 1: Aspects to be included in the business plan

- a. composition of the team;
- b. product/technology/service;
- c. market;
- d. marketing sales plan/distribution strategy (where relevant);
- e. plan of operations (including risk assessment and risk mitigation strategy);
- f. intellectual property brought into the company (patents, knowhow, software, models, etc.);
- g. shareholders;
- h. budget: investment sum needed, profit-and-loss forecast for the first two years;
- i. exit strategy or long-term objective for the company.

The aforementioned aspects must also provide sufficient insight into the contributions made by the various founders (including the knowledge institution, if applicable), the amount of time to be invested in the company by the employee/entrepreneur/knowledge institution (particularly during the transitional period) and the expected long-term profits of the company.

Appendix 2: Definitions

Academic start-up A

start-up based on knowledge gained from scientific research carried out by Dutch universities, university medical centres and institutes affiliated with the Netherlands Organisation for Scientific Research (NWO), the Royal Netherlands Academy of Arts and Sciences (KNAW) or the Netherlands Cancer Institute (NKI).

Exclusive licence A

licence conferring rights on one single user, without any other users being allowed to use the product (held by the owner of the product, for example). When drawing up a licensing agreement, it is crucial that the agreement spells out what rights the knowledge institution has to use the product, both with regard to research involving the product (which is subject to exceptions) and with regard to other types of use. Knowledge institutions must avoid blocking future research projects because of an exclusive licence.

Exit

The moment at which shareholders sell their shares in a start-up.

Intellectual property rights

Intellectual property rights, such as patents, copyrights and database rights. Intellectual property rights are rights of prohibition, meaning that the rightful owner has the right to forbid others to exercise these rights or, conversely, to allow others to exercise them, e.g. by issuing a licence.

Inventor

The natural person(s) who made the invention. S/he contributed to the so-called inventive step, or part thereof. This can be determined on the basis of the claims, in which every inventor's contribution to the invention can be indicated.

Inventors' scheme

The scheme existing at universities, the KNAW and university medical centres governing inventors' activities. Generally, the fee to be paid out is determined on the basis of a percentage of the net proceeds (proceeds less costs of obtaining a patent), which is distributed across the inventor(s), the research group and the institution as a whole.

Knowledge institution

A public legal person that mainly performs research funded by the public, and often provides teaching as well. Often referred to as a 'Public Research Organisation' or 'PRO' in EU documents.

KTO

Knowledge Transfer Office, also frequently referred to as a 'Technology Transfer Office'.

Licence

The right to make use of intellectual property rights or any other contractual arrangement for the use of other people's property or rights, possibly under certain conditions such as a fee.

Patent

A patent is the exclusive right to prohibit others from using a protected invention for commercial purposes within a certain area. The rights have a national scope.

Patent application An application submitted to a government or other body that grants patents or to the European Patent Office in order to have a patent recognised.

Royalty

A percentage of the retail price or fee of goods or services individually sold to users and end users, in cash, as a percentage of turnovers (based on the invoice value). This traditionally results in the greatest amount of paperwork, but no cash-out until the company actually has some turnover. This is advantageous to the licensee in that the licensee will not have to pay an up-front fee. It is advantageous to the licensor/owner in that this party will profit from the success of a product or service.

Start-up

A legal person or partnership founded recently (less than five years ago).

Term sheet

Arrangements regarding the most important and relevant aspects of a general deal (terms), the details of which are yet to be finalised and included in a definitive agreement between the parties.

Up-front fee

Sum of money paid when the agreement is concluded. It can be used to cover the historical cost of obtaining a patent (or other costs), but can also serve to indicate the value of the signing of the agreement itself.

Valorisation Department

The knowledge institution's own organisation (or agency) that helps the institution commercialise its knowledge (often known as the Technology Transfer Office/TTO, the Knowledge Transfer Office/KTO or sometimes the holding company). When it comes to advice or guidance in matters pertaining to intellectual property rights, patent applications, licensing, collaboration with market parties and making arrangements with the knowledge institution regarding the use of intellectual property rights (when a start-up is founded), it is a good idea to consult this department first (in fact, this is often mandatory).
