



# LIVING DRUGS

## PRECISION THERAPY CLUSTER FOR SAXONY

**SaxoCell – How to transfer**

April 26th, 2022

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# How to transfer

## Agenda & Speaker

- What is meant by „technology transfer“
- Intangible assets as important R&D result
- Tied inventions (service inventions)
- Transfer options and best practice examples
- Typical contracts in technology transfer
- How to find transfer partners
- Speaker
  - Dorit Teichmann, SaxoCell® HUB, Startup Managerin Life Science dresden | exists
  - Dr. Thomas Tradler, SaxoCell® HUB, Head of Business Development, Fraunhofer IZI

- Excellence in Research and Innovation – no conflict but prerequisite
- Recent examples
  - mRNA-based SARS CoV-2 vaccine (BioNTech SE)
  - HPV vaccine for cervical cancer (DKFZ invention)
  - CRISPR/Cas 9 (= best and worst practice example)
- All these inventions are from academia and created a considerable economic impact
- But how does everything start?

- What can be the results of research activities?
  - Knowledge, skills
  - Highly qualified staff
  - Intellectual property rights
  - Infrastructure
  - Physical products
- Technology transfer is the exploitation of ideas and results coming out of the scientific community → FOCUS on economic exploitation
- Active step to make research activities accessible for economic activities of third parties (outside of your own institution)

# How to transfer

## Transfer at academic institutions



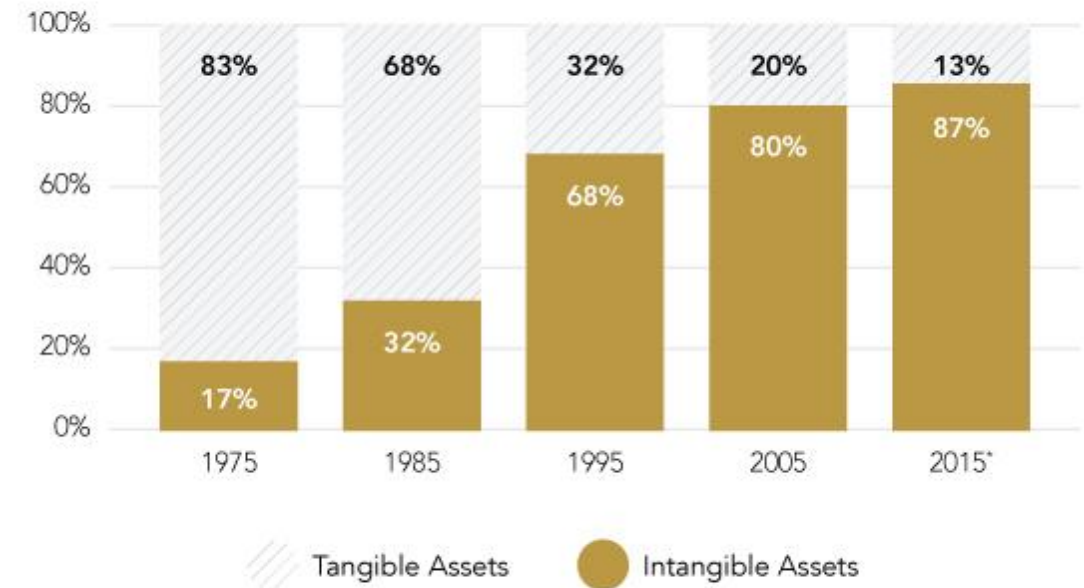
- Universities traditionally focus on basic research – but growing importance of transfer and economic impact – TUD transfer examples:
  - Spin-outs like Novaled, DyNABind, ...
  - Strategic cooperation with i.e. Carl Zeiss AG
- Fraunhofer-Gesellschaft has a strong focus on applied research and develops future technologies together with partners from academia and industry - Transfer examples from Fraunhofer IZI:
  - Spin-off companies like PerioTrap GmbH, epitopic GmbH and many others
  - Collaboration with Novartis and manufacturing of Kymriah® in Leipzig
  - Strategic partnership and license agreement with Bausch + Ströbel (LEEI technology\*)

\* Fraunhofer-Preis »Technik für den Menschen und seine Umwelt« 2021

# How to transfer

- Results of research activities can be broad
- There is intellectual properties (intangible assets) and other tangible assets like data, material, infrastructure, ....
- Over the years growing importance of intangible assets
- But companies build valuable portfolios by having both – tangible and intangible assets

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SOURCE: OCEAN TOMO, LLC

# How to transfer

## Different types of intellectual property

- Patents: Protection of a technological invention
- Utility model: Protection of a technological invention
- Registered designs: Protection of an aesthetic appearance
- Trade marks: Protection of a context-specific mark
- Copyright: Protection of authorship (i. e. software)
- Trade secrets: Unpublished Know-how

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# How to transfer

## Role of freedom to operate and own IPR\*

- Freedom to operate (FTO)
  - = No other party has blocking IPR granted = No one has the right to prohibit commercial use of your technology
  - How to solve in case FTO is not given?
    - Blocking IPR exist – option to negotiate a license or to seek not addressed geographic jurisdictions and/or technology/application areas
- Own protection
  - Own IPR granted (patents, utility model, others) - You have the right to exclude others from using your technology
  - Be aware the need to comply with all patentability requirements

\* Intellectual property rights (Schutzrechte)



# How to transfer

- Inventions are intellectual assets
- They become Intellectual Property if positive steps are taken to convert the assets into property
  - Keep it secret if you don't want to give your invention away for free
  - Be careful when you publish, give symposia or hold classes
  - **PATENT FIRST – PUBLISH LATER!**
- Inventions are owned by the inventors unless they sign this right away
- Typically signed away by signing an employment contract (Arbeitnehmererfindungsgesetz)
- Transfer begins with the disclosure of your invention to technology transfer staff (patent office, start-up manager,...) or to anyone else outside

## Disclosure of patentable invention

- Official step: invention disclosure to the patent office of your institution (see official documents provided by your institution)

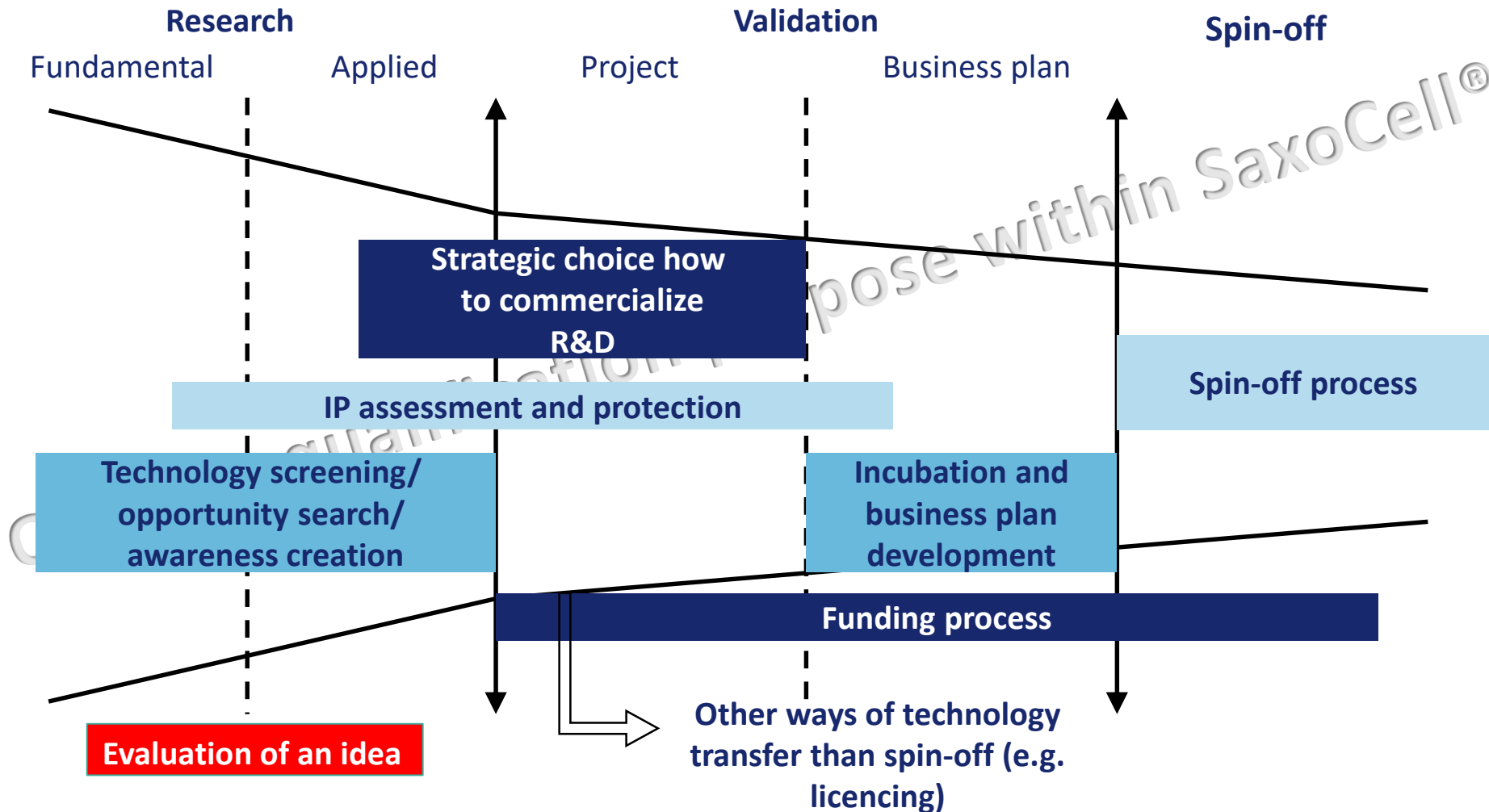
## Legal aspects

- Distinguish between ownership and inventorship of IP
- Basis: Arbeitnehmererfindungsgesetz in Germany (in other countries similar regulations)
- Negotiations on IP transfer to companies and start-ups are done by owner of IP in close collaboration with inventors

- Growing importance of transfer and impact of research in public funding
  - EU – impact
  - BMBF specific programs – exploitation strategies
- Typically ideas are evaluated at the step between basic and applied research

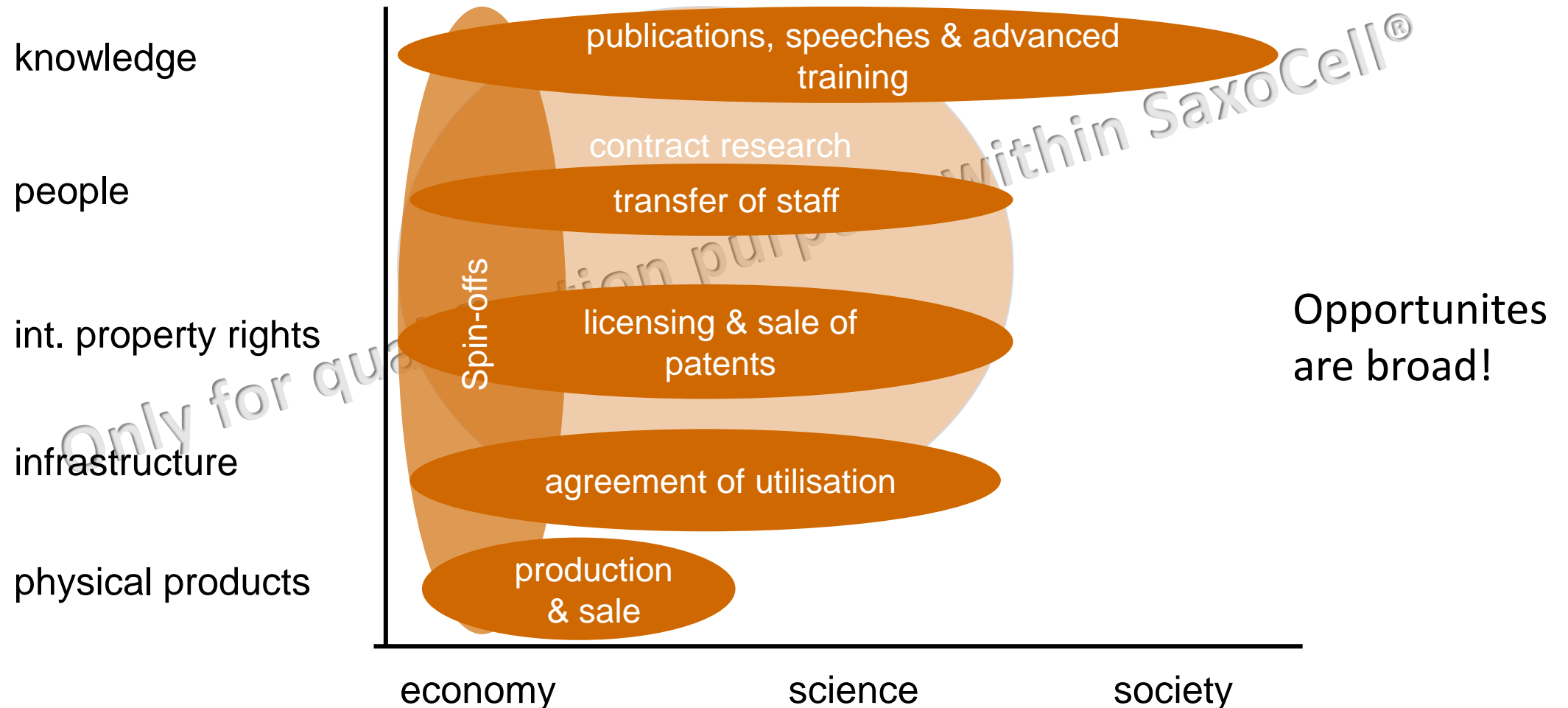
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## Technology transfer as a process



# How to transfer

- In which way do we transfer the results of our activities?



# How to transfer

## Transfer via licensing to third parties

- Licensing enables access to use an IP (not only patents, also material, data, software,..) for commercial purposes
- A third party will use this IP as protection for its own products and services
- Realised by specific license agreements, but can be also in combination with cooperation agreements/ research agreements (!! Always check the IP part in cooperation agreements)
- Before closing a license consider you own plans and try to understand the business case of your partner and evaluate the value your IP provides to the partner

# How to transfer

## Transfer via Spin-off (Start-up)

- A team out of a scientific institution creates a start-up based on idea/IP from the institution
- Specific case of a license agreement (between parent institution and start-up), option that institutions take shares in the start-up
- In most cases cooperation agreements between parent institutions and start-ups for further developments
- Career option for scientists and valuable for local value creation
- Institutions support scientists in their journey for a start-up with i.e. consulting, qualification programs and access to accelerators
  - Dresden: joint start-up service dresden | exists
  - Leipzig: Fraunhofer IZI BD/PM, Fraunhofer Venture Group, University - SMILE

# How to transfer

## Transfer via R&D cooperation

- Min. 2 partners cooperate to reach a joint aim (scope of the cooperation), open research character
- Defined work packages of the partners – normally specific IP brought in by each partner to reach the aim (background IP)
- Could be between academic partners and/or industry
- Could be with or without public funding (in case of funding – check the strings attached)
- Always go along with rules on how to handle / get access to the IP (background, and the newly created (foreground) as well as jointly created IP) – always check!



# How to transfer

## Transfer via contract research



- Important (and often underestimated) technology transfer option
  - Industry partner has a specific R&D challenge to address - orders academic partner to provide relevant service (testing, manufacturing etc.)
- Particularly important for FhG - but of increasing importance for universities as well → valuable source of revenues
  - In case of FhG: based on Fraunhofer General Terms and Conditions
- Compared to „R&D collaboration models“ usually connected with better IP terms for the industry partner – but details are important:
  - FhG position: Don`t give away rights for model-/service related IP
  - Specific financial rules to be followed by academic institutions (calculation at full costs – avoid cross-subsidy issues/state-aid)

# How to transfer

## Other ways of transfer – Knowledge transfer



- Qualification / Advanced trainings in specific fields (GMP, Regulatory etc.)
  - Pretty attractive but sometimes difficult cost/benefit ratio
- Transfer via staff (Transfer über Köpfe) – people change from academia into industry
  - Not always appreciated by the academic institution (as the loss of valuable staff resources is sometimes difficult to compensate)
  - But do not forget resulting benefits for the academic institution – staff gets lost but valuable industry connections result
  - Fraunhofer: Seeks to compensate institutes/groups for associated expertise losses – „Ausgründungsprämie“ with specific incentives in case of staff loss
- Transfer via sc. publications/other forms of dissemination in the public

- There are different ways to do transfer – it is always a case by case decision which way we will go
- Just a few criteria:
  - Field of application (platform / product)
  - Market size / market characteristics (emerging, how disruptive is your solution, competition, ...)
  - Team (your own vision – start-up?; what experts are on board?)

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# Typical contracts in technology transfer

## Agenda



- **CDAs/NDAs**
- MTAs
- Collaboration contracts
- **License/option agreements**
- GTCs
- ...

All of these contractual things usually will get supported comprehensively by your local legal department – and might be handled by those people – **but for successful technology transfer, you need to understand a few important contract terms!**

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Note/Disclaimer: These slides do not represent any official opinion of FhG, TUD and UL - and do not represent any legal advice. Regarding all legal questions, please always contact your legal department or an attorney.

# Typical contracts in technology transfer

## CDAs/NDAs - 1

- CDA/NDA – Confidential Disclosure/Non-Disclosure Agreement
- Typically, CDAs/NDAs represent the very first contract that is negotiated with the industry partner - **chance to generate a positive (or negative...) first impression for the partner of how collaboration with your entity feels like**



- Many transfer projects at academic institutions fail in early phase due to mistakes in negotiating CDAs (e.g. long delays in answering to contract proposals, improper negotiation behavior, unrealistic terms etc.)

# Typical contracts in technology transfer

## CDAs/NDAs - 2



- Why a CDA: Prerequisite for any exchange of confidential information
  - Intention is to regulate conditions for the exchange of confidential information during the early phase until another contract comes into force\* (e.g. collaboration contract with confidentiality terms)
- Make sure that all people having access to the confidential information at your entity/institution know about the confidentiality of stored relevant information – and keep specific handling rules
  - Fraunhofer guideline “Informationsklassifizierung” containing labelling obligations for information handling
- Mutual/one-way
  - Does your entity also want to disclose confidential information?

\* Do not mix CDA content with that of collaboration contracts (e.g. IP foreground ownership terms)

# Typical contracts in technology transfer

## CDAs/NDAs - 3



- Contract partners
  - Contracting party must be identical with the information exchange party (carefully check the addresses, names and legal form!)
  - Frequently discussed: What affiliates do we want to accept as allowed recipients? Consider impact of foreign legal systems and impact on information flow control
- Scope:
  - Define the scope/technology field of relevant confidential information as clearly and detailed as possible – this is where your TTO/legal manager needs your comprehensive support
  - Consider defining confidential information you don't want to receive (e.g. to avoid unwanted blending with own research results you later want to publish)

# Typical contracts in technology transfer

## CDAs/NDAs - 4



- Technical definition of “confidential information”
  - Confidential information should always be labelled as “confidential” - Option in case of verbal information exchange: Written summary exchanged AFTER verbal information exchange
- Validity period of the CDA plus continuation of obligation to keep information exchanged under the agreement as “confidential”
  - Be aware the difference! Validity period: information exchange period; Follow-up time: No exchange anymore - already exchanged info to kept confidential
  - Up to 10 yrs total CDA lifetime are usual - make sure to keep obligation during that time and consider staff changes etc.
  - If not already present – establish a contract management at your institution which has an eye on such things



# Typical contracts in technology transfer

## CDAs/NDAs - 5

- Applicable law

- Most frequently occurring reason for long discussions/negotiations
- Do not accept foreign law that you don't know in detail

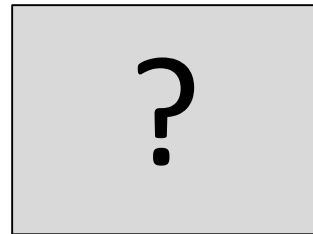


- Copies

- If the CDA draft foresees that all copies made must be destroyed on demand → Consider what you really can realize (e.g. not applicable for IT backups!!)

- Violation of CDA terms

- Do not overestimate your options in case your contract partner discloses your confidential information to third parties without permission
- In such cases, you are certainly obliged to claim compensation → But it often turns out to be difficult to demonstrate a concrete loss



# Typical contracts in technology transfer

## License agreements - Basics



- Some IP (e.g. secret know-how) = Owner keeps it confidential, thus avoiding use by others
- IPR (e.g. patent) = Owner can prohibit technology use by others for a limited period of time\* in exchange for making the invention known to the public
- License = IP/IPR owner grants use rights to another party (= licensee)
  - Note: Basically, you can grant a license (“Nutzungserlaubnis”) for everything what is in your possession, including secret know-how!
- License agreement = Defines conditions under which licensor grants license to licensee in exchange for license fees

\* E.g. patent: 20 years starting from priority date

# Typical contracts in technology transfer

## License agreements – License types



Advice: Always try to limit license content in any possible regard, keep revenue potential for further licenses!

- **Kind of licensed IP/IPR:**
  - Patent, Know-How etc. → Often: Combinations
- **Type of allowed use:**
  - What does “use” exactly mean? E.g. manufacturing, distribution license
- **Allowed field of use:**
  - What products, technology areas are allowed
- **Geographic validation:**
  - In what countries is licensee allowed to use the IP
- **Allowed user number:**
  - Single use (unlimited number of licenses can be granted) “non-exclusive”
  - Sole (ONE license holder/licensee AND licensor can use the IP)
  - Exclusive (ONE license holder and **licensor CANNOT continue using his own IP**)

# Typical contracts in technology transfer

## License agreements – Further important terms



- Sublicenses
  - Grant licensee the right to grant further licenses to third parties → Helps to realize full commercial potential for your IP – but be aware that licensee will negotiate with sublicensees directly – so retain control and ensure revenues
- Maintenance of the IPR/Patent costs
  - Without contractual agreement, licensor is obliged to maintain the IPR → In case of exclusive licenses patent costs are frequently carried by the licensee

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# Typical contracts in technology transfer

## License agreements – Further important terms



- Further development of the licensed technology/product
  - Can happen on both sides (licensor and/or license holder) → It must be agreed about how to deal with new IP
- Liability
  - Never ever give guarantees regarding
    - the absence of older IPR of third parties → Find a suitable formulation that keeps you free from liability if an older IPR suddenly arises (e.g. “will inform licensee as soon as we become aware...”)
    - the usability (successful economic exploitation) of the licensed technology/product

# Typical contracts in technology transfer

## License agreements – License fee basics

- License revenues can become an important revenue source for academic institutions



- Typical components

- Upfront fees (Einstiegszahlung)
- Annual maintenance fees (auch als „Mindestlizenzgebühren“)
- Milestone payments
- Royalties

**50 – 100 Mio. Euro p.a.**

- Also to consider

- Patent costs coverage

Beachte: Royaltys (DE),  
Royalties (EN)

# Typical contracts in technology transfer

## License agreements – License fees



- Upfront payment
  - “Einstiegszahlung” → Hard to negotiate for early stage academic inventions, but you should really try (all further payments bear higher drop-out risk) → E.g. should at least cover already realized patent costs
- Annual maintenance fees (AMF)
  - Usually charged against relevant annual royalties (you won't get both), Important strategic aspect: increasing AMF motivate licensee!!
- Milestone payments/Annual license fees
  - Increasing fee acc. to the achieved development stage
- Royalties
  - 0.5 – 15% of the net sales of licensed products
  - Do not forget “taxable” non-sales revenues of licensee!

Advice: Never accept profit as royalties base (1) and carefully watch costs the licensee want to deduct from net sales in the license agreement definition section (2)

# How to find transfer partners (licensees, sponsors, investors, ...)



## Agenda

- Marketing mix\* – relevant key parameters
  - Marketing process perspective vs. product perspective
- Ways to find transfer partners → Marketing channels
  - Scientific publications/talks given at scientific conferences
  - Press & social media
  - Trade fairs
  - Partnering conferences
  - Cold calling
  - Network

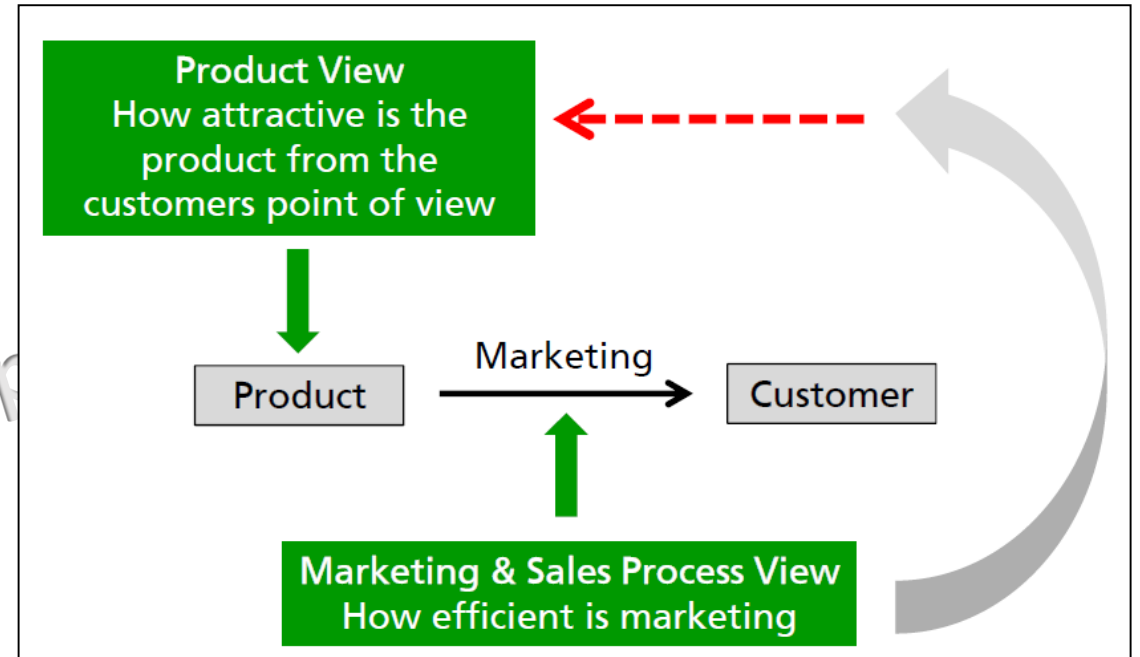
\* Product development/design + pricing strategy/conditions + distribution/communication



# How to find transfer partners

## Marketing process vs. product perspective

- Basic TTO marketing/sales process:
- There are two key parameters/perspectives to watch/to control
  - Marketing process view
  - Product perspective
- In a typical TTO environment, the product perspective sometimes is underestimated and often uncoupled from TTO activities
  - Thus, consider both perspectives when setting-up optimal technology transfer activities



# How to find transfer partners

## Marketing process perspective



- How to improve marketing processes?
  - Key questions: How to find customers? How efficient is marketing?
- General advice\*:
  - Do not forget the customer after the 1st asset/service has been sold...
  - Important role of an intensified intra-organizational communication (e.g.: get your TTO knowing about your work as early as possible)
  - Optimize marketing channels usage
  - Marketing must be a continuous process
  - Exploit the true customer data value (CRM systems, systematic approaches to select target customers etc.)

\* Discussion of marketing channels follows

# How to find transfer partners

## Product perspective



- Product attractiveness = most important transfer success factor!!!
- Customer value: What additional (risk-adjusted) value does it realize for the customer compared to existing solutions?
- How to optimize product attractiveness? And when to start?
  - **Know** your target customers and their needs/demands/wishes/problems
    - Primary (research market) market (e.g. licensee for a drug candidate)
    - Secondary (enduser) market (e.g. patient/health insurance)
  - **Know** the value of your product by knowing about USPs of your solutions compared to offers from competitors/alternative products
  - Consider market demands and potential USPs before R&D project start and during project conduct, implement customer feedback as early as possible

# How to find transfer partners

## Market analysis – Useful information sources



- How to „know“?
  - Review articles, general newsletters\* and newsletters published by inter-trade organizations\*\*, attending talks at area-specific conferences (e.g. ARM and ISCT meetings, BIOs)
  - Market reports offered by many companies (very expensive, ~ 5k€ - but often publish free of charge abstracts)
  - Commercial databases (e.g. Global Data, very expensive, 10-15K€ p.a. for basic modules – but very useful if one can afford)
  - Statista (basic account free of charge)
  - Unternehmensregister\*\*\* and company filings search at SEC\*\*\*\*

\* E.g. Fierce Biotech; \*\* E.g.: VfA, Biosaxony, ARM, ISCT etc.; \*\*\* [www. unternehmensregister.de](http://www.unternehmensregister.de);

\*\*\*\*<https://www.sec.gov/edgar/searchedgar/companysearch.html>

# How to find transfer partners

## Mrkt. Channels - Scientific publications/conferences



- Scientific publications effectively support marketing efforts
  - Research-oriented companies usually follow the state of research in their respective technology area closely – thus they should become aware your technology based on publications in high-ranking journals
- Even more promising are talks given at relevant scientific meetings
  - Most of the larger conferences enjoy substantial industry participation, at least at technology scout level
  - Good channel for assets and high-tech based service offers



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# How to find transfer partners

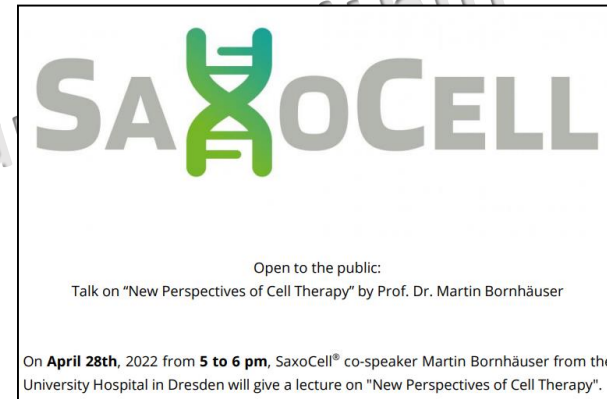
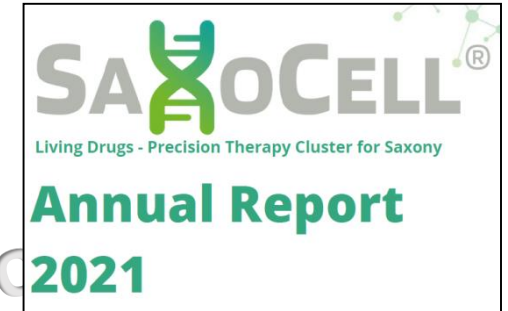
## Marketing channels - Press/social media



- Generally helpful to facilitate transfer by creating public awareness – but pretty much depending on the type of activity and kind of asset/service offer:

- Printed media
- Web presence
- Newsletters
- Press articles
- Social media

- Requires close collaboration between scientists, TTOs and local press offices!



# How to find transfer partners

## Marketing channels - Trade fairs

- Examples: MEDICA, BIOTECHNICA, ACHEMA, LABVOLUTION etc.
  - Having a booth at a trade fair can be very expensive (>10k€)
    - cost/benefit ratio (costs/number of generated high value contacts) sometimes rather bad
- Some of these trade fairs are very big (e.g. MEDICA 6k exhibitors) – thus think of how you would like to differentiate from all the other booths, to attract enough attention for your booth
  - Important role of items/exhibits – sometimes difficult for pharma assets



# How to find transfer partners

## Marketing channels - Partnering conferences 1



- Examples: BIO conference series (several events, global event + events focusing on specific regions), BioFIT (France, Europe), JPM/Biotech Showcase (global and US)
- Specific conference format in life sciences/pharma which is dedicated towards bringing offerers and potential customers/partners together efficiently
  - Many conference models, often combined with exhibition/lecture program
  - New: „partnering track“ at scientific conferences (e.g. ARM, ISCT AM)
- **Not really cheap but in optimal case best cost/benefit ratio at all – no other conference type can deliver so many qualified contacts and sales pitches**
- Requires in-depth preparation as well as labor-intensive conduct and follow-up



J.P.Morgan

**BIOTECH  
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# How to find transfer partners

## Marketing channels - Partnering conferences 2

- „Partnering“ – pre-scheduled 30min meeting with a potential partner
- Process:
  - 1. [*~2m PTE*] Enter company/offer profile in partnering DB
  - 2. [*starting 2m PTE*] Send meeting requests
    - 2.1. Other participants will contact you in case of interest
    - 2.2. Go through the other profiles contact potential partners too
  - 3. [*starting 1m PTE*] Meetings scheduled automatically
  - 4. [*at the conference*] Attend meeting, introduce your asset
    - Exchange contact data (business cards), agree on meeting follow-up
  - 5. [*starting after the conference*] Meeting follow-up (e.g. answer questions, provide further info, send CDA draft)



Cell & Gene Meeting on the Mediterranean 2022

CELL GENE  
MEETING ON THE MED

SAHOCELL®  
Fraunhofer  
IZI

CONTACT SHEET

I  
Partner: \_\_\_\_\_  
Time: \_\_\_\_\_  
Location: \_\_\_\_\_  
Background: \_\_\_\_\_

Date:  Wednesday, April 20  
 Thursday, April 21  
 Tuesday, April 26  
 Wednesday, April 27

Conversation Notes:  
\_\_\_\_\_  
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# How to find transfer partners

## Marketing channels - Partnering conferences 3



- Things to be aware of:

- Not every asset is well-suited at BIO level – prepare your portfolio carefully
- Maintain high communication standards (avoid spam-type messages)
- Learn to deal with difficult meeting partners
- Plan enough staff and time resources to allow professional preparation
- A substantial share of meetings won't directly result in project closure – stay on the ball\*, and take advantage of negative meetings as well (every feedback is valuable)
- Give comprehensive feedback to your scientists – positive and negative
- Quality, speed & partner orientation of the follow-up are key success factors

- Partnering conferences might be more suitable for BD/TTO people (combining several assets of their respective organization in one portfolio) **but can be a valuable experience and time invest for scientists too**

\* There are project examples at IZI where the deal finally got closed > 4 years after the initial contact

# How to find transfer partners

## SaxoCell® offer



- The SaxoCell® HUB team is going to attend several partnering conferences, trade fairs and other events 2022 - 2024



- We'll be happy to introduce your CGT-related assets, platform technologies and services there towards potential customers, partners and investors → Please contact us in case you're interested

# How to find transfer partners

## Marketing channels - Direct contact

- Definition: Sales pitch with a potential partner who has never interacted with the sales person before → But differentiate from standard „cold calling“ = „unerwünschte Telefonanrufe“
- Typical process:
  - Market analysis to identify potential customers/partners
  - Selection of target population, contact data research
  - Send inquiry to selected partners (e.g. Email, contact form, LinkedIn), Follow-up
- Always keep ethical questions, employer branding and legal limits in mind → use business-related contact addresses only (e.g. company BD contacts, relevant social networks) → Can be a very efficient marketing channel, then



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# How to find transfer partners

## Network

- Can be a valuable source of potential customer contacts
- Use every chance to expand your network
  - Implement work-related routine processes, e.g. get used to invite people you met at a conference the same day
- But care the network quality too (carefully select whom to invite)
- Important role of social networks:



Well-suited for tech transfer matters but focused on German contacts

International professional network

Best suited for private area or in order to reach (wide/broad) public



## Thank you for your attention!

For any questions and further information on technology transfer or just for discussing new ideas for transfer please contact your local HUB transfer person:

Dorit Teichmann (TUD, [dorit.teichmann@tu-dresden.de](mailto:dorit.teichmann@tu-dresden.de))

Luisa Brückner (TUD, [luisa\\_linda.brueckner@tu-dresden.de](mailto:luisa_linda.brueckner@tu-dresden.de))

Stefanie Binder (Universität Leipzig, [stefanie.binder@medizin.uni-leipzig.de](mailto:stefanie.binder@medizin.uni-leipzig.de))

Sophia Kolbe (Fraunhofer IZI, [sophia.kolbe@izi.fraunhofer.de](mailto:sophia.kolbe@izi.fraunhofer.de))

Thomas Tradler (Fraunhofer IZI, [thomas.tradler@izi.fraunhofer.de](mailto:thomas.tradler@izi.fraunhofer.de))