

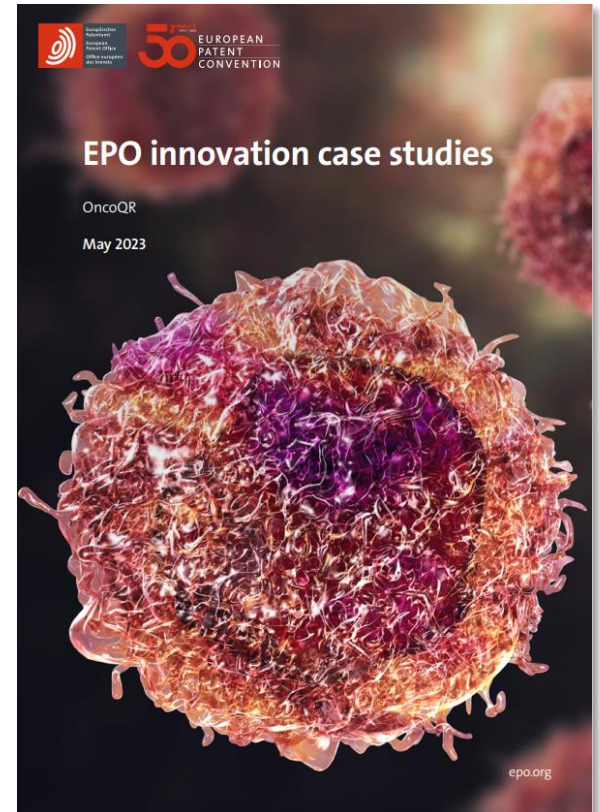
From Lab to Market:
Successful Tech Transfer Journeys Driving Innovation Against Cancer

OncoMark: Smarter Prognostic Tests for Early-Stage Breast Cancer
Ciaran O'Beirne, Head of Knowledge Transfer – University College Dublin



Agenda

- **Setting the Scene:** EPO Innovation Case Studies
- **OncoMark:** Smarter Prognostic Tests for Early-Stage Breast Cancer
- **Outlook:** Upcoming Training Sessions & Joint Activities

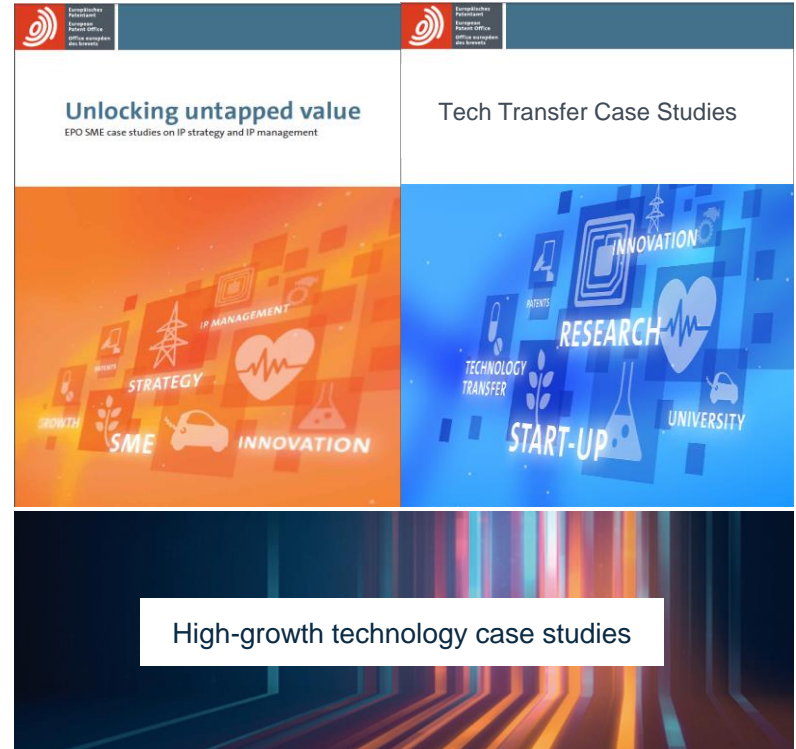


Setting the Scene: EPO Innovation Case Studies

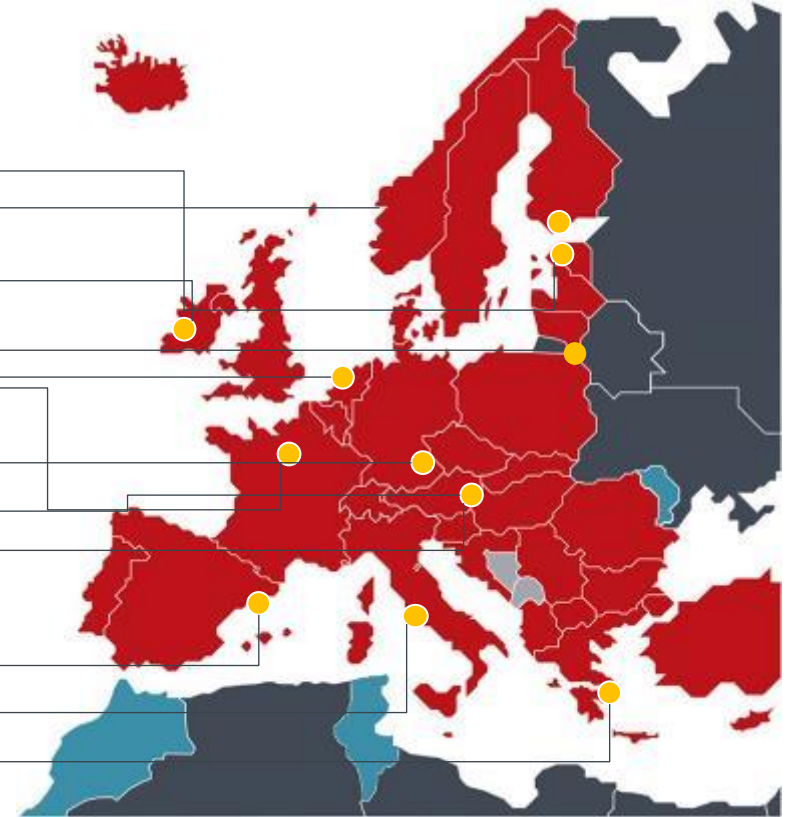
EPO innovation case studies

- Over 30 case studies on how European SMEs can create strategic value from patents
- How patents facilitate tech transfer from European research institutions
- Diverse tech transfer and business model scenarios
- Good practices in IP strategy and IP management

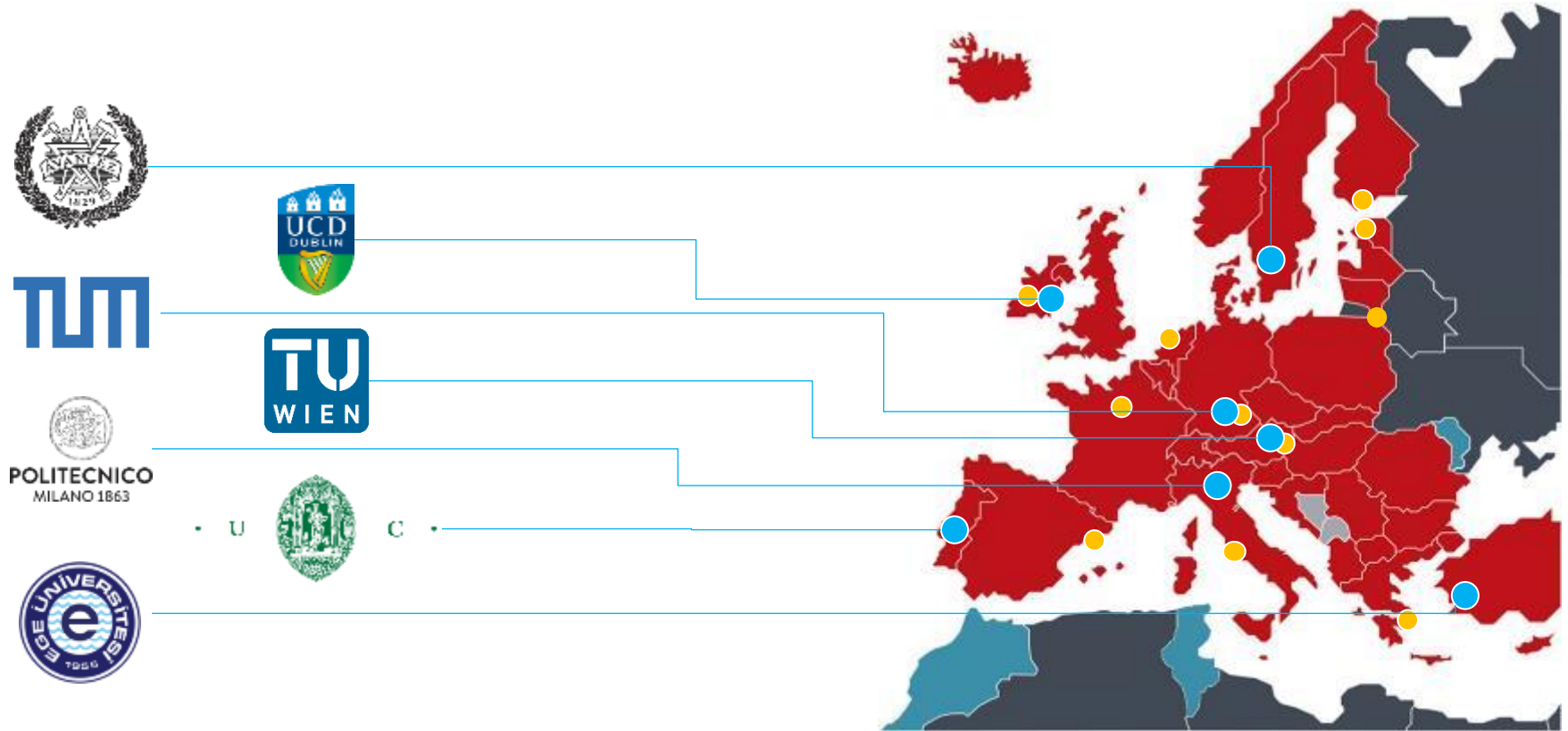
www.epo.org/case-studies



EPO SME case studies



EPO technology transfer case studies



EPO High-growth technology case studies



Licensing

IonQ (IT Services - USA)	+
Unilab (pharmaceuticals - Philippines)	+
Dispelix (waveguide displays - Finland)	+

Growth financing

Roboze (additive manufacturing - Italy)	+
Plasmapp (medical electronics - South Korea)	+
DyeMansion (additive manufacturing - Germany)	+

Build-to-sell

Kindred Bravely (fashion, e-commerce - USA)	+
Dr Paul Atherton (fibre optics, energy storage, biotechnology - UK)	+
APS Technology Group (electrical machinery, software - USA)	+
Bender MedSystems (biotechnology - Austria)	+

Open innovation

Philips (Medical devices - the Netherlands)	+
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3 new case studies on IP to fight cancer

Damae Medical (FR)



Main product

Business model

Advanced medical imaging system

Product sales and related services

OncoMark (IE)



Main product

Technology transfer model

Diagnostic tests

University spin-off

Company acquisition

OncoQR (AT)



Main product

Technology transfer model

Immunology vaccines

Technology licensing

OncoMark: Smarter Prognostic Tests for Early-Stage Breast Cancer



EPO TECHNOLOGY TRANSFER CASE STUDIES
OncoMark

Smarter prognostic tests for early-stage breast cancer

Abstract

OncoMaSTR is a multi-parameter prognostic test for early-stage breast cancer that can rapidly, accurately and reliably stratify patients into low or high risk of cancer recurrence. This aids clinicians confidentially determine the best treatment options, thus avoiding overtreatment with unnecessary and aggressive chemotherapies.

The test is based on patented technology that arose from a collaboration between Prof. Adrian Bracken at Trinity College Dublin (TCD) and Prof. William Gallagher at University College Dublin (UCD) in 2012 and was then exclusively licensed to OncoMark, a UCD spin-out, in 2014. OncoMark subsequently developed and validated the test which led to an acquisition of the company by a large US firm and the creation of a new start-up company.



Cepheid's GeneXpert platform, which will be used to deliver the OncoMaSTR technology to the clinic

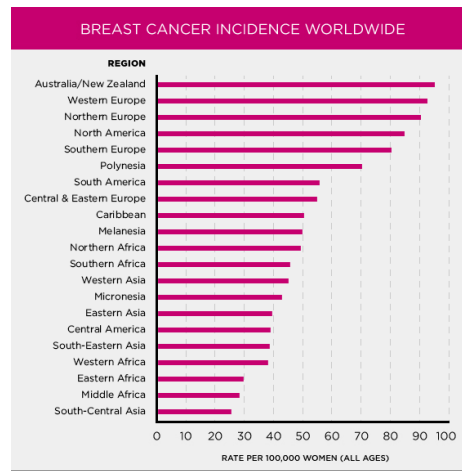
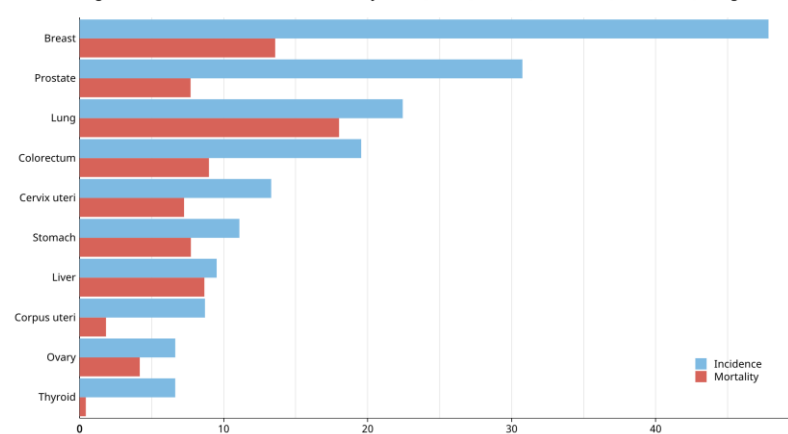
Background

Breast cancer is the most common cancer among adults, and it is the first or second leading cause of female cancer deaths in 95% of countries:

- 2.3 M women diagnosed with breast cancer in 2020
- 685,000 deaths globally

Source: World Health Organisation (WHO)

Estimated age-standardized incidence and mortality rates (World) in 2020, worldwide, both sexes, all ages



Background – market trends

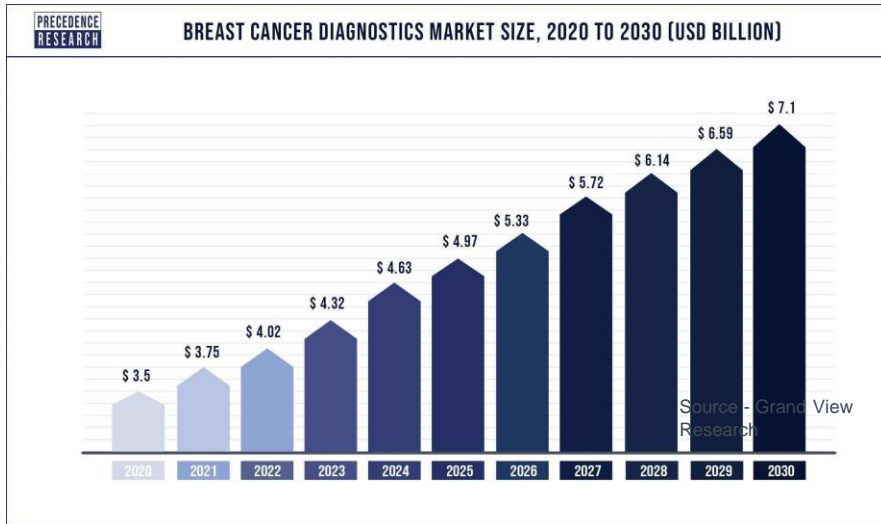
Global breast cancer diagnostics market

size valued at ~USD 4.0 billion in 2022

and is expected to expand at a compound

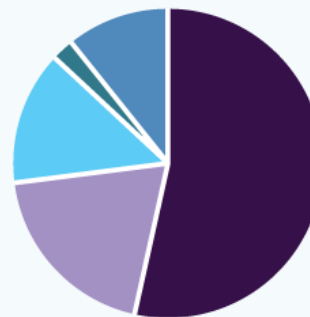
annual growth rate (CAGR) of 7.0% to the

end of the decade



Global Breast Cancer Diagnostic Market

share, by type, 2020 (%)



● Imaging ● Biopsy ● Genomic Tests ● Blood Tests ● Others

Background

- Patient outcomes are consistently improving
- However, the heterogeneous nature of breast cancer presents significant clinical challenges in determining disease progression, particularly when the disease is detected at an early stage
- By default, the majority of patients are prescribed endocrine therapy in combination with chemotherapy yet chemotherapy may only benefit around 30% of women with early-stage breast cancer
- Despite this, many women are still prescribed chemotherapy even though it can have significant physical, emotional and psychological side-effects.

Main players involved in the technology transfer and their roles

- **University College Dublin and Trinity College Dublin – leading research institutions**
- **Technology Transfer Offices (TTOs) – experienced staff in both institutions**
- **OncoMark – a UCD spin out company focused on developing cancer diagnostics**
- **Cepheid – a leading American molecular diagnostics company**
- **OncoAssure – a spin off company developing new panels of cancer biomarkers for applications in prostate cancer, melanoma and other cancers**

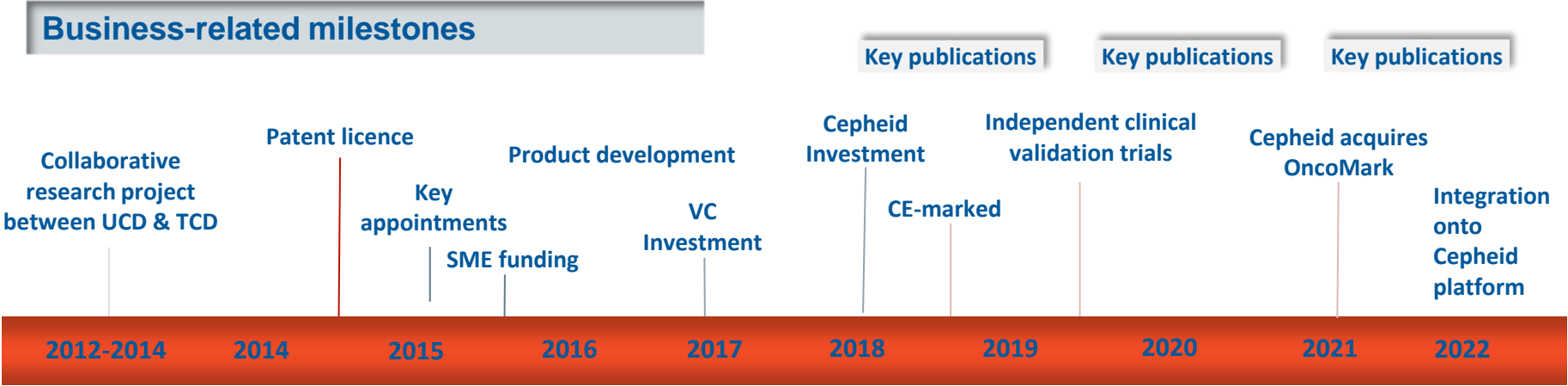
Overview - 10+ year journey starting from research to product

- Research collaboration between University College Dublin (UCD) and Trinity College Dublin (TCD) led to the development of a patented **prognostic test for early-stage breast cancer** called **OncoMasTR**
- Technology licensed to **OncoMark** who developed the OncoMasTR product to rapidly and accurately stratify patients into low or high risk of cancer recurrence
- OncoMark acquired by **Cepheid**
- Product due to be launched as **Xpert® Breast Cancer Insight** by Cepheid



OncoMasTR technology - timeline

Business-related milestones



IP-related milestones

Analysis of IP issues

IP Management - How and by whom?

- **Creation** jointly developed by UCD and TCD
- **Selection** led by TTOs in UCD and TCD
- **Protection** led by TTOs in consultation with OncoMark
- **Value creation** led by OncoMark and Cepheid

IP management before, during and after the technology transfer

- **Background IP**
 - UCD and TCD – research expertise in oncology and experienced TTOs
 - OncoMark – expertise and know how in diagnostics and prognostics
- **Foreground IP**
 - Pre-licence –protection strategy led by UCD and TCD
 - Post licence – initially led by OncoMark in consultation with UCD and TCD. Now led by Cepheid..

Analysis of strategic issues

- Leveraging research funding
- Experienced management
- Clinical validation
- Partnering with a larger company



Prof William Gallagher
Co-founder of OncoMark



Des O'Leary
CEO, OncoMark

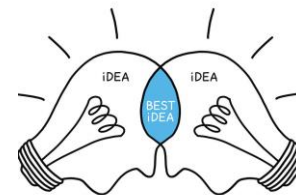


Scott Campbell
Senior VP and General Manager, Oncology, Cepheid

Key Lessons

Collaborate to innovate

- A research collaboration that brings together the diverse expertise and interests of partners can lead to groundbreaking inventions with commercial potential.



Research funding

- Research grants can give time and flexibility to develop technologies and leverage collaborations while at the same time prevent early dilution of equity in the spin-out company.



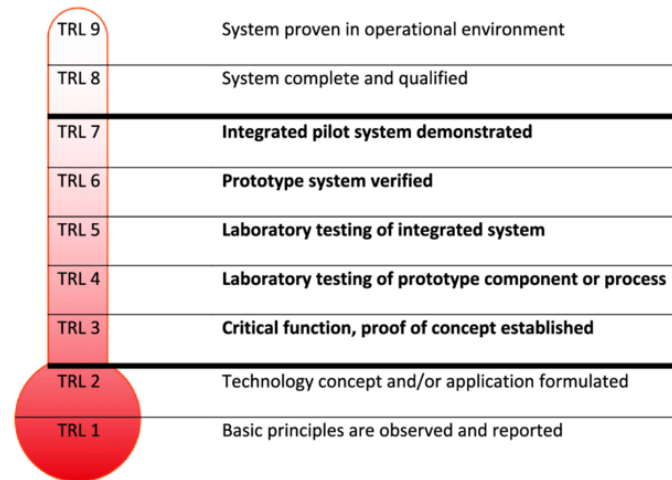
Key Lessons

Spin-out to increase Technology Readiness Level (TRL)

- For university inventions, licensing the technology to a spin-out company can help increase the TRL and the probability of a successful commercial outcome.

Patented IP is a key asset

- Strong patent protection is an essential asset for a life science spin-out company in helping to secure initial investment.



Key Lessons

Experienced management

- The appointment of a commercially experienced CEO can be key to the company's ability to raise investment and drive product development.

Networking

- Attendance at medical/industry conferences is essential to keep abreast of market trends and to network with key stakeholders. Having a network of collaborators can also greatly assist clinical validation.

Clinical validation

- Clinical validation is usually a prerequisite for partners to consider the business opportunity. Partnering can be instrumental to achieve that at reasonable costs.

Role of TTO

- **Skilled and experienced staff**
 - Quickly agreed a Joint Ownership Management Agreement (JOMA) when IP was created.
- **Engage external patent attorney with domain expertise**
- **Good relationship with researchers and company**
- **Pragmatic approach to legal agreements**
 - Benchmark financial terms against industry norms.
 - Recognise the tangible and intangible assets of the licensee company.
 - Agree key development and commercial milestones. Be willing to amend as necessary.

Let's talk!



Outlook:

Upcoming Training Sessions & Joint Activities

“Talk Innovation” podcast

Listen in!

<https://www.epo.org/news-events/podcast.html>



You'll also find the podcast episode in the individual case study section sections.



OncoQR (biotechnology - Austria) – NEW

Boosting the immune response to fight cancer

- The end of an R&D project or business venture need not mean the end for the technology involved as long as the main actors remain committed and maintain control over IP rights.
- Setting up licence agreements combining multiple types of payments may safeguard a “portfolio of commercial possibilities” and can maximise the value of the technology for the parties involved.
- A system in which licensing agreements include the right to use improvements made by other licensees is a great way to continuously increase the value of a platform technology and, simplify negotiations in the long term.
- Broader protection of the platform through a combination of patents and trade secrets can provide better protection against infringement and also extends the protection period.

Technical field	Country	Main product	Technology transfer model
Biotechnology	Austria	Immunology vaccines	Technology licensing

Two scientists turned entrepreneurs have advanced a technology platform for immunology vaccines, enabling treatments for allergies and cancer. Based on a strong patent portfolio, they founded OncoQR and several other start-up companies for product development and technology commercialisation. IP was essential for attracting investment, as well as generating licensing revenues early on, in order to finance the long time-to-market periods that are typical in biotechnology.

Type of material	Download
Case study	<input type="checkbox"/> OncoQR (EN)
Podcast	<input checked="" type="checkbox"/> A proprietary platform to fight cancer: a technology transfer case study (EN)

From Lab to Market: Recordings 2022

From Lab to Market - RECORDINGS 2022

Based on the set of seven technology transfer case studies, the seminar series aims to illustrate how patents facilitate technology transfer from R&D-conducting organisations and promote market success. Covering a range of economic sectors, countries, and types of technology transfer, each case study provides key takeaways for stakeholders in universities, public research organisations and businesses.



07 JUN
2022

Training and workshops
EU - From Lab to Market - Successful Technology Transfer Journeys - Case: OXEON RECORDING

Live streaming available

29 JUN
2022

Training and workshops
EU - From Lab to Market - Successful Technology Transfer Journeys - Case: Atlantic Therapeutics RECORDING

Live streaming available

12 JUL
2022

Training and workshops
EU - From Lab to Market - Successful Technology Transfer Journeys - Case: Dermis Pharma RECORDING

Live streaming available

13 SEP
2022

Training and workshops
EU - From Lab to Market - Successful Technology Transfer Journeys - Case: Blubrake RECORDING

Live streaming available

18 OCT
2022

Training and workshops
EU - From Lab to Market - Successful Technology Transfer Journeys - Case: Perceive3D RECORDING

Live streaming available

03 NOV
2022

Training and workshops
EU - From Lab to Market - Successful Technology Transfer Journeys - Case: fos4x RECORDING

Live streaming available

08 DEC
2022

Training and workshops
EU - From Lab to Market - Successful Technology Transfer Journeys - Case: Cubicure RECORDING

Live streaming available

[Training Cooperation with EPO](#)

Patent protection for EU funding beneficiaries

Training cooperation with the European Patent Academy of the EPO

Patent protection for EU funding beneficiaries

This lecture series, organised in co-operation with the European Patent Academy, addresses the IP-related aspects of EU-funded projects in five areas: medical technologies, artificial intelligence, green technologies, digital communication and biotechnology.


It introduces the main aspects of IP management: notably IP ownership, protection and exploitation. Each lecture explores the interface between patents and the respective technical field. The lectures may be of interest to a variety of audiences, from researchers to technology transfer officers. The online sessions include Q&A and are complemented with optional self-paced courses.



13
JUN
2023

Training and workshops


EU - Webinar EPO Coop: Patent protection for EU funding beneficiaries - Green Technologies

 Live streaming available

24
OCT
2023

Training and workshops


EU - Webinar EPO Coop: Patent protection for EU funding beneficiaries - Digital communication

 Live streaming available

15
NOV
2023

Training and workshops

EU - Webinar EPO Coop: Patent protection for EU funding beneficiaries - Biotechnology

 Live streaming available

Registration: www.ec.europa.eu/ip-helpdesk

High-growth technology business (HTB) community

Goals

- Support for decision-makers & IP professionals in tech driven enterprises
- Sharing how intellectual property can support their business
- Training in IP strategy, operational excellence, financing and strategic transactions

[linkedin.com/company/htbcommunity](https://www.linkedin.com/company/htbcommunity)
epo.org/sme

Join the community

- Stay updated on best practices
- Get access to training material
- Learn about upcoming offers



European
IP Helpdesk



Upcoming HTB events



HTB forum: Build-to-sell

29 June 2023, 17:00-19:00 (CEST)

✓ Case study presenter: Ghassan Kassab, Founder & CEO of 3DT Holdings & California Medical Innovations Institute (USA)

✓ International expert panel chaired by Juergen Graner, Founder and CEO, Globalator (USA)

Register: [Event Build-to-Sell](#)

Deadline: 29 June 2023

HTB forum: IP strategy and management

30 November 2023, 10:00-12:00 (CET)

✓ Case study presenter: Thomas Nieraad, co-founder and Board Chair, Connect One Digital AG

✓ International expert panel chaired by Prof. Alexander Wurzer, Director IP Management Education, CEIPI

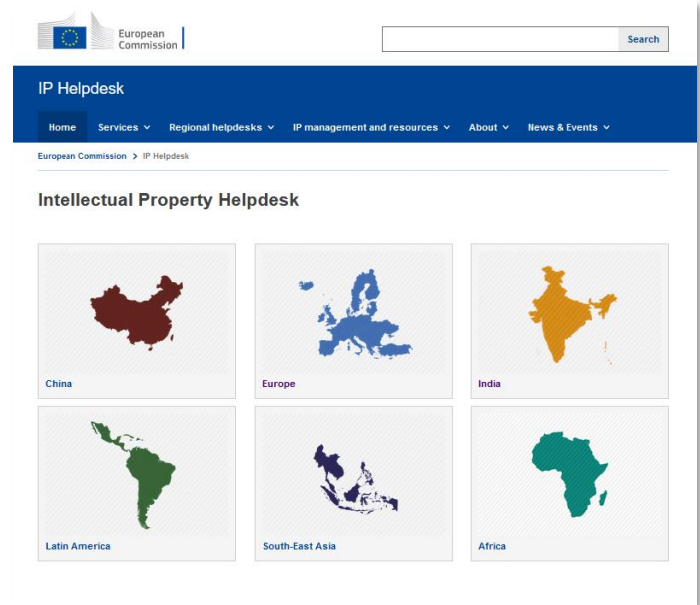
Register: [Event IP Strategy and Management](#)

Deadline: 30 November 2023

European IP Helpdesk

- **Service initiative** of the European Commission
- Addressing **current and potential beneficiaries of EU-funded projects and EU SMEs**
- **Free-of-charge first-line support** on intellectual property (IP)
- Hands-on IP and innovation management support
- International **pool of IP experts** from various thematic fields
- Unique **cooperation scheme with the Enterprise Europe Network**: 44 ambassadors from 27 EU countries

Visit: www.ec.europa.eu/ip-helpdesk



Keep an eye out for updates

The screenshot displays the European Commission website with several key sections:

- Small and medium-sized enterprises:** A section highlighting support for SMEs, including a video of a man speaking and text about the Horizon Europe program.
- Innovation case studies:** A section featuring a video of a person working on a computer, with text about the Horizon Europe program and its focus on innovation.
- High-growth technology business initiative:** A section with a video of a person speaking, promoting support for decision-makers in high-growth technology businesses.
- www.epo.org/sme:** A prominent URL for SME-related information at the EPO.
- EPO newsletter 19/2021:** A section for the newsletter, featuring a photo of a person and text about the newsletter's content.
- Talk Innovation:** A red circular logo with the text "TALK INNOVATION" and "EUROPEAN COMMISSION".
- LinkedIn:** A LinkedIn profile for "High-growth technology business initiative" with a video of a person speaking.
- Facebook:** A Facebook post from "European Commission" with a video of a person speaking and text about the high-growth technology business initiative.
- Twitter:** A tweet from "European Commission" with a video of a person speaking and text about the high-growth technology business initiative.
- Instagram:** A post from "European Commission" with a video of a person speaking and text about the high-growth technology business initiative.

The screenshot displays the European IP Helpdesk website with several key sections:

- European IP Helpdesk:** The main header of the website, featuring the European Commission logo and a search bar.
- Home Services:** A navigation menu with options for Home, Services, Regional helpdesks, IP management and resources, About, and News & Events.
- European Commission > IP Helpdesk > Regional helpdesks > European IP Helpdesk:** A breadcrumb trail indicating the current page location.
- European IP Helpdesk:** The main title of the page, followed by a sub-header: "A first-line intellectual property (IP) service providing free-of-charge support to help European SMEs and beneficiaries of EU-funded research projects manage their IP in the context of transnational business or R&D research and innovation programmes".
- IP Helpdesk:** A secondary header with a search bar and navigation menu.
- Europe - Regular Webinar Schedule:** A section listing regular webinars, including "Webinar Coping with the European Patent Office: From Lab to Market: Successful Technology Transfer Journeys" on 19 OCT 2021.
- Europa - Upcoming events:** A section listing upcoming events, including "EU - Webinar & COPORA Group's 'Growth' Guide to Intellectual Property Protection for Plants" on 20 OCT 2021.
- The European IP Helpdesk Helpline:** A section featuring a video of a lighthouse and a boat, with the text "The European IP Helpdesk Helpline" and "There is! Trollen".
- European IP Helpdesk Newsletter:** A section for the newsletter, with the text "Stay ahead of the innovation game." and "Latest IP News".
- Global Innovation Index 2021: Innovation Investments Resilient Despite COVID-19 Pandemic:** A section for the GII 2021 report, with the text "Public and private investments around the globe increased in 2020" and "Investments in spite of the pandemic and government support".

www.ec.europa.eu/ip-helpdesk

Unitary Patent System

Unifying Europe's market for technology and innovation



ONE patent
for a single
territory of
17 EU member
states



ONE court,
the Unified
Patent Court,
harmonises
case law



ONE market
300 million
consumers;
GDP over
€12 trillion



ONE annual fee
paid in euros to
the EPO



Starts
1 June 2023
[epo.org/
unitary](http://epo.org/unitary)

European Patent Office

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Contact us via training@iprhelphdesk.eu



Training

free online and on-site sessions



Website

frequent updates from the world of IP and innovation



Helpline

confidential treatment of individual IP questions



Publications

practical IP knowledge through high-level publications



Ambassadors

local IP support throughout Europe



Events

info point at key networking events and conferences

Thank you for joining us today!

DISCLAIMER

The European IP Helpdesk provides free-of-charge first-line support on IP-related issues aiming to help current and potential beneficiaries of EU-funded projects, as well as EU SMEs, manage their Intellectual Property assets.

The European IP Helpdesk is managed by the European Commission's European Innovation Council and SMEs Executive Agency (EISMEA), with policy guidance provided by the European Commission's Directorate-General for Research and Innovation (DG RTD).

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