Using Patent Analytics to Identify Technology Solutions to Social Challenges

How can patent information highlight technologies and trends of significance for addressing social challenges?

Geneva
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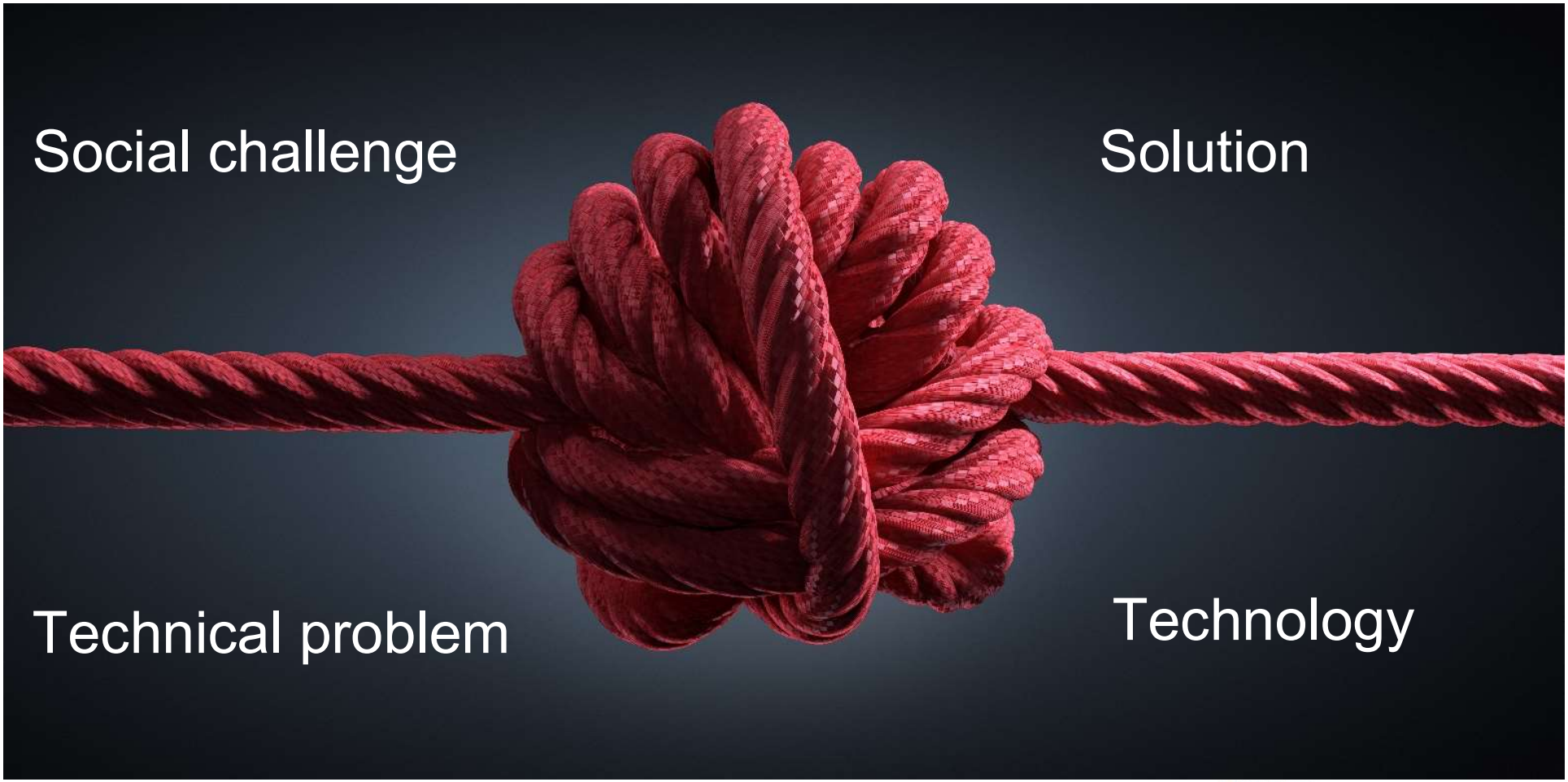
SUSTAINABLE DEVELOPMENT GOALS
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS



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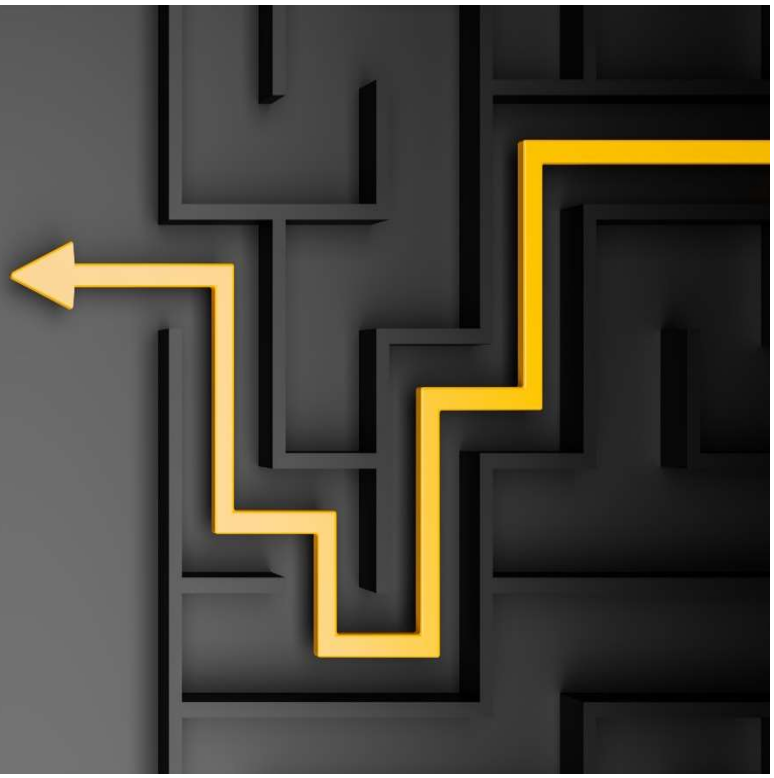
The problem-solution approach

- Inventive step in a patent
- “problem-solved” concept
- The text in the patent document
  - The technology
  - The innovator
  - The market/strategy
  - The impact/benefit



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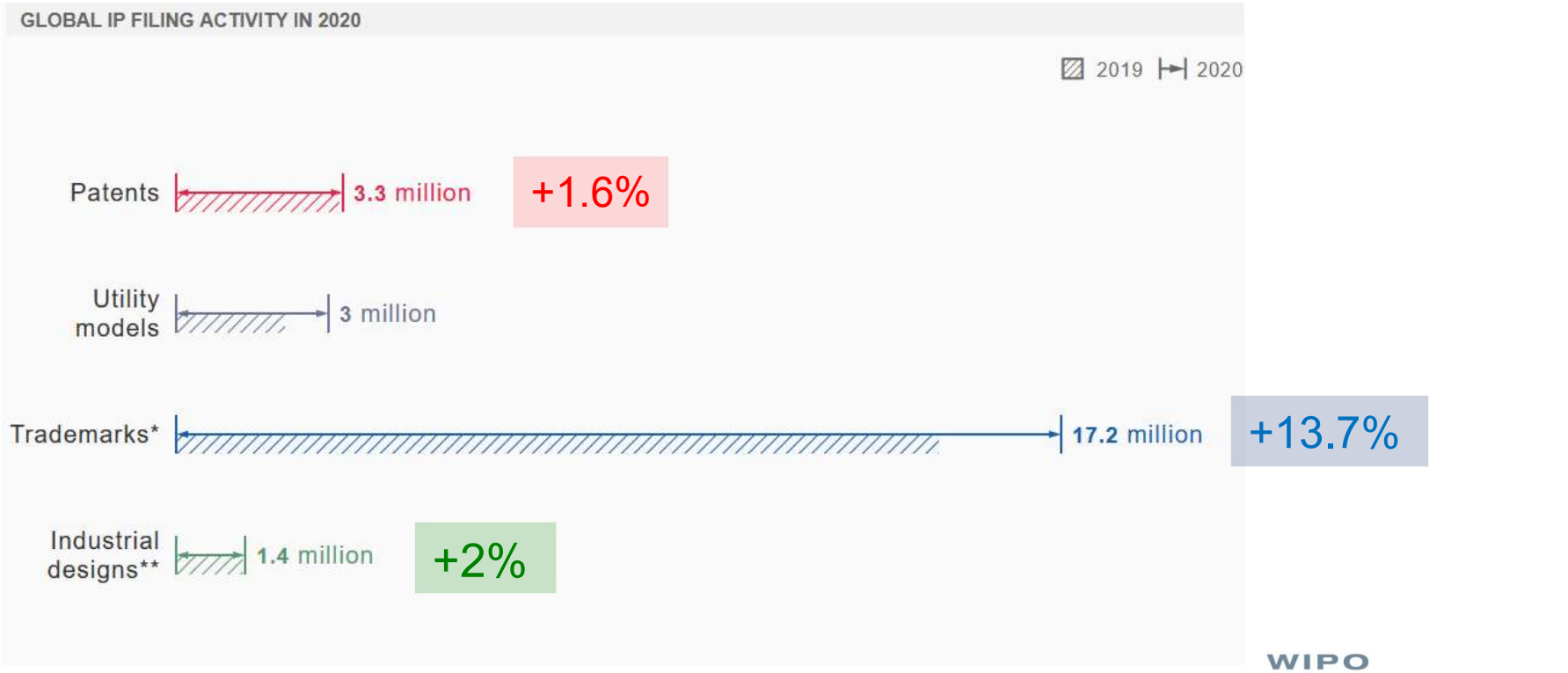
The ever increasing use of the IP system



Source: WIPO World IP Indicators 2021

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Increasing volume & importance of patent information

Generating more data

Collecting more data

(PATENTSCOPE: 100 million patent documents)

Patents:

- source of technical, legal and business information

- recognized indicator of S&T output, innovation and technology trends

Patent analytics: from need to added-value

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Searchable compilation of PLRs

Patent Landscape Reports by Other Organizations

The following patent landscape reports - published by international organizations, national intellectual property offices, non-governmental organizations and private sector entities - are freely available or can be obtained upon request, either free of charge or for a fee.

This list, compiled by WIPO, is not exhaustive and we are continuing to extend it. Please contact us with any recommendations you may have for other reports to be included.

WIPO Patent Landscape Reports

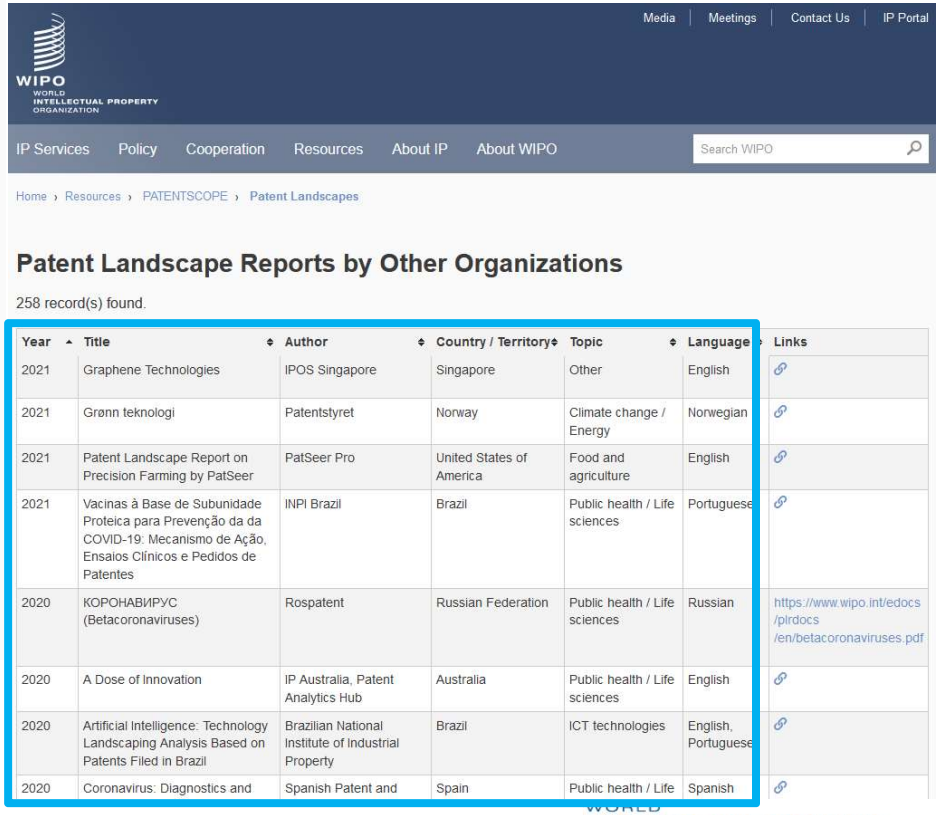
Topic: * * * Any * * * / Climate change / Energy / Food and agriculture / Public health / Life sciences / ICT technologies / Other

Language: * * * Any * * * / English / Finnish / French / German / Japanese / Portuguese

Country / Territory: * * * Any * * * / Australia / Austria / Brazil / Canada / Chile / China / Colombia / Cuba

Keyword

Search



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Patent Landscape Reports by Other Organizations

258 record(s) found.

Year	Title	Author	Country / Territory	Topic	Language	Links
2021	Graphene Technologies	IPOS Singapore	Singapore	Other	English	
2021	Grønn teknologi	Patentstyret	Norway	Climate change / Energy	Norwegian	
2021	Patent Landscape Report on Precision Farming by PatSeer	PatSeer Pro	United States of America	Food and agriculture	English	
2021	Vacinas à Base de Subunidade Proteica para Prevenção da da COVID-19: Mecanismo de Ação, Ensaios Clínicos e Pedidos de Patentes	INPI Brazil	Brazil	Public health / Life sciences	Portuguese	
2020	КОРОНАВИРУС (Betacoronaviruses)	Rospatent	Russian Federation	Public health / Life sciences	Russian	https://www.wipo.int/edocs/plrdocs/en/betacoronaviruses.pdf
2020	A Dose of Innovation	IP Australia, Patent Analytics Hub	Australia	Public health / Life sciences	English	
2020	Artificial Intelligence: Technology Landscaping Analysis Based on Patents Filed in Brazil	Brazilian National Institute of Industrial Property	Brazil	ICT technologies	English, Portuguese	
2020	Coronavirus: Diagnostics and	Spanish Patent and	Spain	Public health / Life	Spanish	

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www.wipo.int/patentscope/en/programs/patent_landscapes/plrdb.html

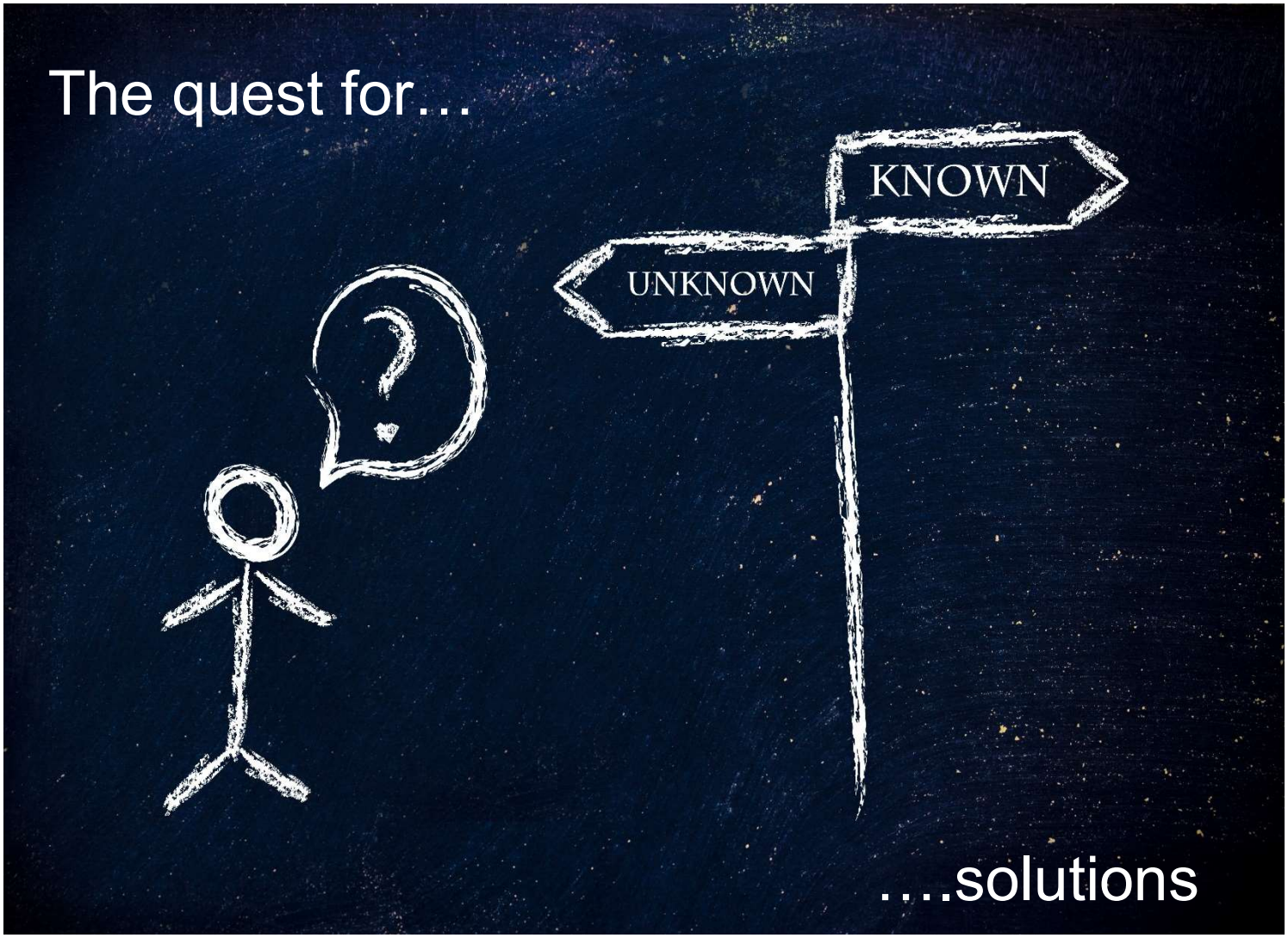
Patent Analytics for….

Decision-makers profiles

- Government
- R&D
- Universities/TTOs
- Start-ups/spin-offs
- SMEs
- (IP) managers
- Inventors
- Investors

Decision types

- Policy discussions/decisions
- R&D decision-making and prioritization
- Investment and collaboration decisions
- Technology transfer
- Competitors monitoring (Competitive Intelligence)
- Technology scouting and whitespaces/business opportunities
- Patent valuation
- Patent portfolio assessment



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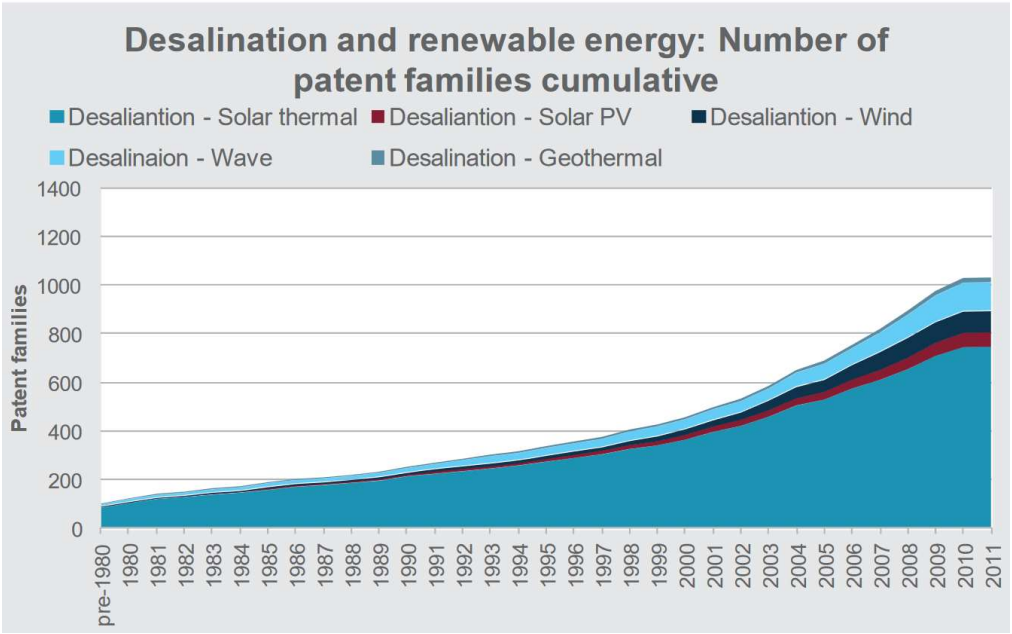
Water desalination and use of renewable energy

Water for drinking and agriculture



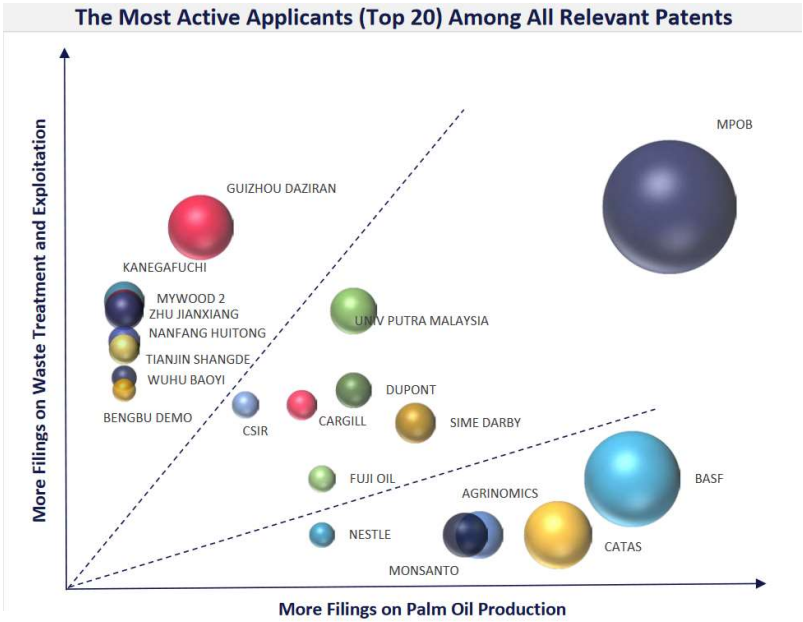
Source: WIPO Patent Landscape Report on Water Desalination using Renewable Energy (2012)

Palm Oil – environmental concerns

Palm oil production waste materials and their applications

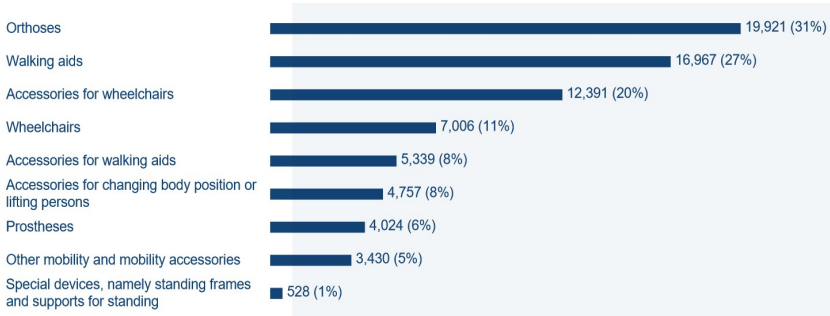
	Extraction of palm oil	Phytonutrients	Other chemicals	Direct fuel	Charcoal	Biodiesel	Adsorbent	Filter	Composite material	Animal feed	Fertilizer	Cultivation structure	Fermentation product	Paper making	Waste water treatment	Mattress/cushion	Other products	Other processing
Palm fiber	2	1		4	2		13	40	70	1	4	65	2	16	7	268	168	32
Palm trunk		2		1	1	1	2		23	1	1	1	6			1	7	3
Palm fronds		6		3	1				8	4	1	1	1	6	1	2	9	
Palm bark		1	1				7											
Empty fruit bunches (EFB)	1	6		5	2	3		1	14	2	6		21	14	1	1	4	4
Palm shell		1	2	5	13		22	2	1	3	1	2	3	3	3	2	6	
Palm oil mill effluent (POME)	3	19		1	3	2	1			2	10		13	1	37			3
Palm kernel shells		2	1	2	10	1		1	1	9	6	1	8	1			3	
Palm kernel cake (PKC)	1	2	1						1	3	1		7					1
Palm ash									7		12	2			2	1		
Biomass, general		35	2	6	6	5	5		20	3	16	6	55	7	2	1	2	2
Waste water															12			
Others	3	1								1			1					

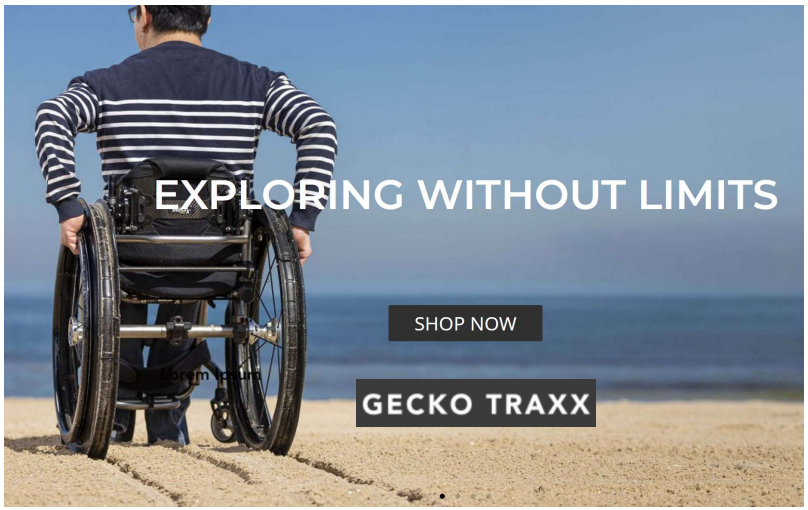
Palm Oil Production/Waste Treatment and Exploitation



Source: WIPO Patent Landscape Report on Palm Oil Production and Waste Treatment and Exploitation (2016)

Assistive Technology – even incremental innovation changing lives





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Source: WIPO Technology Trends on Assistive Technology

Examples of patent analytics addressing specific social, global and local challenges

- Supporting **local manufacturing** decisions

PLR on vaccines for selected diseases

- Supporting **public procurement** decisions for developing countries
- Identifying key patents and **generations of patents (scope of patent protection)**

PLR on antiretrovirals (ritonavir and atazanavir)

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Examples of patent analytics addressing specific social, global and local challenges

- Biodiversity and electronic waste discussions
- Clarifying misconceptions
- Putting IP in perspective

PLR on animal genetic resources

PLR on e-waste recycling

- Supporting local R&D identify **alternative applications/**

  areas for commercialization

Moroccan Office of Industrial and Commercial Property

PLR on microalgae

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When the challenge is known, but not (all) the solution(s)/technology…

- TRIZ and other methodologies
- Text mining/AI
- Tools trying to
  - Identify benefits
  - Find common denominators and transferability of solutions from one domain to another

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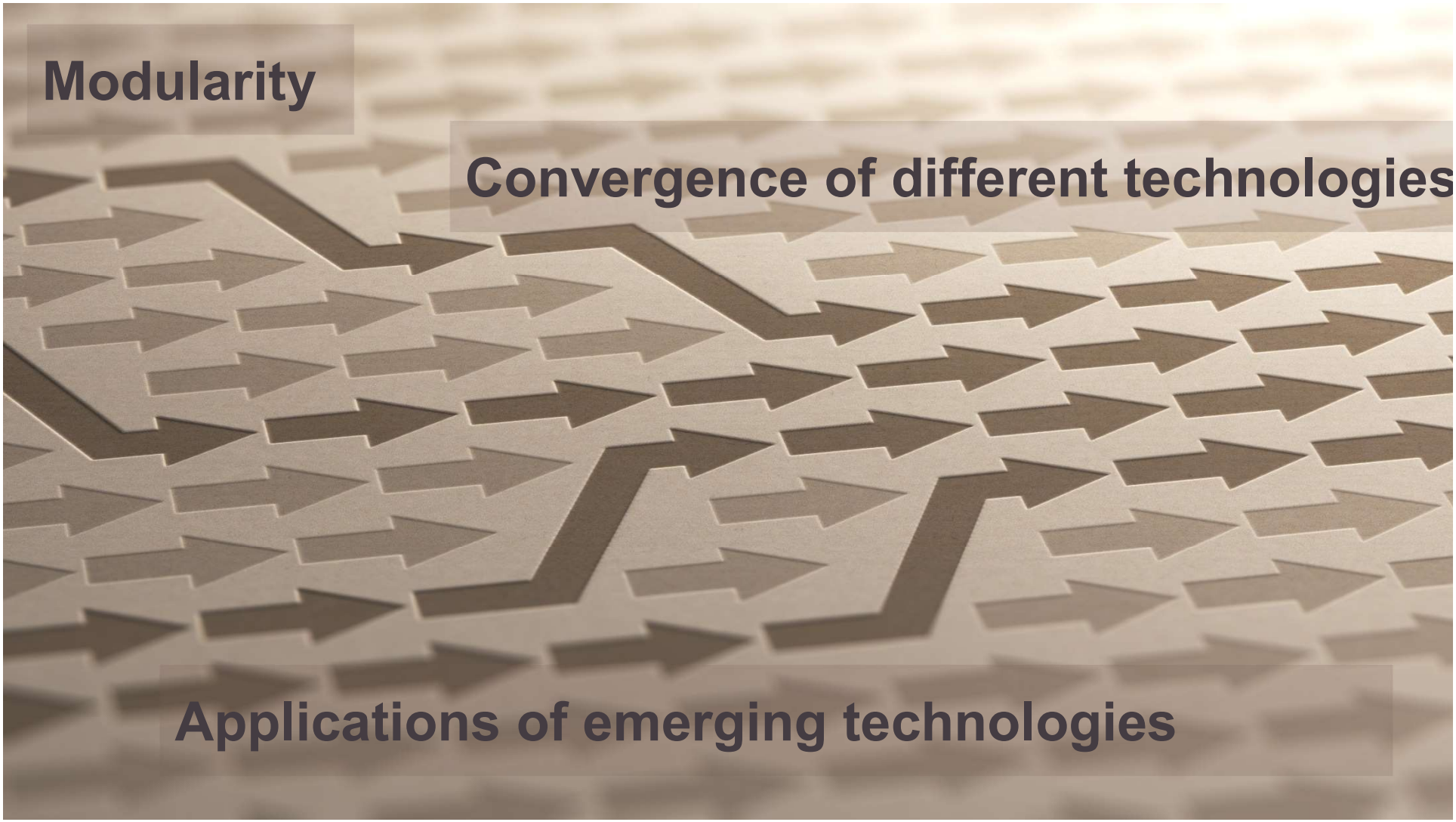

Modularity
Convergence of different technologies
Applications of emerging technologies

Trends which can address social challenges

how?

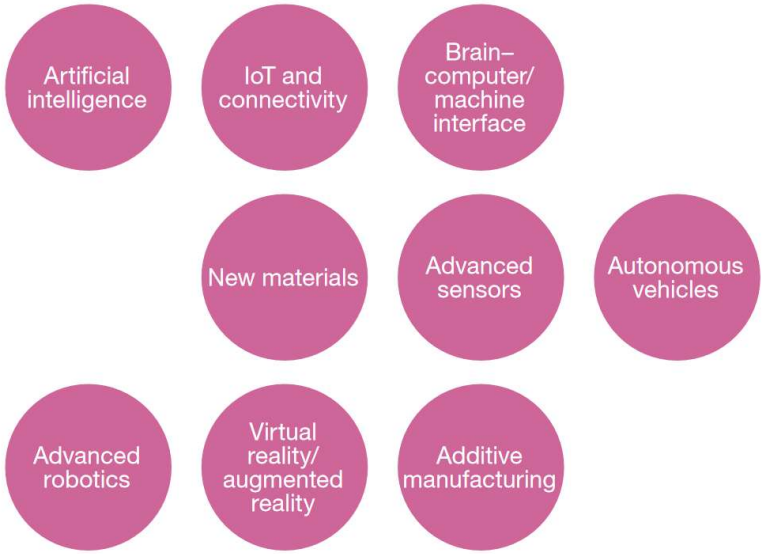
- Leaders' activity
- Scientific literature
- Patent Classification analysis
- Co-occurrences and weak signals

- Monitoring megatrends for possible applications
- Brainstorming with subject matter experts
- Insights – the added-value of the patent analyst

Emerging technologies as enabling technologies revolutionizing all possible fields

AI Application Fields

Enabling technologies for emerging assistive products



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Source: WIPO Technology Trends on AI (2019) and Assistive Technology (2021)

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WIPO supporting the TISCs enable local innovation and socioeconomic change

www.wipo.int/patentscope/en/programs/patent_landscapes

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References

- WIPO Patent Landscape Reports
- WIPO Patent Landscape Reports Database
- WIPO Technology Trends
- Guidelines for Preparing Patent Landscape Reports
- Manual on Free and Open Source Tools for Patent Analytics
- Handbook on Patent Analytics (work in progress)

Contact

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