



DANISH
TECHNOLOGICAL
INSTITUTE



Danish Technological Institute Ideas and Innovation

It's all about innovation
It's all about people

Welcome to a world of innovation

We believe that the innovation capacity of any individual, organization or society can be strengthened and expanded by stimulating the creative mindset and offering practical innovation training that can be integrated into everyday activities.

To stimulate a creative mindset, we help individuals relate to problems or tasks that they passionately want to resolve. We help them identify how best to contribute to the innovation process and develop their creative confidence by experiencing quick learning circles – from ideation to idea validation and revision. Upon gaining awareness of their specific creative skills, we then help individuals form optimal innovation teams that can accelerate the process from idea to value.

We are committed to measuring the impacts of our innovation programs presented in this booklet, i.e., the Inventor Advisory Service and the Innovation Agent Program, which have delivered results in terms of innovation implementation and commercialization. Apart from our 40

years of experience in Denmark, we are now implementing adaptations of these programs in other countries and Research and Technology Organizations (RTO).

I hope you find this booklet informative and inspiring. If you feel inspired to work with some of our methods, or if you want more information, do not hesitate to contact us, and we will be happy to share our insights.



Knud Erik Hilding-Hamann

Director, Centre for Ideas and Innovation
Danish Technological Institute



CONTENT

[Danish Technological Institute](#) 6-7

[Centre for Ideas and Innovation](#) 8-9

[The DNA of innovation](#) 10-11

[The Inventor Advisory Service](#) 12-13

[The Inventor School Service](#) 14-15

[FabLab TI](#) 16-17

[The Innovation Agent Program](#) 18-19

Danish Technological Institute

Danish Technological Institute (DTI) is a self-owned, non-profit organization. From our independent standpoint in the market we develop, apply and disseminate research and technological knowledge to the international business sector.

Drawing on our solid foundation of over 100 years of research in various areas, we are able to utilize our forty-four business units to develop the private and public sphere on multiple levels.

Our mission – your value

Our most important task is to ensure that new and innovative knowledge and technology is quickly converted into value for our customers. This value can take many forms such as new and improved products, materials, processes, methods and organizational structures.

Combining our main areas of knowledge with multiple testing facilities both in Denmark and abroad our main areas of expertise are:

- » Innovation and competitiveness
- » Management and training
- » Sustainable exploitation of resources

We also carry out consultancy and standardization services, which contribute to the dynamic and harmonious development of society.



FACTS

DTI's revenue in 2014 was EUR 145,5 million:

- » Eleven percent from performance contracts
- » Twenty-four percent from research and development activities
- » Twenty-seven percent from international customers
- » Thirty-eight percent from Danish customers

DTI - Organization

Danish Technological Institute employs more than 1,000 innovative employees within eight business units:

- » Building and Construction
- » Danish Meat Research Institute - DMRI
- » Energy and Climate
- » Materials
- » Life Science
- » Business and Society
- » Production
- » AgroTech

Within each of these main areas lie several areas of expertise ranging from policy and business analysis to robot technology. Read more on the following pages.

Business and Society

DTI helps Danish businesses and public organizations pave the way for progress and growth by giving them partnerships, a global vision and the courage to take new paths.

- » Business and Society
- » Policy and Business Analysis
- » Ideas and Innovation
- » Training

DMRI

DTI's Danish Meat Research Institute contributes to helping the Danish food industry see possibilities where others see limitations through innovation, inspiration and concrete results.

- » Business Development
- » Automation
- » Hygiene and Processing
- » Meat Technology
- » Measuring Systems and IT
- » Slaughter Technologies

Energy and Climate

DTI forms new, interdisciplinary cooperation relationships – often across geographic borders – to generate new knowledge and new ideas to strengthen the competitiveness of the Danish energy industry.

- » Technology Development and coordination
- » Automobile Technology
- » Biomass and Biorefining
- » Energy Efficiency and Ventilation
- » Installation and Calibration
- » Refrigeration & Heat Pump Technology
- » Pipe Centre
- » Transport and Electrical Systems

Materials

DTI takes the lead with new technologies to inspire the industry to think along new lines and prepare for the challenges of tomorrow.

- » Packaging and Logistics
- » Functional Coating
- » Metal and Surface Technology
- » Plastics Technology
- » Product Development
- » Tribology

Life Science

DTI takes on the challenges of tomorrow with the will to achieve ambitious goals on behalf of businesses through risk-taking research and development projects that give the business sector value for money.

- » Life Science
- » DTI Enhanced Oil Recovery
- » DTI Oil & Gas
- » Food Technology
- » Chemistry and Biotechnology
- » Laboratory for Chemistry and Microbiology

DTI - Organization

Building and Construction

DTI enjoys a unique position vis-à-vis the Danish building industry; a position that has been established through many years of customer projects and collaboration within research and development.

- » Concrete
- » Sustainable Building
- » Indoor Climate and Building Inspection
- » Masonry
- » Textile
- » Wood Technology

Production

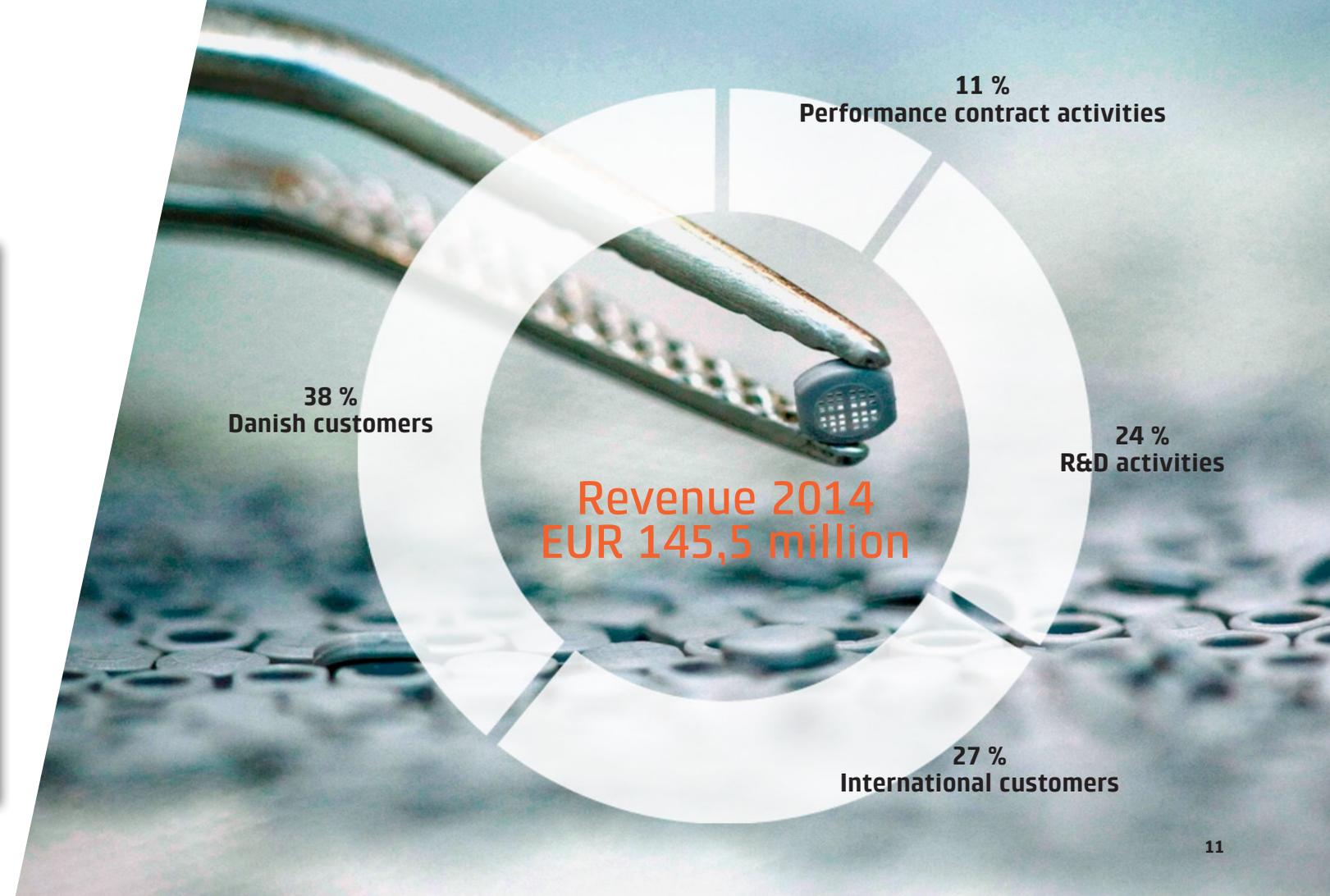
DTI has a keen eye for applying familiar technologies in new ways and implementing new technologies in existing or new products.

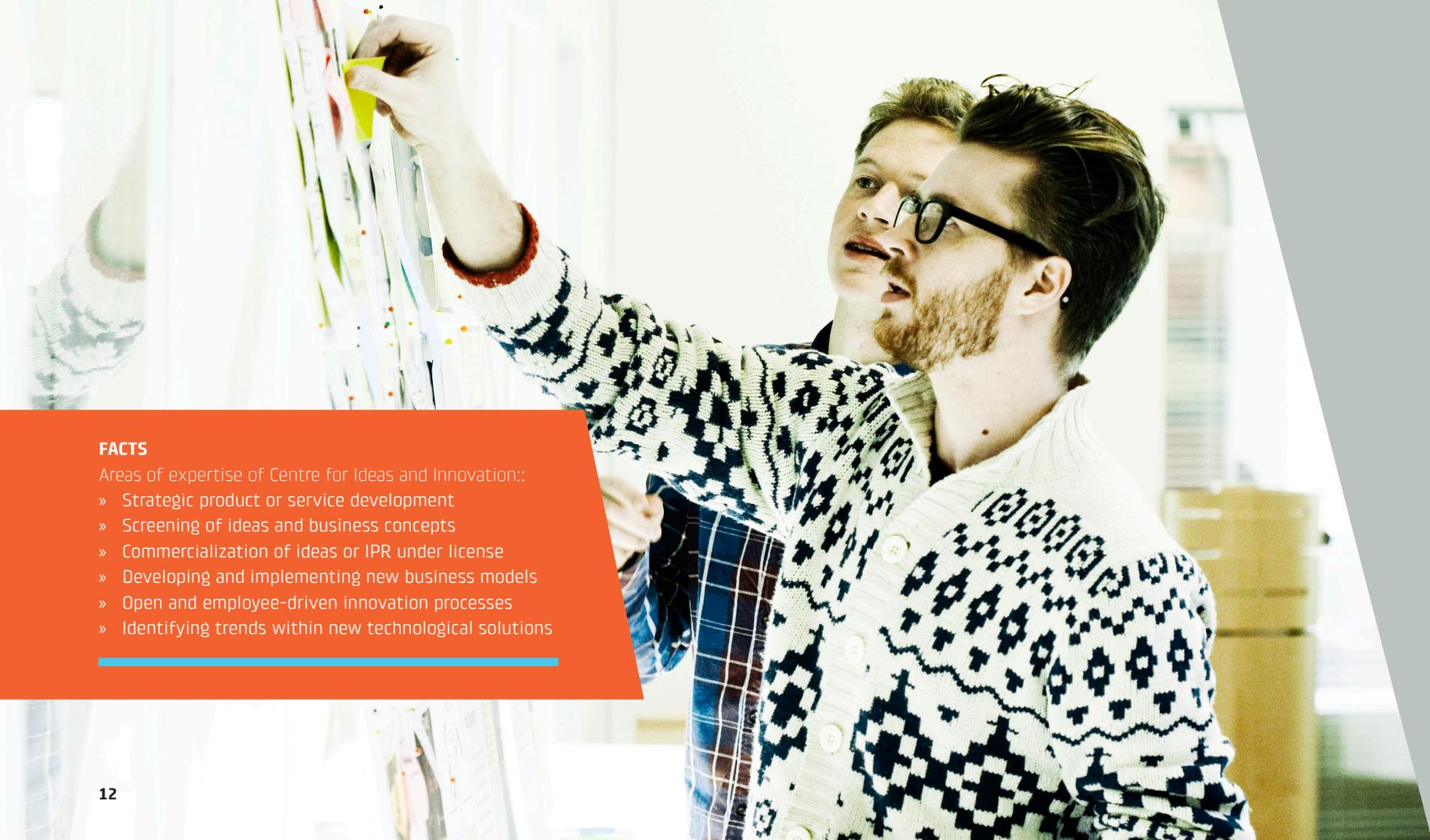
- » Metrology and Quality Assurance
- » Microtechnology and Surface Analysis
- » Robot Technology
- » Welfare & Interaction Technology

AgroTech

DTI secures easy access to the newest knowledge within the field of agriculture. Our customers are typically technology companies, nurseries, food companies, food service, plant breeding companies and public organizations.

- » Plant technology
- » Environmental technology
- » Food innovation
- » Agricultural tests, analysis and technology





FACTS

Areas of expertise of Centre for Ideas and Innovation::

- » Strategic product or service development
- » Screening of ideas and business concepts
- » Commercialization of ideas or IPR under license
- » Developing and implementing new business models
- » Open and employee-driven innovation processes
- » Identifying trends within new technological solutions

Centre for Ideas and Innovation

As one of DTI's forty-four business units, our area of expertise is innovative business development. We strive to create effective synergies between companies, public organizations, research institutions, end users and citizens.

Participating in large, publicly financed projects, both nationally and internationally, we perform commercial activities in the field of innovation, idea development, business development and new business models with companies and public institutions of all sizes.

Our mission – your growth

At the Centre for Ideas and Innovation, it is our goal to make it easier for companies and public organizations to grow and develop their potential. Whether it is a new product line, organizational structure or a more

creative mindset – we have the innovative toolbox needed to take on every aspect of the process.

Customized process

Our approach is to customize our innovation techniques to the individual organizational culture we meet in each task and adapt to the specific challenges and creative opportunities. The key motivation is to enable and ensure innovation through a customized process.

The DNA of innovation - how we do it!

We believe that in order to innovate and especially in order to create radically new solutions, organisations and individuals should mobilise six key areas; Mindset, Practice, Relations, Reality, Knowledge, and Sustainability. We call it the DNA of innovation in a human-centric approach.

Mindset matters

We train and transform peoples creative mindset giving them the ability to think divergently and empowering them to walk unknown paths.

- Ideas and innovation processes can only be as strong as the people driving them.

Practice matters

We employ structured processes and prototyping tools aimed at increasing number of ideas while reducing the time and cost by increasing iteration speed. Test, learn, break it. Test again!

- Our approach is strictly hands-on from the ideation phase to implementation.

Relations matters

We execute open and involving processes that create relations, dialogue and brings together people in a way that is effective, and course-correct as we go.

- Good innovation processes sets up dialogue with the most capable people you can attract.

Reality matters

We employ methods focusing on creating a deep understanding and empathy for those you are designing ideas for and the reality they live within.

- Ideas must focus on and solve real challenges.

Knowledge matters

We use knowledge search methods that unveil technology, products, processes and other bits of information relevant to solve a challenge.

- To know where to look for great ideas or inspiration one has to know which solutions already around.

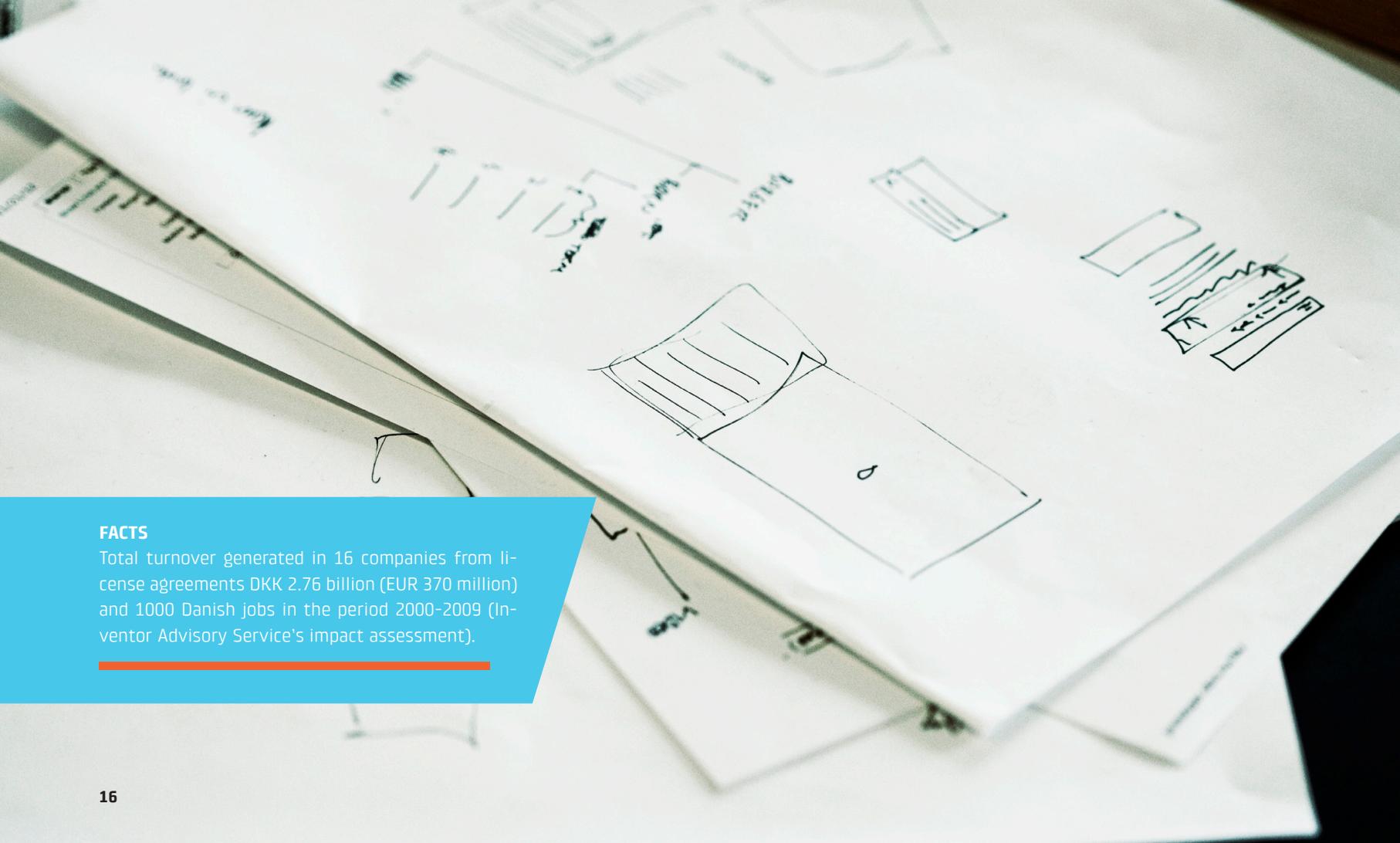
Sustainability matters

We help to transform and design processes and cultures that tightly align to business strategy and create sustainable innovation.

- New ideas, structures and processes must stick.

FACTS

We have assisted in developing the innovation capacity and competences in countries like Lithuania, Poland, Algeria, New Zealand, Botswana, Jordan, Trinidad & Tobago, Ghana, Tunisia and Austria.



FACTS

Total turnover generated in 16 companies from license agreements DKK 2.76 billion (EUR 370 million) and 1000 Danish jobs in the period 2000-2009 (Inventor Advisory Service's impact assessment).

The Inventor Advisory Service

The Inventor Advisory Service (IAS) is a unique innovation scheme, which was established in 1972. Since then, the aim of the IAS has been to offer free of charge support, advice and counselling to Danish citizens with great ideas. We have been helping inventors to commercialize their ideas via license agreements with existing companies.

Your idea can come to life

The IAS is funded by the Danish Agency for Science, Technology and Innovation and reaches more than 5000 Danish citizens each year, and as a result, approximately 1000 unique inventions are screened. On average, since 1972, we have helped 15-20 inventors negotiate license agreements with existing companies each year and in this process we have screened more than 40,000 inventions in total.

Every step of the way

Our advisors support inventors from early conceptualization to commercialization in a distinctly practical way. Based on the concept of 'help to help yourself' we coach and empower the inventor to become the lead driver in his own commercialization process. Our advisors are experts in intellectual property rights and legal processes, which gives an inventor the necessary help and guidance towards success.

Exporting the IAS concept

In early 2015, we assisted in implementing the concept for the first time outside of Denmark, in Trinidad and Tobago. We specifically tailored the concept for the environment in Trinidad & Tobago and provided practical training via remote and onsite support. More countries have since shown a keen interest in utilizing the concept.

The Inventor School Service

The Inventor School Service, a pillar of the IAS program, offers education and training to teachers and students at all levels of Denmark's educational institutions. The School Service's approach to working with entrepreneurs and innovation is also distinctly practical. Inspired by creativity theory and innovative theory of teaching, the training is designed to give teachers and students a transformative learning experience.

Innovation in practice

The Inventor School Service employs practical methods and tools aimed especially at the early stages of idea generation and idea validation. Students and teachers are trained to identify new areas of innovation and to convert these into relevant concept development through a hands-on approach often using the Fabrication Laboratory (FabLab) TI workshop for model and prototype building.

Solving real life problems

Training is based on real life challenges sourced from local businesses and organizations, which not only motivates students to find practical and workable solutions, but also facilitates increased collaboration between educational institutions, local businesses and society.

Outreach and a strong network

The Inventor School Service has an immense outreach with educational institutions all over Denmark. Likewise, we participate as judges and mentors in all major innovation and entrepreneurship competitions in Denmark.

FACTS

The focal point of the Inventor School Service is to teach students from the outset how to develop, trust and use their creative mindset, which we accomplish through the practical art of idea development, prototyping, visualization of ideas, and idea validation. The service is free of charge.



#FABLAB TI

FACTS

FabLabs have to share a common set of tools and processes. A prototyping facility is not the equivalent of a FabLab. A 3D printer is not a FabLab. The idea is that all the labs can share knowledge, designs, and collaborate across international borders.

FabLab TI - Fabrication Laboratory

"A small industrial revolution to democratize the development of new products and concepts" - Mayor of Høje-Taastrup on the opening of the IAS' FabLab TI.

The goal of the FabLab TI is to offer a creative and high technology prototype workspace to all citizens.

Professional tools and coaching

3D printers, laser cutters and CNC machines are all available at the FabLab TI. Activities range from peer-to-peer project-based technical training to local problem-solving and small-scale prototype development and innovative business training.

At all times, FabLab employees are ready with innovative coaching and practi-

cal experience. FabLab TI is open to the public two days a week.

A strong history

The FabLab is a part of the movement first started by Massachusetts Institute of Technology.

Besides offering high tech equipment to all citizens, the only demand of a FabLab is that it must continue to evolve and share the innovative knowledge generated. Fablabs proliferate numerous countries worldwide, including Boston, USA where the movement came into being, rural India, South Africa to the far reaches of North Norway.

While the service is free for citizens, companies pay for the use of the FabLab facilities.

The Innovation Agent Program

The Innovation Agent Program is financed by the Danish Agency for Science, Technology and Innovation, and it is operated by a network of 35 competent Innovation Agents from the seven independent Danish Research and Technology Organizations (RTOs) in Denmark.

The Innovation Agents have academic and practical knowledge in the field of technological innovation and business development, and are able to guide small and medium sized companies (SMEs) so as to support trade and industry development.

Finding the potential

The focus of the program is to uncover potential areas of technological development and innovation in SMEs with low innovation capacity. Through an "Innovation Check-up", an Innovation Agent along with

decision-makers in an SME go through the company's processes, products, market approach, organizational setup and strategy.

The Innovation Agent helps the company view its business and innovation potential from new angles, by providing concrete proposals for development projects along with references to experts and partners best suited to help the company move forward.

A win for both companies and society

An Innovation Check-up nudges the SMEs to review and renew their commercial basis and to raise their innovation capacity. This may strengthen the corporate economy and competitiveness and enhance the chances of company growth. Overall, the program benefits both the individual company and society.



FACTS

- » The Innovation Agents offer a free of charge Innovation Check-up for SMEs (between 1 to 250 employees)
- » The program addresses all industries
- » The program began in 2007
- » More than 3,000 SMEs have received an Innovation Check-up
- » 85 percent would recommend an Innovation Check-up



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