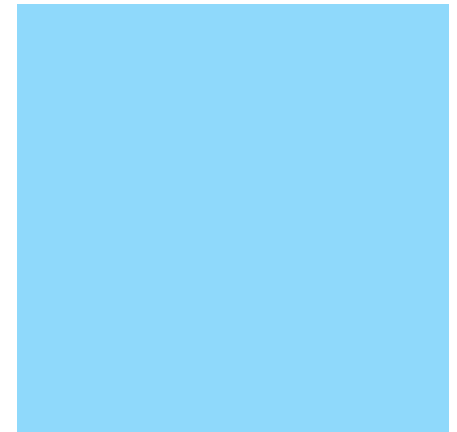




Istituto Nazionale di Fisica Nucleare



IP issues in the procurement of items related to magnets and accelerators

Ilaria Giammarioli
Geneva, 16/05/2018

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Brief Introduction

INFN-KT

Innovation Procurement

Conclusion

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+ Brief Introduction (1/2)

Who I am

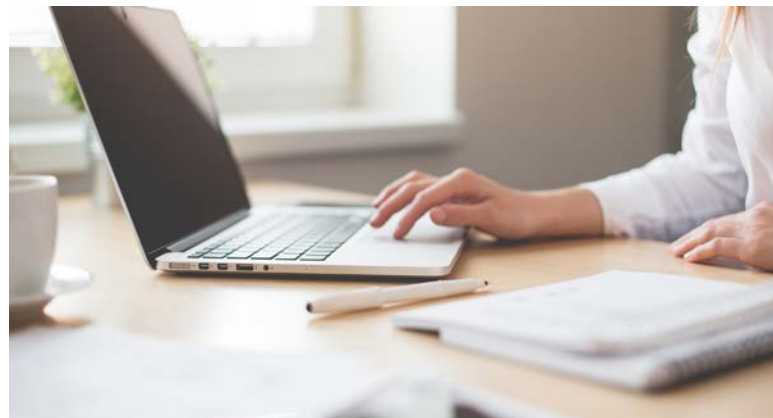
- Scientific background
- Collaboration with INFN since 2014
- Abilitation as Italian Patent Attorney, in the middle of the EQE to become a European Patent Attorney
- IP Specialist at INFN

Contact

INFN - Dir. Servizi alla Ricerca
Technology Transfer Office

via E. Fermi 40 - 00044 Frascati, Rome

tel. +39 06 94032488
skype ilaria.giammarioli



+ Brief Introduction 2/2

Technology Transfer Office Activities

- Management of IP generated within INFN
- Prior art analysis
- Patentability assessment
- Patent filing and prosecution
- Non Disclosure Agreement (NDA)
- Support to researchers on any IP related issue
- Licensing of patents and/or Know How
- Negotiation of agreements with enterprises

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Promotion of the **innovative capabilities of INFN:**

- **Intellectual property** protection
- Patenting new ideas coming from research activities
- Financial support to **innovative development projects**
- Industrialization of new technologies
-

Knowledge transfer to enterprises and society:

- Collaborative research
- Research contract
- Licensing of patents and know how
-

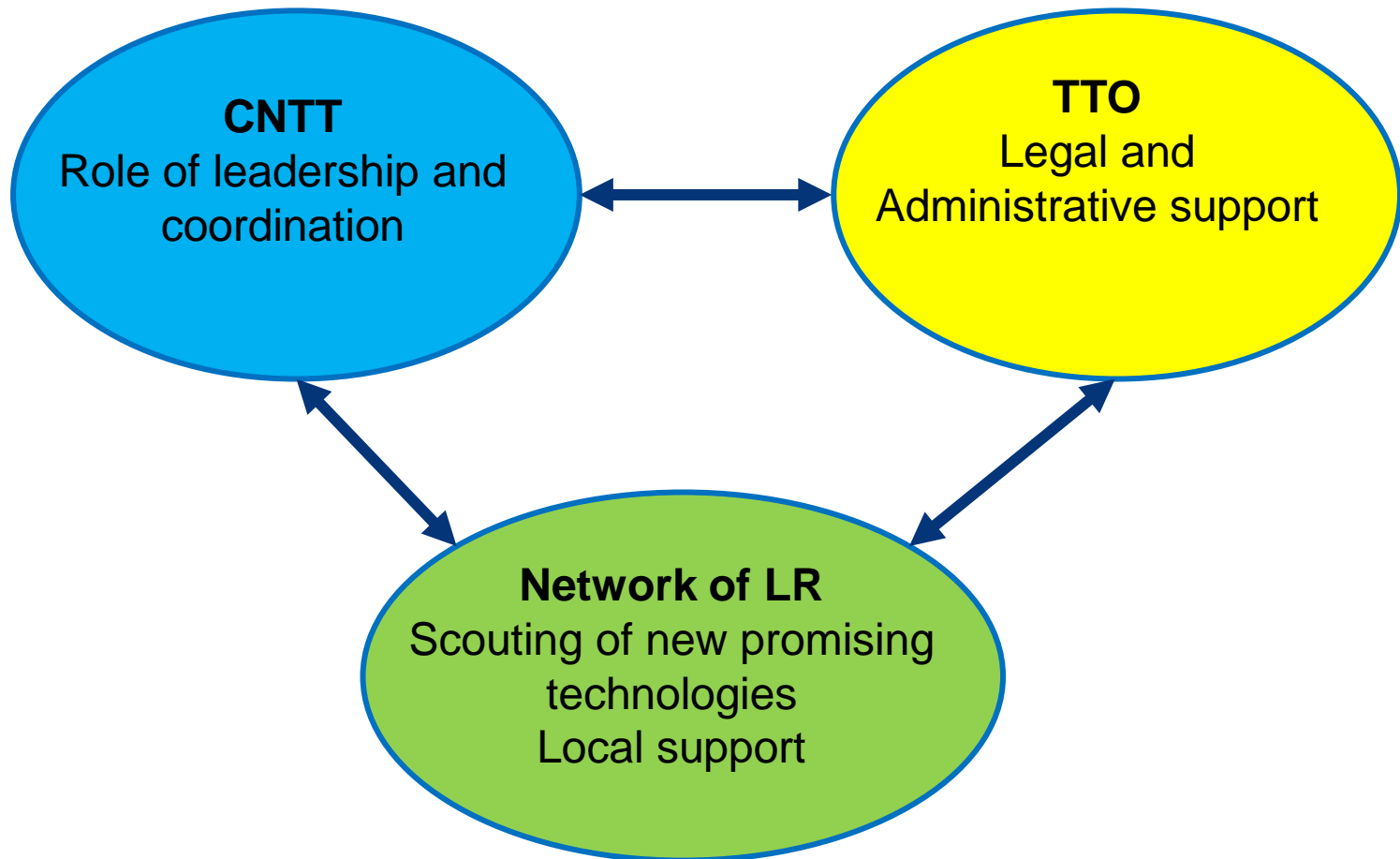


Recent achievements:

- New regulation for **Intellectual Property (2015)**
- New regulation for supporting **spin-off (2017)**
- Registration of **INFN trademarks (2017)**
- Creation of **networks for KT** in specific technology fields (in progress)
- **Analysis of the socio-economic impact of KT** (in progress)

To support the **KT activities**, INFN has the following structures:

- **CNTT** – National Committee for KT (directly connected with INFN-EB)
- **Network of LR** – Local Representatives for KT (at least one in each research department/lab)
- **TTO** – National Office for KT activities (legal and administrative support)



CNTT - KT National Committee

CNTT Coordinator

Ezio Previtali

EB Representative

Speranza Falciano

CNTT members

Agostino Lanza

Maria Rosaria Masullo

Cino Maticotta

CNTT consultants

Mauro Morandin (ILO)

Valter Bonvicini (CSN5)

Marco Ripani (INFE-E)

Giorgio Chiarelli (CN3M)

LR – Network of Local Representative

KTO – KT Office

Area Director

Bruno Quarta – DG INFN

TTO members

Cino Maticotta – Head of TTO

Pier Paolo Deminici

Ilaria Giammarioli

Cristina Placido

External funds support

Franca Masciulli

Veronica Valsecchi

Administrative support

Maria Rosaria Ludovici

Analysis of INFN-KT impact

Martina Dal Molin

INFN is organizing **thematic networks** in order to:

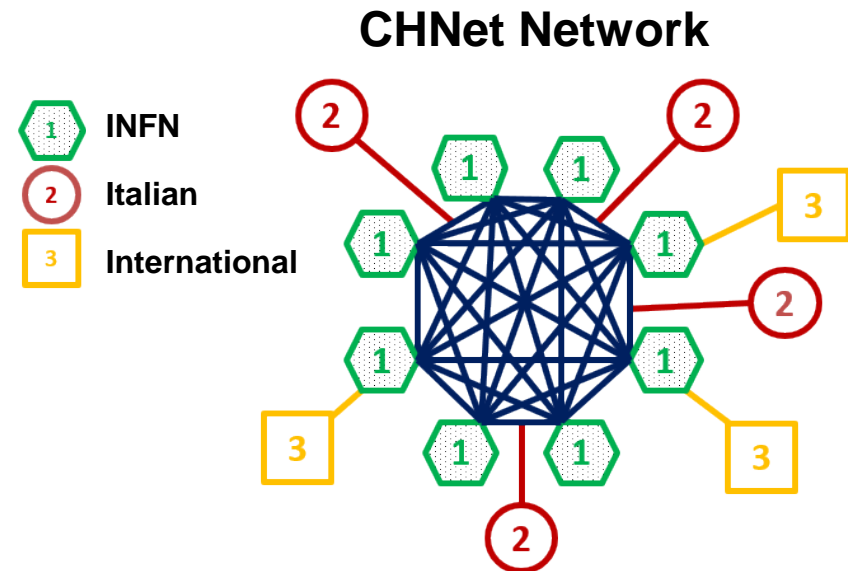
- **Coordinate the R&D and the KT activities**
- **Create a synergic interaction among departments/labs**
- **Define a unique access point for enterprises**

Two Networks have been already implemented:

- **CHNet** (Cultural Heritage Network)
- **ASIF** (ASI supported Irradiation Facilities)

Others lie in store:

- Medical Physics
- Electronics
- New materials and superconductivity
- .. **Accelerators and Magnets**



Starting from 2017, INFN has been promoting **KT projects** finalized to:

- Complete the **development of innovative ideas**
- Allow new products or services **to reach the market**
- Promote **cooperation with industries** on innovative R&D
- Increase TRL of new ideas coming from basic research

➤ The first call had a total budget of 100k€

All proposals asked for approx. 360k€

➤ The second call is now OPEN (deadline on June, 5)

The budget has been increased to 150k€

We believe Spin Offs are a good way to exploit our technologies

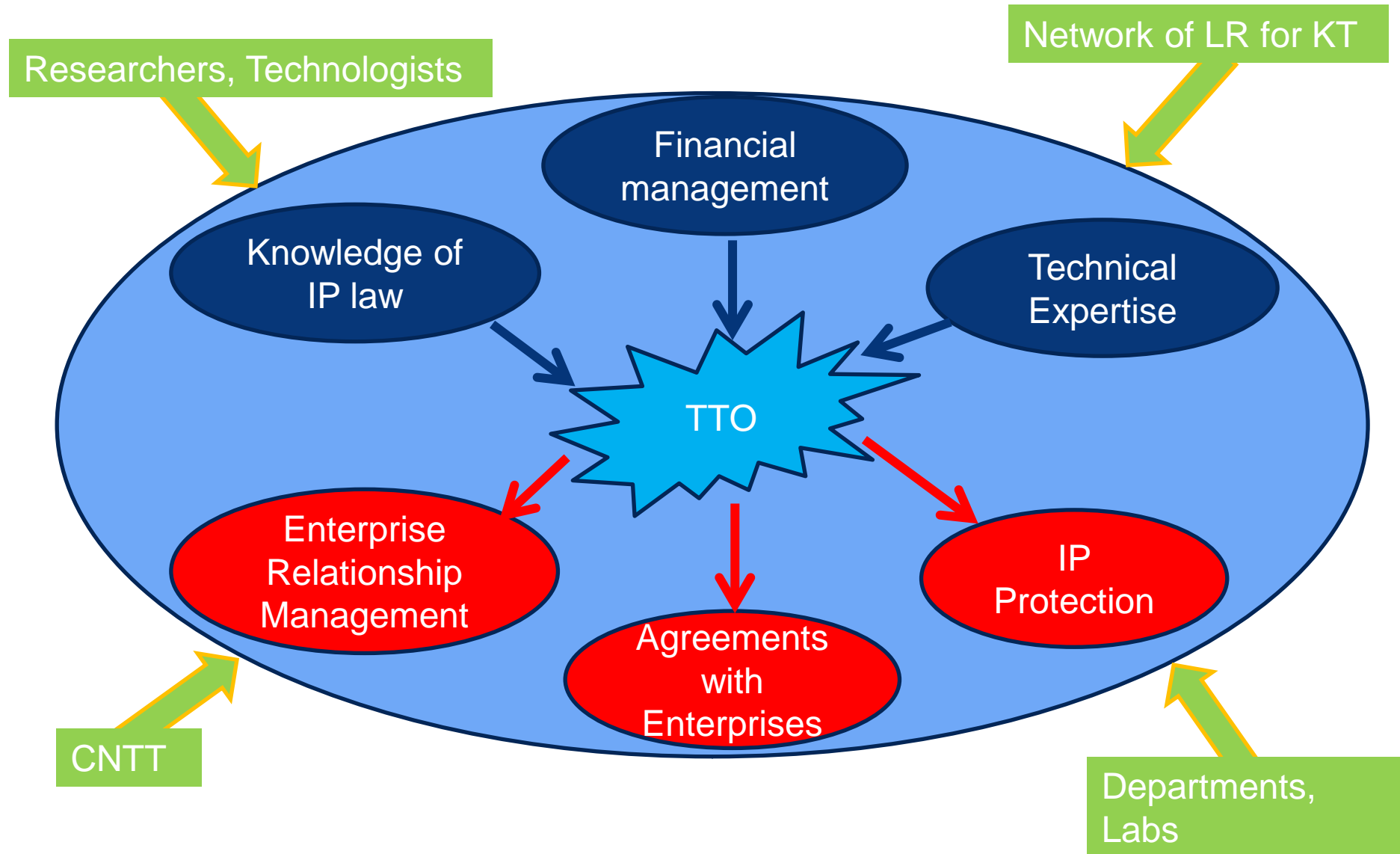
To support the researchers in the process of spin-off creation, the Regulation recently approved makes available to such enterprises on preferential terms

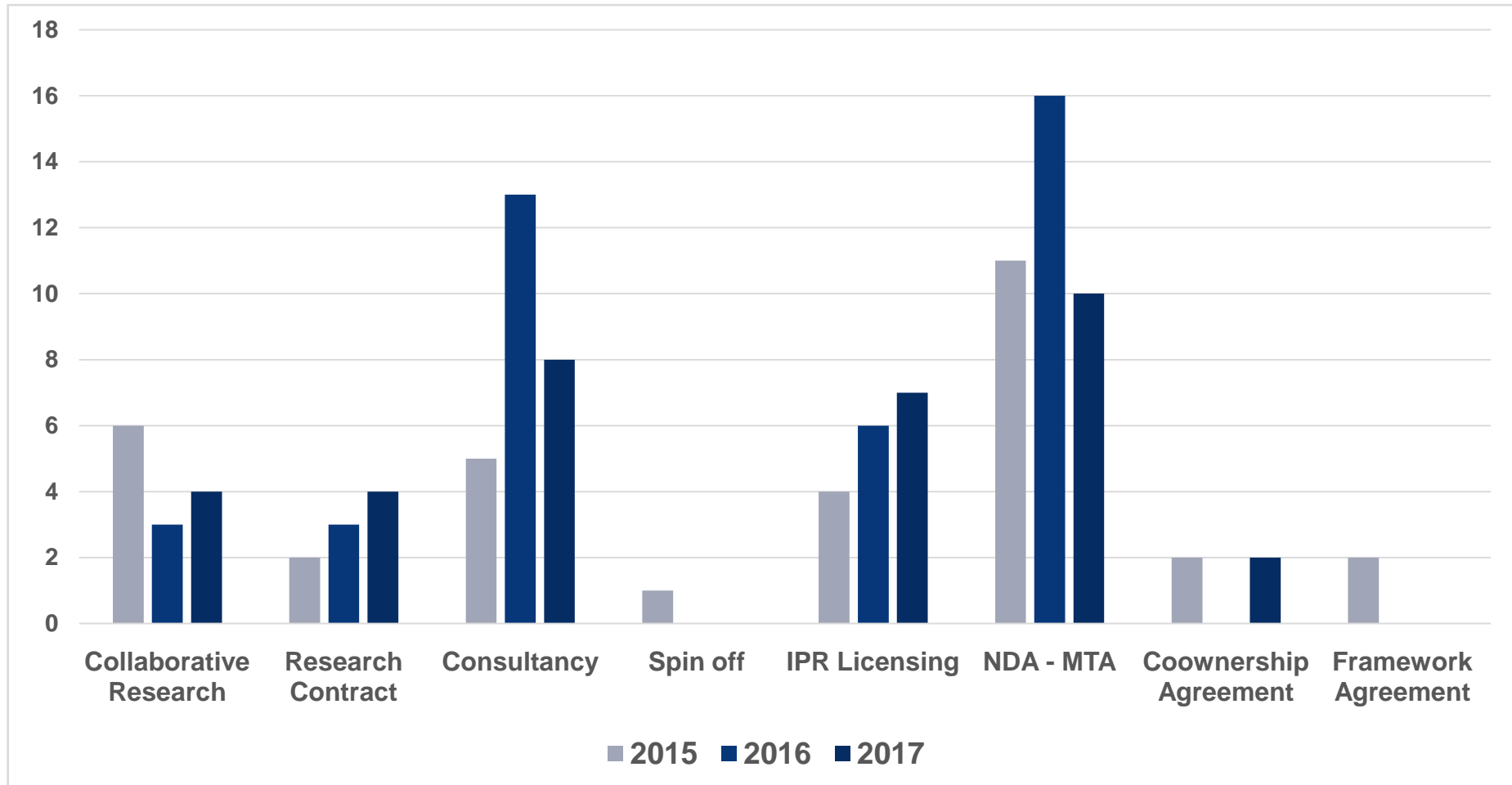
- Licensing of Technologies
- Access to Infrastructures
- Consultancy on IP issues

In the meantime, in partnership with CERN, **the R2I project** is in progress

The project implies:

- Definition of a **Network of Business Incubator Centers in Italy**
(University of Sassari, I3P Turin, BioIndustry Park Ivrea)
- Licensing of **CERN/INFN technologies** and know how to the incubated companies
- Technical support from CERN/INFN experts



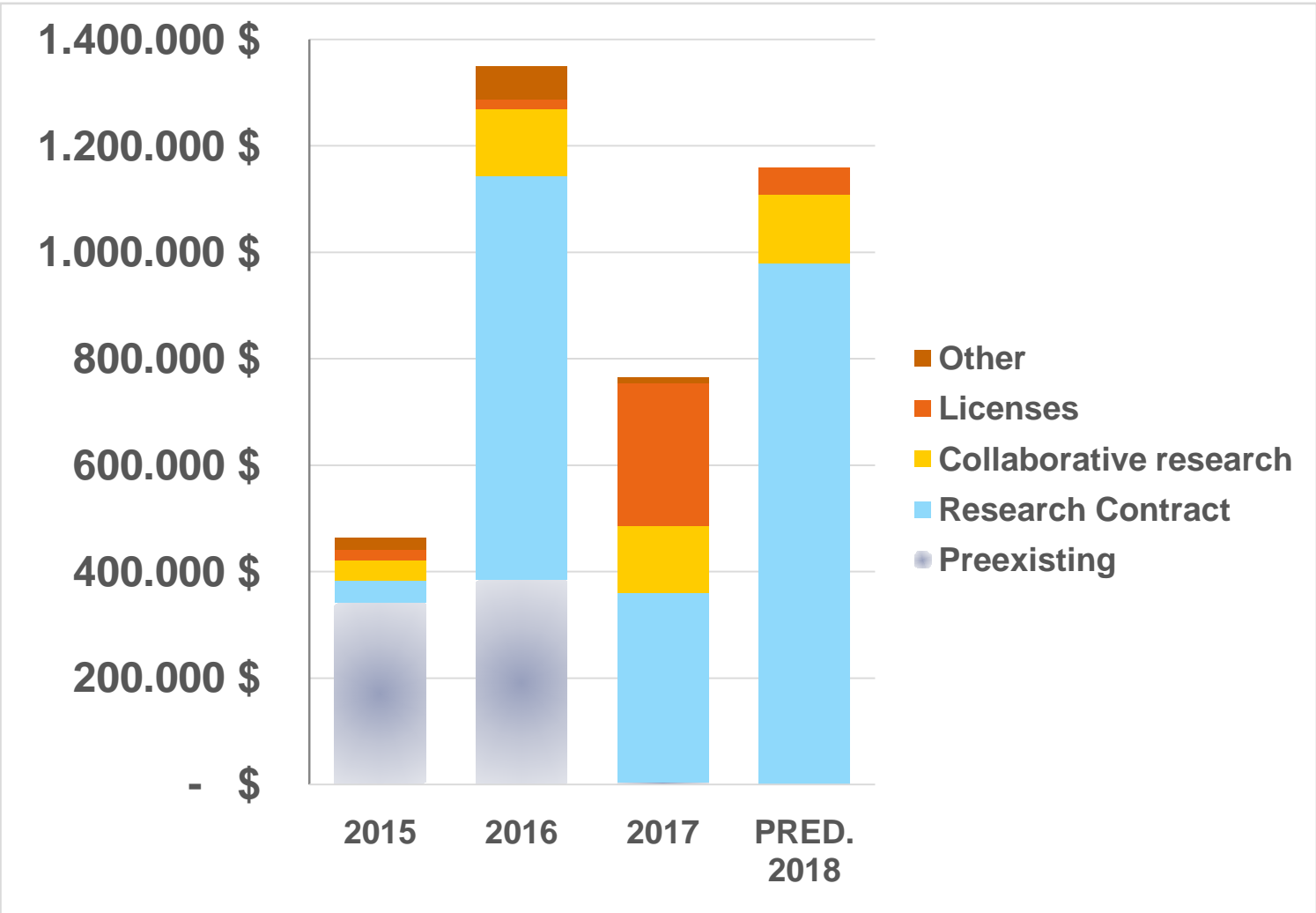


	2014	2015	2016	2017
# Invention Disclosures	24	20	10	22
# priority applications filed (in Italy)	11	10	5	5
# patent applications filed	19	25	14	9
# patents (both applications and patents issued) active at 31.12.YY	59	63	71	79
Expenditure on legal support for patenting process k€	50	54	89	80

IP and patents

	2014	2015	2016	2017
# licences active	6	10	14	17
# to italian	3	6	11	13
# to EU or outside EU	3	3	3	4
# generating revenues	3	4	9	14
# linked to patent	3	2	1	5
Revenues k€	34	23	55	269

IP Licensing



How and When does KT mostly occur?

- While executing research contracts
- Within scientific collaboration on fundamental research
- During or after collaborative research with industrial partners
-

To better understand the KT process, in 2015 CNTT started a survey:

- Direct interviews to INFN researchers
- Interviews to industrial partners
- Consultancy by experts in evaluation of the economical impact of public research

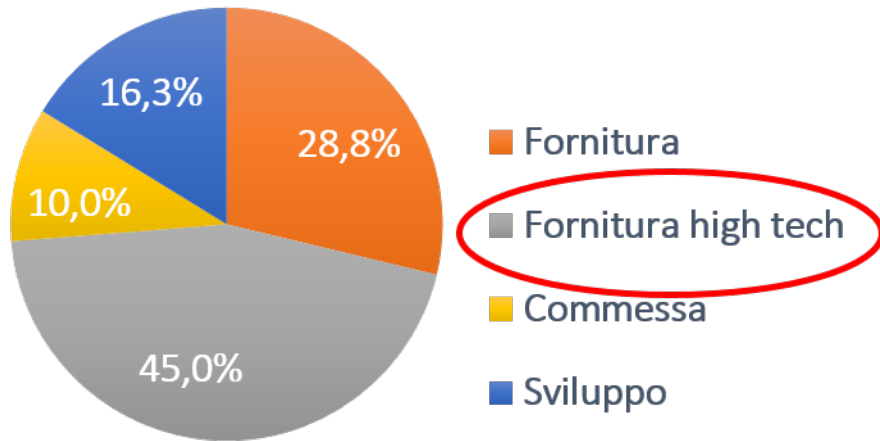
The survey has already produced:

- >200 Interviews to researchers
- >160 Interviews to industries

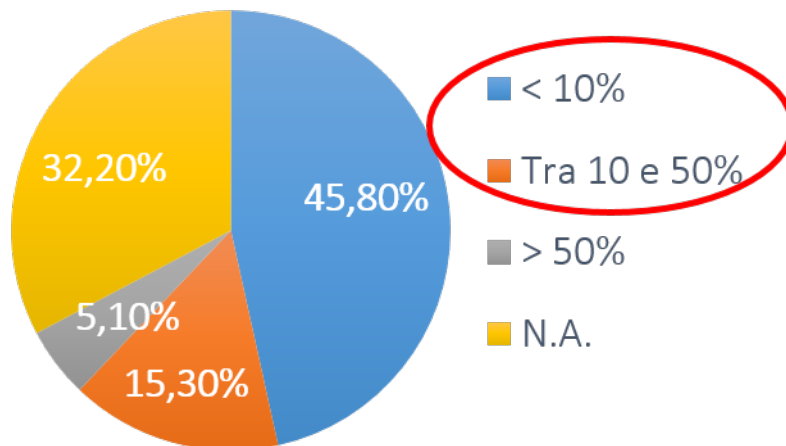
Data analysis is ongoing

Preliminary results of the survey

Kind of relationship with enterprises



R&D investments (% of the annual budget)



Preliminary results show that some Enterprises which have had a relation with INFN acknowledge the following effects:

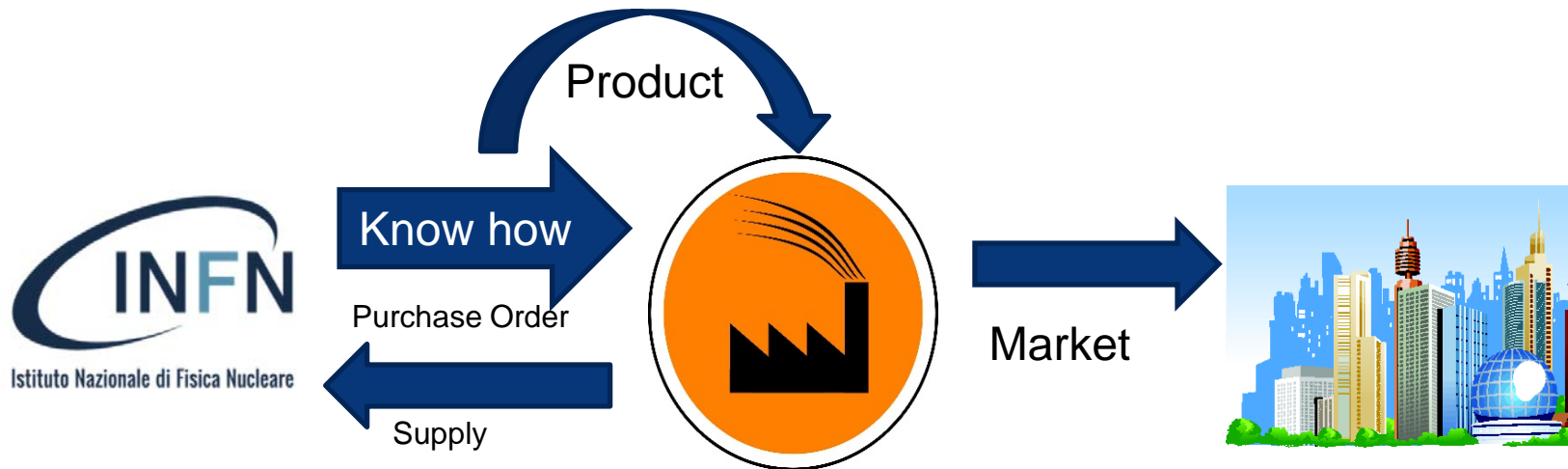
- Improvement of the corporate image
- Increase of the income
- Acquisition of **new technical skills**
- Development of **new products or services**

Many of the enterprises we have consulted do not invest a significant part of their budget on R&D

Preliminary results of the survey

- KT process takes place during **the procurement**, especially innovative procurement
- In order to provide the innovative product/service, Enterprises take advantage in terms of training, expertise, consumer choice and increased supply

INFN acts as the R&D department of such enterprises



Which are the IP constraints?

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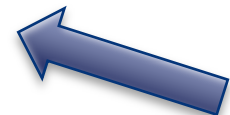
+ Public Procurement

Legal framework

- INFN is a public research organization
- DIRECTIVE 2014/24/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
- Italian law DLgs n. 50/2016 (July 2016)

In summary

- Principles of equal treatment and transparency
- **Introduction of competitive procedures specifically designed for the innovative procurement**



+ Pre-Commercial Procurement (PCP)

- It is an approach to public procurement of R&D services
- Public procurers buy R&D from several competing suppliers in parallel to compare alternative solution approaches and identify the best value for money solutions
- Benefits and Risks are shared under market conditions: generally suppliers retain **IPR ownership** while procurers keep **licensing rights**
- PCP ends with the development phase and, at the latest, with the purchase of limited volume of first products developed. It is followed by further procurement procedures

+ Competitive Dialogue

DIRECTIVE 2014/24/EU, Article 30

- Any economic operators may submit a request to participate in response to a contract notice, provided that they meet the selection criteria (set out in the notice)
- The procurer shall open **a dialogue with all selected participants in order to define the means best suited to satisfying its needs**
- Equality of treatment among the participants
- Confidentiality about other participants solutions
- It may take place in subsequent steps
- At the end, there is the request for final tenders
- There is no recommendation on IP policy

+ Innovative Partnership

DIRECTIVE 2014/24/EU, Article 31

- All starts with **the need for development of an innovative product or service** – no solution already available on the market
- It can be set up with one or more partners conducting separate R&D activities
- The objective is **to develop an innovative product or service** and subsequent purchase
- It is structured in phases following the sequence of steps of the research and innovation process
- Intermediate achievements are compensated with appropriate remuneration
- **IP Policy to be defined in separated agreements**

+ IP policy in KT agreements

■ Background knowledge

Each party keeps the ownership of IPR related to preexisting knowledge/ patents



■ Foreground knowledge

There are alternative provisions:

- In case of collaborative research IPR may be jointly owned; shares are based on the importance of respective contributions
- In case of research contract IPR may be jointly owned or exclusively owned by the customer (if so, contract value increases)

+ Procurement at INFN

- In general, there is a financial threshold for the departments/national Labs to act as delegated authorities
- Beyond such threshold, the central administration is competent to cope with the procurement procedures
- The financial threshold is equal to 50k€ for Departments and 200k€ for National Laboratories
- In any case, there is a strict collaboration between researchers and administrative staff (TTO is not directly involved) for the preparation of the call (or notice)
- INFN has successfully experienced the Competitive Dialogue procedure

+ An example

Mu2e Calorimeter Photosensors

- A Competitive Dialogue procedure for the procurement of the Silicon Photomultipliers required by the Mu2e collaboration at Fermilab
- The production of such photosensors required a dedicated technical development – they were not already available on the market
- The competitive procedure started in May, 2016 and the final product was selected in July, 2017

+ The procedure



- Selection of the candidates that meet the preliminary requirements ruled out in the notice: HAMAMATSU PHOTONICS Italia srl, ADVANSID srl e SENSL Ltd
- Remuneration of the first three candidates that achieved the pre-production goal (22k€ each one)
- Request for final tenders to such three enterprises: only HAMAMATSU PHOTONICS Italia srl and ADVANSID srl replied
- Identification of the supplier based on a best value for money criteria: HAMAMATSU PHOTONICS Italia srl (final tender approx. 500k€)

+ Content of the notice

- Technical specification of the photosensors: 3x2 matrix of monolithic SiPM with area approx. 6x6 mm², pixel size < 50um
 1. pre-production (50 pieces)
 2. technical evaluation of the pre-production
 3. subsequent production (3350 pieces)
- Details of the tests that would be conducted on the photosensors provided and acceptable parameters
- Delivery schedule: 2 months for the pre-production delivery and 200 pieces/month for the following production
- Selection criteria: 60/100 technical evaluation and 40/100 for economical aspect
- Tenders cannot exceed 950k€

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+ Innovation Procurement

Recap

KT occurs in many ways, even during procurement



Public organizations have been provided with new tools/procedures such as Innovative Partnership



Innovative Partnership represents an opportunity to develop new products and services together with enterprises

+ Innovation procurement

How to improve the IP management

- Raising awareness of the value of IPR
- Promote collaboration among different professionals (researchers, administrative staff and IP specialists)
- Any suggestions?



+ Thank you

Ilaria Giammarioli
Technology Transfer Office (TTO)
Ilaria.giammarioli@Inf.infn.it
+39 06 94032488



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