TOTAL

The European House
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FORUM

Think Tank Basilicata

Energie per un futuro sostenibile

4 dicembre 2020

PRESENTAZIONE DI MARIA CRISTINA FALVELLA

ThinkTankBasilicata
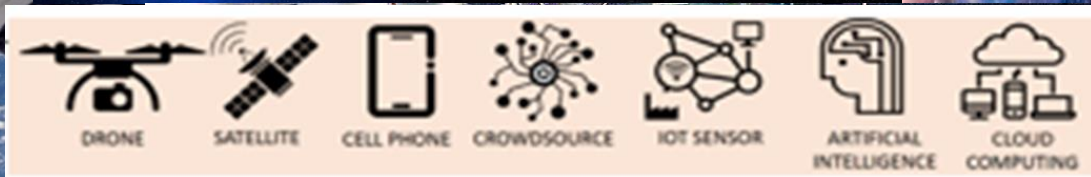Energie per un futuro sostenibile

IL CONTRIBUTO DEL SETTORE SPAZIALE PER UNA BASILICATA PIÙ ATTRATTIVA E INNOVATIVA

M.C Falvella, Fondazione E. Amaldi

Think Tank Basilicata- 2 dicembre 2020

DRONE　　SATELLITE　　CELL PHONE　　CROWDSOURCE　　IOT SENSOR　　ARTIFICIAL INTELLIGENCE　　CLOUD COMPUTING

The Space Economy in 2019

Investment in Space in 2019

Public

World
€67 billion

+4%
Past 5-year CAGR

Europe
€10.4 billion

+5.6%
Past 5-year CAGR

Private

World
€5.1 billion

x2
Since 2015

Europe
€188 million*

x4
Since 2015

Investment in European space start-ups only

ESA credits

E. Amaldi Foundation

Identity

E. Amaldi Foundation (FEA) ,
born in 2017 from the commitment
of Italian Space Agency and Hypatia
Research Consortium, represents
a new model for technology transfer
and the promotion and support of
the national scientific heritage.

Mission

FEA supports and promotes applied
research aimed at technology
transfer, focusing on the Space
sector, with spin-in and spin-off
activities, as an asset for the
economic development and an
exceptional tool of innovation and
growth

Vision

Open innovation and cross
correlation are key elements to
create a fruitful ecosystem for both
institutional and private stakeholders
in order to foster the exploitation of
space technologies, integrated
applications and services.

Italy giving you Space.

Our Departments
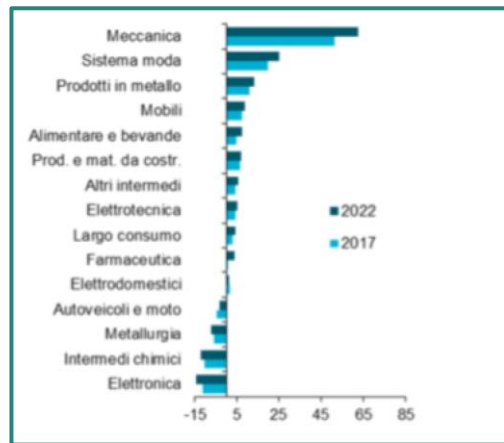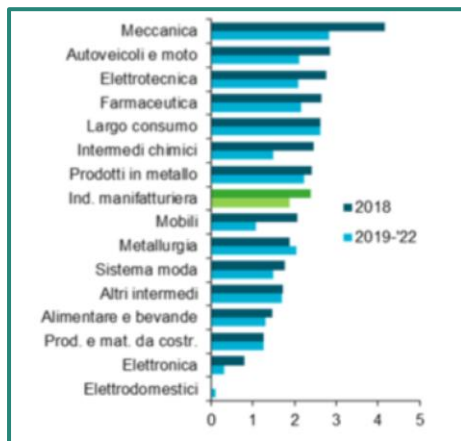
FEA Technology Transfer Process
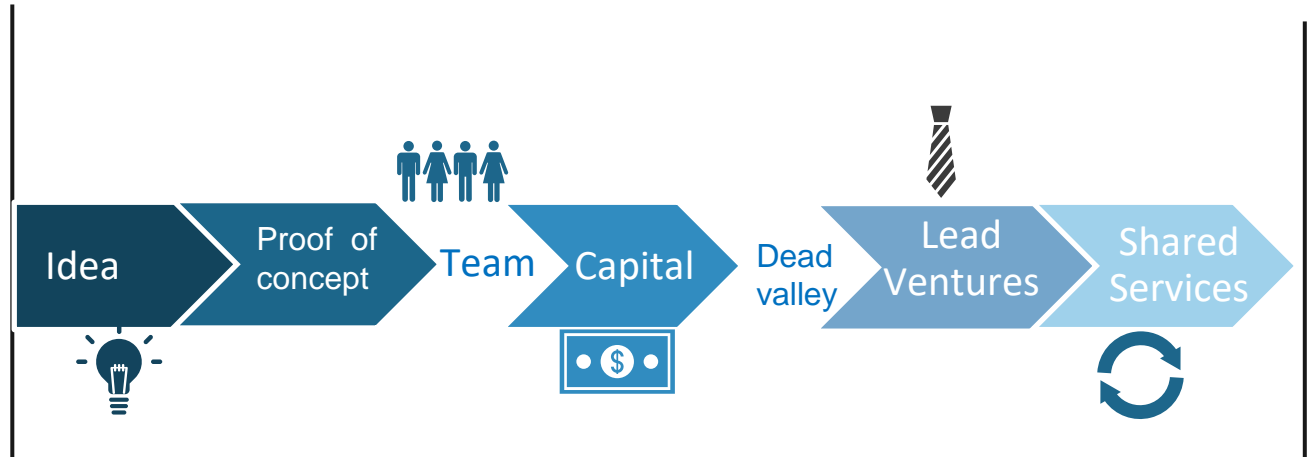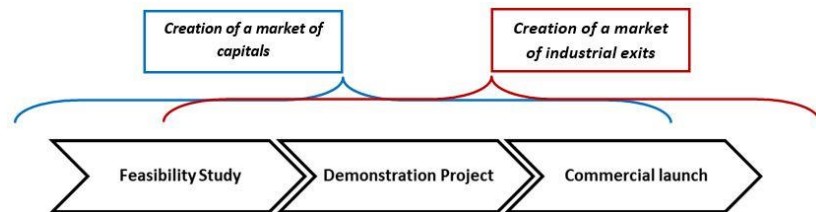
Main Italian industry sectors

Evolution of turnover 2018-2022
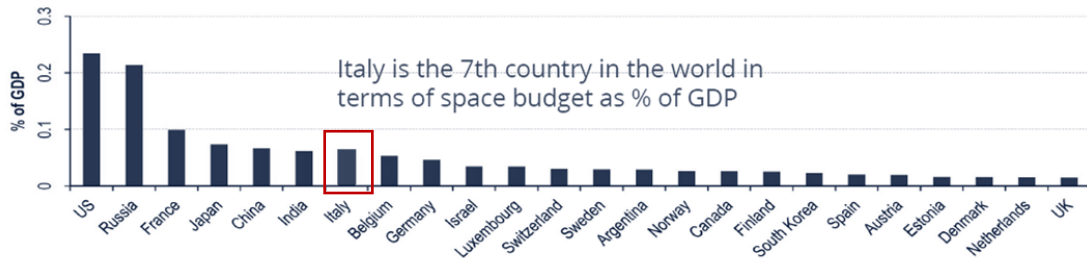Average % annual changes
at constant prices

FEA matches the innovation trends with high growth rate traditional sectors to identify the best technology transfer opportunities.

Trade balance by sector 2018 – 2022
Billion € current

ESA UNCLASSIFIED

Since the main gap for satellite-based services and products had been identified in the commercial launch phase, it is necessary to actively contribute to create a market of capitals able to follow the idea through all the TRL stages and to shape a market of industrial exits from the very first stage of project proposals submission.

Creation of a market of capitals

Creation of a market of industrial exits

Feasibility Study → Demonstration Project → Commercial launch

Space Budget as percentage share (%) of GDP for selected countries

Italy is the 7th country in the world in terms of space budget as % of GDP

% of GDP

US, Russia, France, Japan, China, India, Italy, Belgium, Germany, Israel, Luxembourg, Switzerland, Sweden, Argentina, Norway, Canada, Finland, South Korea, Spain, Austria, Estonia, Denmark, Netherlands, UK

Sources: Strategic vision paper ASI 2016-202

- Global Space turnover (Bryce Size Estimates): $ 271 B (2019)
- Italian Space turnover: € 2B (2019)
- Median Market Estimates: € 475B by 2030
- Morgan Stanley Estimates: $ 1 trillion by 2040

Space Technologies

Space Weather

Earth Observation

Satellite Navigation

Satellite Communication

Human Spaceflight Technologies

New tech trends

Cybersecurity
Augmented Reality
Photonics
Analytics and Big data
5G
Blockchain
Quantum Key distribution
Quantum computing
ALM
AI

Markets to be developed

Transport and Logistics

Mass distribution circuit

Industrial equipment

Luxury & fashion

Manufacturing

Healthcare

FoodTech
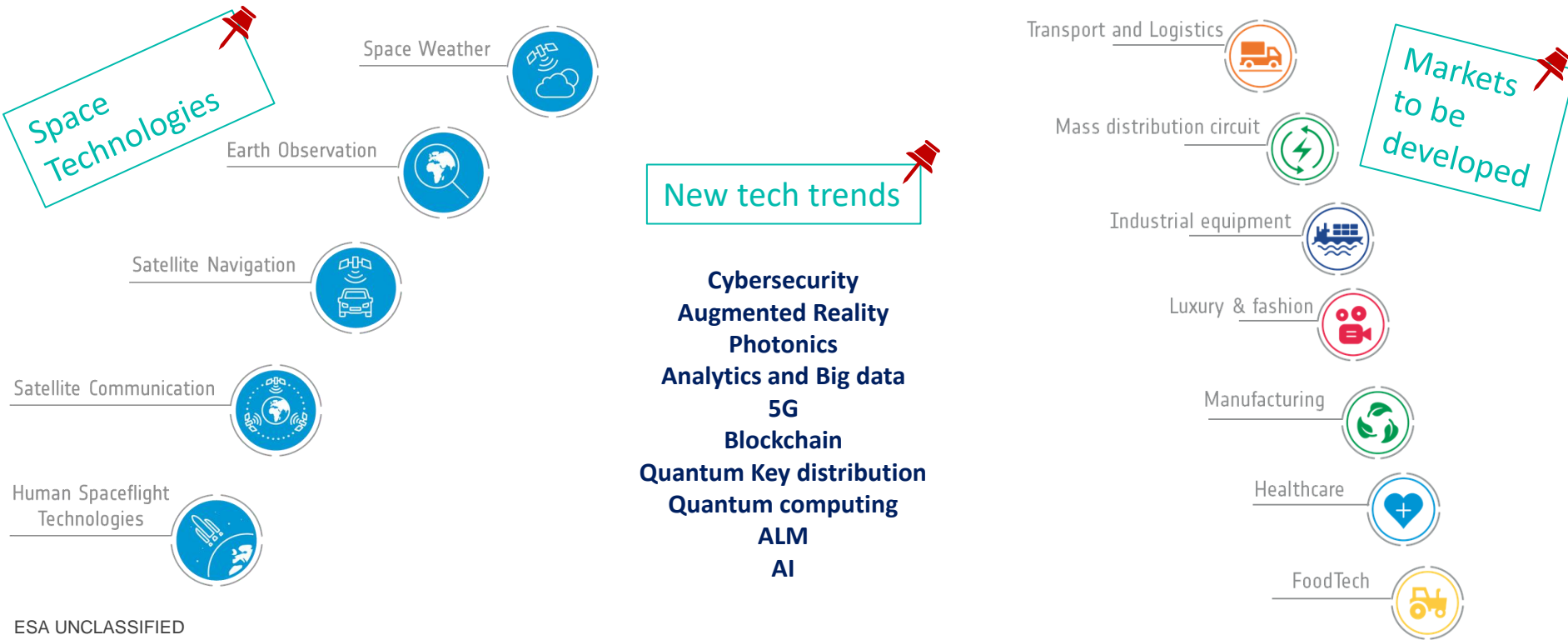
ESA UNCLASSIFIED

Most innovative trends (Global, in Europe, in Italy)

Emerging Spaces (Trends)	Capital Invested
AIOps (IT)	€177,00B
Autonomous Trucking (B2B)	€86,92B
Next Generation Battery Technology (Energy)	€81,13B
Autonomous Vehicle Simulation (IT)	€69,60B
Low Code /No Code (IT)	€44,92B

Emerging Spaces (Trends per sector)	Capital Invested
AIOps (IT)	€177,00B
Autonomous Trucking (B2B)	€86,92B
Next Generation Battery Technology (Energy)	€81,13B
Electric Vehicle Platforms (B2C)	€40,40B
Gene Therapies (Healthcare)	€33,65B
Smart Waste Management (Materials & Resources)	€7,62B

Emerging Spaces (Trends)	Capital Invested
Autonomous Trucking (B2B)	€82,93B
Next-Generation Battery Technology (Energy)	€78,78B
Autonomous Vehicle Simulation (IT)	€67,45B
Ghost Kitchens (B2B)	€34,57B
AIOps (IT)	€33,40B

Emerging Spaces (Trends per sector)	Capital Invested
Autonomous Vehicle Simulation (IT)	€67,45B
Autonomous Trucking (B2B)	€82,93B
Next-Generation Battery Technology (Energy)	€78,78B
Air Taxis (B2C)	€22,41B
Gene Therapies (Healthcare)	€7,84B
Livestock Health (Materials & Resources)	€4,86B

Emerging Spaces (Trends)	Capital Invested
AIOps (IT)	€21,44B
Contract Management Automation (IT)	€2,79B
Robotic Process Automation (IT)	€1,83B
TinyML (IT)	€960,66M
Low Code /No Code (IT)	€878,41M

- ■ Most innovative global trends
- ■ Most innovative trends in Europe
- ■ Most innovative trends in Italy

Incubators - Accelerators – Investors overview in Italy

Area	Percentage
North – West	37,1%
North – East	21,8%
Center	21,3%
South + Islands	19,8%

Incubators
197
of which
35 certified

370 investors

between private equity and

venture capitalist in Italy

(+ 3% compared to 2018)

CHALLENGES

Eco-sustainability on Earth

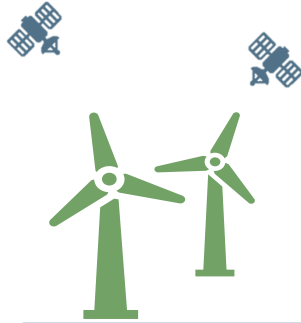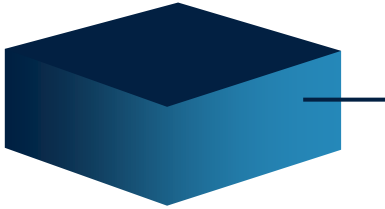**Improving the quality of human life**

Revolution of production processes

Eco-sustainability on Earth Goals

Problems:

- Climate Change
- Clean Water and Sanitation
- Affordable and reliable energy for all

Solutions:

- Versatile Fuel Cells Stop Natural Gas Emissions at Oil Wells;
- *Satellite Imagery for agrifood tech;*
- Metallic Glass Coatings Improve Power Plant, Oil Rig Productivity.

Improving the Quality of Human Life Goals
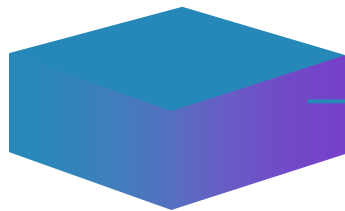
Problems:

- eHealth
- Ensure quality education
- Safe and sustainable cities

Solutions:

- ***Wool Mask to Fight Fires in Space Inspires Fire Equipment on Earth;***
- ***Doppler Lidar Makes Self-Driving Cars Safer;***
- Smaller, Cheaper Lasers Can Detect Gas, Monitor Structures, Take Tissue Images.

Revolution of production processes Goals
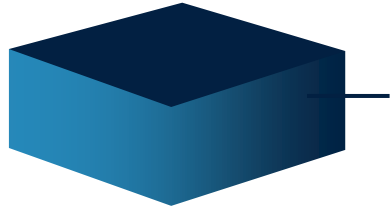
Problems:

- Digital Twin Earth
- Zero Environmental Impact Operations
- Sustainable Industrialisation

Solutions:

- New Imaging Technique;
- *Smart Sensor Networks Monitor System Health—and Themselves;*
- Zero-Leak Valve Holds Tight in Demanding Environments.

FoodTech Trend- an opportunity for regional cooperation

Very high relevance

High relevance

Moderate relevance

Credit: Fraunhofer ISI

START-UP NAME	START-UP HQ	KEYWORD
Michelangelo Metal Box	Brescia	Recycling
Microvita 2050	Bologna	Fly larvae flour
Elaisian	Rome	Olives, vineyard
Milda+	Perugia	Cremoli
Hotbox Food	Modena	Food delivery
Milk Brick	Sassari	Milk waste
MozzaRisella	Treviso	Plant-based
Ready to Lunch	Torino	Novel foods
Re-box	Nichelino	Doggy bag
Latitudo 40	Napoli	Sharing platform
Kenda Onlus	Bari	Food sharing
My Food	Milano	Food waste
My cooking box	Milano	Food delivery
Life Dop	Mantova	Certifications and standards
Nanommia	Verona	Agritech
NovaFood – Cruskees	Potenza	Pepper brand
NutriBees	Milano	Food delivery
Nova Stark	Torino	Monitoring system
Nutracensis	Milano	Gluten-free pasta
Planet Farms	Milano	Vertical farming
Mvnd	Milano	Food delivery
Quomi	Milano	Food delivery
Mashcream	Ancona	Innovative ice-cream
Melixa	Trento	Digital monitoring
Seads	Milano	Oceans pollution

START-UP NAME	START-UP HQ	KEYWORD
ReOli	Coregliano	Olive oil butter
Replant	Torino	Wood chain
Revoilution	Arcavacata	Olive oil home production
Ricehouse	Adorno Micca	Rice building materials
Xfarm	Alessandria	Technologies and sensors
Robonica srl	Milano	Home cultivations
Robotic Saffron	Milano	Saffron
Azotech	Trento	Ice-cream
Azoti	Spoleto	Transparency
Beeing	Ravenna	Technologies and sensors
Beeopak	Torino	Packaging
BeFit Balance	Reggio Calabria	Sensors
Biomedfood s.r.l	Ancona	Scientific research
Biofarm	Milano	Digital platform
Bloom project	Prato	Ecosystem
Bluetentacles	Bolzano	Environment monitoring
Chokkino	Monza	Chocolate coffee
Local Strategy	Reggio Emilia	Marketing
Studiomapp	Ravenna	AI
Convective knowledge	Perugia	Innovative hoves
Cucina Mancina	Bari	Alternative diets platform
CyStellar	Napoli	Big data, satellite imag.,Iot
Demeter Life	Parma	Micro farms platform
Foodoso	Roma	Food raccomandations
Rockinbeets	Bolzano	Plant-based

START-UP NAME	START-UP HQ	KEYWORD
Diptera	Foggia	Insects for animal feeding
DI Novel Food	Bra	Insects based
Dotfarm – Flick on Food	Mezzago	Virtual reality
Drone Arezzo	Arezzo	Drones
Eat Trace	Chieti	Traceability
Edo App	Cesena	Big data
EggPlant	Bari	Bioplastics
Shockino – Mix Esperience	Campobasso	Pralines
Spirugrow	Pordenone	Superfood
Tactile Robots	Lecce	Robotics
The Bridge	S.Pietro M.	Alternatives to milk
Thingk	Busto Arsizio	Wooden electronics
Too Good To Go	Milano	Food waste
IdroPlan	Frascati	Irrigation
Tree Voice	Roma	Trees
Una Buona Occasione	Torino	Food waste
Wami	Milano	Responsible water
Wenda	Castel M.	Wine
Wineowine	Roma	Wine ecommerce
Wow food	Alba	Lemon caviar
Xnext	Milano	Recycling
Agricolus	Perugia	Precision Agricolture
Emerge	Saronno	Platform
Evja	Acerra	Purning and irrigating tech.
Sfera	Grosseto	High tech greenhouse

START-UP NAME	START-UP HQ	KEYWORD
3DRap	Avellino	3d
AeroDron	Parma	Drones
Agribiom	Napoli	Crop productivity
Agricoltura 2.0	Frosinone	Aquaponic, idroponic
Agrispesa	Cuneo	Ecommerce
Akilometrozero	Roma	Digital platform
T4i – Technology for propulsion	Padova	Aerospace
Foodscovery	Foggia	Food delivery
Foody Experience	Genova	Local
FruitsApp	Roma	Digital platform
Gnammo	Torino	Sharing platform
Gp advanced	Brescia	Aerospace
Hands on Food	Milano	Sensors
Hexagro Urban Farming	Milano	Urban farming
Identikeat	Taranto	Food delivery
iKooK4u	Narni	Intolerances
In-Vece	Firenze	Alternatives to milk
Iuv Ltd.	Faenza	Packaging
Urbyetorbit	Rome	Gis and Ai
1truied	Chiari	Trasparency
3Bee	Como	Technologies and sensors
Farzati Tech	Casal Velino	Quality control
Feat Food	Lecce	Delivery of Healty diets
Finapp	Padova	Environment monitoring
Sfridoo	Bologna	No waste communities
Food chain	Lomazzo	Transparency

FONDAZIONE E.AMALDI

IAP-ITALY Startups FoodTech

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Milda+	Perugia	Cremoli
Hotbox Food	Modena	Food delivery
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MozzaRisella	Treviso	Plant-based
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Seads	Milano	Oceans pollution

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Robonica srl	Milano	Home cultivations
Robotic Saffron	Milano	Saffron
Azotech	Trento	Ice-cream
Azoti	Spoleto	Transparency
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BeFit Balance	Reggio Calabria	Sensors
Biomedfood s.r.l	Ancona	Scientific research
Biofarm	Milano	Digital platform
Bloom project	Prato	Ecosystem
Bluetentacles	Bolzano	Environment monitoring
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