

Master's Course in Space Institutions and Policies - Diplomatic training School in Rome (Italian Society for International Organizations, SIOI, www.sioi.org) – 7 July 2021

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- Focus on Space & society -

- I'm not a scientist, I'm not an engineer and however I'm passionate by Space.

Like your Professor Gabriella Arrigo, that I thank to give me the opportunity of this lecture, I'm graduated in Political Sciences – International Relations and Diplomatic Studies at the Université Libre de Bruxelles (ULB) in Belgium

- After a long political career focusing principally on the themes of health and space, I'm now involved in Associations, Federation, and Company active in the space sector and I'm focusing on Bridging space & society.

Which will be the theme of this lecture

- We'll see together the following points:

- > Space technology to Earth
- > Space a popular sector?
- > What is the cost of space?
- > Space & end-users!!
- > Space & Politics, Space & journalists
- > Space & students
- > Conclusions

Don't hesitate to interrupt me and ask your questions during the presentation, I like when it's more interactive!

> Space technology to Earth

- I'll begin with a strange contradiction! Students love to see rockets, new spacecraft's, movies on space, astronauts and pictures of the Earth from space.

But most of you do not plan to make a career in the space sector!

Isn't it strange? Especially when the Space industry is in good shape and always needs talents!

I'll come back on this later

- And nevertheless, Space is fascinating!!

We walked on the Moon, we built an international orbital station, we sent robots on Mars, we dropped on a comet, we landed on the dark side of the moon, we explore the universe...

The evolution of the technology in recent years is fantastic, is prodigious!

Just a quick trip in time, do you know for example that's only in 2000 (21 years ago) approximately your age that the bubble internet bursts!! How did we do it before?

Please stop thinking that space is – only - the world of high-level engineers and technicians working on propulsion, new materials, robots and space missions.

Forget it!

- Yes it's true, some years ago, Space was inaccessible for civil society but slowly, Space evolved and makes our life easier: internet, weather forecast, GPS..

- More recently Space contributes to the economy: agriculture, transport, monitoring of the oceans, solutions for intelligent vehicles, helps for public management, natural resources,...

- Then Space becomes more social with services in healthcare like telemedicine, emergency calls. Also in pollution monitoring, safe & sustainable mobility, security, connected society, climate policy... I'll come back also on this.

- Almost every sector today is linked to Space! The impressive development of Space Applications leads to lots of new job opportunities in many different fields: Agronomy, Biology, Chemistry, Nutrition, Geography, Human Resources, Finance, IT, Medicine, Law, Management...

I would like to show you some numerous careers in space.

You can find it on www.youspace.be

Tab : Studies > type of careers



YouSpace - Careers
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> So, space must be popular!

- Is it the case? Is space well-known for the services it brings? Sadly not!

People are unable to identify 10 services even 5 services provided by space! And worse they think that space is too expensive and the money invest in space will be better invest on earth!

A fundamental problem! A dilemma!

- Have you ever wondered why space isn't still not popular today?

For my point of view, for 2 major reasons:

- The sector still lives too much into isolation, in a closed circle.

Most of the events, meetings ... gathered the same institutions, same enterprises, same people.

- The sector communicates a lot! A lot! But its communication is not appropriated for the end users!

Still recently, the communication usually was made by engineers and was often too technical to be attractive. Consequence a progressive loss of interest for everybody!

I'll give you an example:

- When they launch a rocket, the comments and explanations are related to: the trajectory and payload of the rocket, the propulsion, the engine. But not on the return on earth!

Fortunately, the communication is changing gradually but still too slow to be closer to civil society! We need an effective communication and a big raising awareness campaigns to winning the support from Society.

There is an association which is pioneer to raise awareness on space services: EURISY, I'll show you a short video

<https://youtu.be/FzkiPru4Yh0>

Definitively we are pioneers!!

> Now we come back on the cost of space!

Most of people think that space is too expensive! And we must agree that's a lot of money in absolute terms:

But we must never forget that the financial effort is made by civil society through their taxes. They are the ones who allowed the impressive development of space

The budget 2021 for:

- ESA is 4,8 billion
- Europe is 2,1 billion and
- NASA for expl is 22,6 billion.

Globally, it's a lot of money but the cost of space for every single European is less than a ticket for a cinema! It's 10€ per year! This change very much the perspective...

> Space & end-users!!

- If we must admit that most of the people are unconnected with space, Space now becomes often unconsciously the world of end-users, serving civil projects, helping for example entrepreneurs and farmers with new technologies, facilitating the life of the citizens at home, in the traffic, on sea but also for taking care of their health, sports, monitoring of pollution and climate change and many many others services without forgetting art & culture: satellites help to highlight, manage and safeguard historical cities

Let's go for a quick overview of space applications



Applications
spatiales - .pptx

> Space & Politics, Space & journalists

Italy is probably one of the European countries most involved in the development and objectives of the space sector. But it's not the case for all countries in Europe and in the world.

>> About Europe, there is a lot of differences between the countries.

All Heads of State and national ministers are not interested in developing a space strategy for their country and what about regional and local levels while space can be useful at all levels of power too!!

During 27 years I have worked with many political leaders at different levels in different countries, I would like to say from this experience, that we don't do enough efforts to convince politicians, decision makers to convince them of the benefits that space can bring to civil society.

In fact, because Space is too complicated, space is not one among the first's priorities for them!

If you invite politicians to a space events, most of the time they don't come, or if they come it's to make a speech for their visibility but they never stay! The communication is not made for them!

The question is the same for the journalists, you invite them and they don't come because it's too technical for them too!

We must rethink these events by creating some slots of discussion where they will feel included and comfortable.

It's important to underline and remember, that is Politicians, who shape public space policy and allow funding's!

Reason why it's interesting to convince them that space is an efficient tool to help their administration in their daily management.

And there must be no role confusion:

- > The implementation of space applications is the role of technicians & experts!

- Many priorities can be solved by tailored space services

- > The role of politicians is to develop their city, their region, their country!!

- Their role is to initiate dedicated policies, identify the needs of their citizens

> We arrive to space & students

What an enthusiasm when Armstrong in 1969 walked for the first time on the moon!

All the world was fascinated by the feat.

Thanks to this success, companies, institutions start hiring staff and lot of young people decided to join the sector.

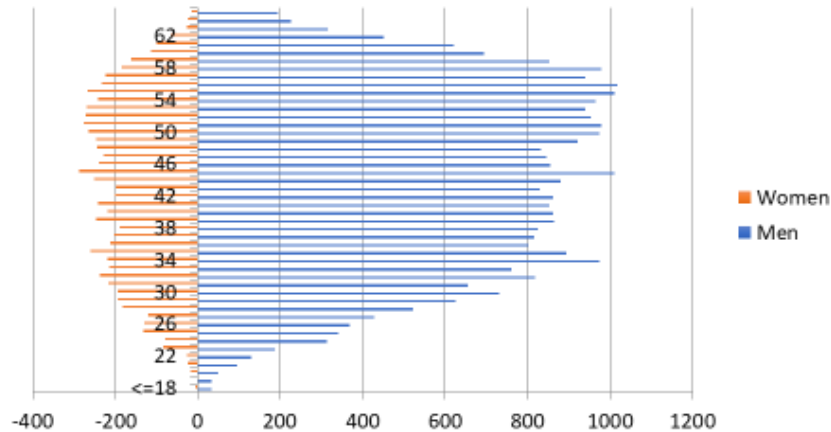
Then slowly the fervor and the euphoria has return, again probably due to a lack of adequate and targeted communication

From 2010, a large proportion of staff begin to reach the age of the pension and the issue of recruiting high level graduated arose. The sector realized that it was time to recruit.

But they have encountered a lot of difficulties in finding young graduates interested!

Illustration in figures:

Age pyramid and gender distribution 2017 ASD-Europaspace



June 2017

P. Giordanengo - P. Lionnet

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The Space workforce in Europe

Interesting to know that the space workforce represents approximately: 36.000/38.000 people, average age: 44 year old. But people between 49 & 58 represent 35% of the total workforce! It means a lot of retirements during a decade.

Not taking into account the competition with the aeronautic sector.

What is the situation in 2021?

As I said in the beginning most of students (maybe not in Italy, I don't know) do not plan to make a career in the space sector!

But today with robots on Mars, with the Lunar Gateway, Jef Bezos who will be the 1st tourist in space... slowly things are changing, the interest and the excitation returns.

And the students?

We make an interesting experience with YouSpace, the Association I launched in 2014,

We have been into the Belgian Universities and invited the students from all Faculties of Sciences to a meeting with 3 guest speakers from: engineering, research and space applications.

They share their experience, their path, their core-business, they inform about vacancies After the presentations we have a little reception with beer and sandwiches to meet and discuss and making networking

During our visits in the universities we made 3 findings:

1. Many students do not consider starting studies in relation with space
2. Lack of information by the sector which is too discreet! It's also their role to convince the students that space is a diversified field, with a future, rapidly evolving and.... a sector which recruits!
3. Lack of information from Universities, during their studies, an overview of the space sector is never proposed to students. They ignore the numerous domains in space, for most of them they think it's only a job for astronauts

Reason why, we decided then to launch Switch to Space

The concept is to give overview of the numerous domains of space and a top down vision from strategic, economic, technical perspectives.

We organize this event every 2 year

> The [1st Switch to space \(slide\)](#) event was organized in 2018, we gathered more the 500 Students and young professionals and 100 space experts. A face-to-face event with 50 speakers !

The morning was dedicated to an overview about Space governance, Space vision for Belgium, multidisciplinary, communication, components of space missions, Industrial key actors,...

All the day, it was an intense networking between the professionals and the Students & young professionals

During the afternoon, we had 6 studies sessions with 4 or 5 presentations each on

- Political and Legal Framework
- Life science
- Space technology
- EO applications 1 Copernicus
- Physical sciences
- Prototyping and Testing
- Galileo communication

> [The 2d Switch to Space](#) event was organized remotely last year. We had more than 1.600 inscriptions from different countries in the world.

We organized it on 8 days from 5:00 to 6:30 PM, each day we present a topic with 4 or 5 presentations each on

- Political and Legal Framework
- Life Science and Microgravity
- Out of this world technologies
- Climate, Environment/ the Green Deal
- Exploring Universe
- Space security and Defense
- Newspace, Space Business
- Satellites, we use them every day!

Don't hesitate to go on our website, you'll find a lot of information, presentation recorded, **Tips & tricks (Slide)**

> My conclusions

will be short, the aim of this Lecture was to give you another vision of space, which is not scientific, not technological but to stress on few key points, one of which seems important to me: we need an accessible and dedicated communication to the public whether they are students, politicians, journalist and civil Society if we want to turn them into space enthusiasts!

You are at the beginning of your professional life, it's means that you'll work approximatively.....
40 years and probably more!!

Think twice to make the right choice for your future career

Make your professional life exciting!!

Make your life beautiful!

Thank you .