



20th Anniversary of Xjenza, Science Development in Malta: Role of the MCST

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The investments made in modern science and technology have brought us to where we are today. The sheer amount of disruptive innovations, striking discoveries and the multiplication effect of research findings have provided a quantum leap in the advancement of humankind. This, to a magnitude, was not perceivable in the past.

Inspirational advances have been made in health science in terms of stem cell therapy and genome sequencing, in ICT through advanced networking and telecommunications technologies, as well as strong data and supercomputing performance. The energy efficiency and renewable energy sector has opened up new opportunities for societal challenges. In 1959, American physicist Richard Feynman delivered a famous talk entitled “There’s Plenty of Room at the Bottom”. Since then, nanotechnology advances have broken boundaries within chemistry, biology, physics, materials science and engineering.

Science is an educative process providing technical creativity through inquiry, experimentation and the development of solutions. This is also seen in our local tertiary educational institutions in Malta, maintaining a strong foothold for the significant research being conducted across our islands.

The aforementioned scientific advances are in fact echoed through our local institutions, which have transformed greatly over the years. The research administered through the Malta Council for Science and Technology (MCST) for materials and manufacturing engineering, health and medical devices, renewables and recycling technologies, aviation and aerospace, and the ever-growing projects in ICT, have created a strong portfolio of academic and applied science knowledge. Such research has been conducted with MCST support through the National R&I Programme since 2004. The

subject areas of focus evolved from generic thematic areas into the smart specialisation areas MCST has identified, through public consultation, and as presented in the National R&I Strategy 2020.

MCST has not stopped at the development and implementation of National R&I Programmes but - through its other units - has supported numerous researchers through H2020 advice as the National Contact Organisation. H2020 encourages collaborative endeavours with an international dimension, which has vastly developed over recent years. This is particularly important for increased capacity-building and competitiveness on an international scale. Reflecting further on internationalisation, local researchers have come a long way from the limited bi-lateral cooperation with other countries 20 years ago, to a proactive attitude on collaborations with foreign entities. MCST further supports this not only through the medium of EU frameworks, but also through its own Internationalisation Partnerships Awards Scheme. This programme has seen almost 20 research units pairing up with foreign entities to develop excellence in science.

Most science and technology advances are attributed to basic research, technology progression, and the practical implementation in society. Thus, both pure and applied sciences are integral to an attainable scientific solution. MCST understands the importance of economic sustainability and competitiveness through step-change research, in the same way as it is echoed across Europe and beyond. Hence, it has also developed frameworks for supporting researchers in commercialisation feasibility assessment through the programme FUSION. Some 50 local research units have benefitted from guidance and mentoring in this respect. Several of these then proceeded to tap into research funding through a consortium. In fact, since 2004, MCST has disbursed

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approximately €11 million to its Technology Development Programme.

The R&I ecosystem, which is supported by MCST and other authorities support, has seen a rise in researcher jobs, opportunities for mobility and training, as well as dissemination of research results at international fora. It has observed further interest from the public sector in R&I, to develop products and services that are resourceful for society. In recent years, we have seen a growth in the partnerships between the academic and private (i.e. industrial) sectors, to ensure a smoother transition between the exploratory and basic research, through to technology development and applied solutions for the generation of economic return. The prospects for scientists in Malta, have indeed come a long way.

Despite science being an inspirational subject, its profound mark on virtually everything we encounter in our daily lives is often taken for granted. The relationships between science and everything around us are not always evident to the uninformed. Hence, to propel science popularisation forward and to create an educational basis for scientific inspiration to commence at a

young age, MCST have embarked on its largest project yet. The project, Esplora, will help to encourage the uptake of scientific subjects by students who will form tomorrow's future for Malta. This is particularly relevant, as economic sustainability is well-grounded in science education, as well as other factors.

Esplora is a €26 million project designed to create a National Interactive Science Centre. This project, involving the regeneration of a historical site known as The Bighi Naval Hospital, will house a fully interactive and physical experience for students aged between 3 to 15 years old, as well as the general public. The Centre will therefore complement the formal educational system through the promotion of scientific communication, in an informal and interactive manner.

In conclusion, whilst science has developed tremendously over the years, today's achievements and successes should not be seen as end-points, but as way-points to further scientific excellence. The investment in science and research will need to continue at an exponential rate, as new scientific discoveries create an avalanche of further opportunities to be explored and exploited in the future.