

BUSINESS INNOVATION SYMPOSIUM (E6)  
Space-related Commercial Applications and Markets (2)

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**Abstract**

Recent political developments indicate that the lifetime of the International Space Station will be extended to the year 2020. Next to “classical” scientific and applied research, ISS offers benefits and opportunities to commercial and industrial RD as well.

In the past, a number of industrially driven benchmark projects have demonstrated the value that microgravity environments offer for commercial entities. The experiments include technical alloys from the aluminium industry, micro fluidic chips for diagnostics, and dermatological experiments for skin ageing models.

The potential is significant, but has to be matched with a framework for utilisation which provides both understandable and reliable access to microgravity for industrial users. The current political environment, which calls particularly for more commercially driven experiments aboard the ISS, supports the creation of such a framework.

The intended transfer of strategically crucial activities within human spaceflight – e.g. logistics, services, etc. – from public to private entities could ideally enabling a higher degree of ISS utilisation by non-space industries and business. Sustained close contact through shared operating activities and a larger role for industrial research in microgravity can mutually reinforce each other. This process requires innovative paths into the space community for these new stakeholders, which set the focus on commercial feasibility and contractual reliability. Because of the fundamental difference in their ways of doing business, public and private entities require customised paths and the support of mediators who can fill the gap between them.

A crucial element in using the ISS lies in a flexible menu of precursor carriers, spanning the entire chain from drop towers, parabolic flights, sounding rockets to the utilisation of ISS. Access to all of these platforms enables choosing the most cost-effective solution for each individual experiment. In addition, awareness towards new developments in the space infrastructure can help to continually decrease experimental costs. The rise of private companies e.g. offering suborbital flights in the near future could establish a new, cost-effective platform for scientific applications.

Opening up the microgravity environment to new user groups, especially commercially driven private enterprises, requires the careful evaluation and adaptation of exiting processes. These users are typically not part of the established space community, but externals. Therefore, new access points and interfaces have to be created, in order to accompany – and to make possible – their access to space infrastructure. This process needs to be mediated via agents who are familiar with both worlds.