

Birth and decline of Hercules Control; HCTech

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Abstract – A brief overview of Hercules Control's ten years of existence as a marine technology developer. HCTech, with high impact developed products, is not able to bring them to the market.

The people involved (research professor and biologist-entrepreneur), their motivations, knowledge and ways of doing things are analyzed. The environment for this initiative is also analyzed from CIS (the mother company from which HCTech arises), from the Uvigo (as an institution and as support to the researcher), from the Administration (as institutional support to ebt's) and from the bank (as mandatory financial support due to the small size of CIS and the need for advances of project funds with the Administration).

A reflection on the collective aspect of any creation is made. In this case, a lack of entrepreneurial culture in the whole Galician society (administration, financiers, businessmen, workers, and even clients) is to be noted.

Keywords – University SpinOff, marine technology, entrepreneurial culture, failure,

I. INTRODUCTION

It is said that it is more important to count the failures than the successes. Here we will explain the life of Hercules control, a SpinOff of the University of Vigo that with absolutely groundbreaking products (authentic Killer applications) was not able to survive more than 10 years: from 2011, when we created it to give business form to Hidroboya, until 2021, when it is buried in the bureaucracy of the bankruptcy.

Data, dates and developments.

Created in 2011 by CD and XF after having developed and patented the Hidroboya in the United States with a great technological niche because there is nothing similar in the market. The Hidroboya solves in a clean and effective way the problem of the fouling that are fixed on the sensors, rendering them useless, when you want to measure parameters in the water. I have no doubt that in not many years, or another groundbreaking development appears, or all the sampling of parameters in the sea and inland waters will be done with Hidroboya technology.

The company is participated a few years later by the Uvigo as a Technology Based Business Initiative (iEBT).

Another groundbreaking development is the Ecodraga, a dredge that limits almost to zero the environmental impact of

dredging processes (which is currently very high). In this project, small changes, not difficult to implement in many existing suction dredges, are designed to turn the polluting dredge into an ecodredge that does not pollute. The social benefit of implementing this project is enormous. It would be desirable that in a few years, all dredges would be Ecodredges.

Another development of great potential was RAMICA, a buoy that takes samples of seawater, typically in the vicinity of outfalls, performs a fecal bacteria culture and sends the data to a server on land.

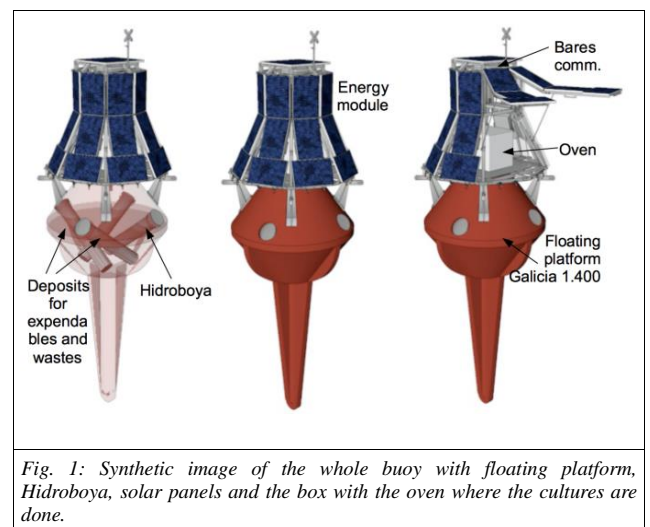


Fig. 1: Synthetic image of the whole buoy with floating platform, Hidroboya, solar panels and the box with the oven where the cultures are done.

Success in research projects

The tandem CIS-HCTech has a very high success in obtaining R & D projects both regional and national or European. This allows us to maintain 2 or 3 researchers on an almost permanent basis. This is one of the keys to success in the developments because it allows a huge increase in their value as researchers because there is a knowledge that accumulates and is exploited from one project to another.

Characteristics of the people involved

XF is a born researcher. If there is something that motivates him, it is a challenge to solve. He loves inventing (and is good at it) and easily spreads his enthusiasm to the

researchers in the group. He works very well as a research group leader.

CD is a long-time biologist. Because he loves to dive, he took his biologist work into the marine environment. With another biologist and a financier he created CIS as a consulting company doing a lot of good work and getting recognition for his good work in his area of influence.

CD enjoys understanding the client's problem and offering them what solves their problem. This closeness to the customer and his problem was a very helpful element to maintain the innovation of what we were doing from the first prototypes in the laboratory to the equipment built, assembled and installed at sea serving that customer.

That same proximity to the customer was a huge hindrance because each customer has a specific need. Thus, we were not able to develop ONE product. A unique product (with its variants if necessary, but unique) that we could produce in a regulated, structured way, and always the same.

Means and motivations

All the years of HCTech, and since we started doing research projects, there was a very good interweaving between company and university: We manufactured prototypes in the laboratory of the Uvigo and did product R&D in the company's workshop.

What motivated us was to innovate up to the installed product (which is an enormous difficulty). As what we like is to invent, we are unable to stop with ONE product and commercialize it (and that kills us!). We are unable to separate R&D from production, sales and putting it into service.

Problems:

- In managing people.

This collaborative environment of inventing and building means that problems in other aspects of the company get mixed up with work in the workshop and even in the laboratory.

As a result, problems in the company become fights with the workers. And this causes that the objectives of the workers are no longer aligned with the objectives of the company. And this is bad; intrinsically bad.

- Random institutional support

Research projects are granted, but payments are infinitely delayed, causing cash flow problems that undermine morale.

- Random financial support

When public money does not arrive, CD has to resort to banks which, after many years of joint work and without problems, refuse to give credit lines even for projects that have been granted and justified. Shouldn't they be able to collect from the Administration?

- Difficulty in implementing a business model

The long and successful trajectory of CD as a consultant is possibly a limitation when it comes to manage a company like HCTech that must develop and, if anything, manufacture and sell PRODUCTS. Moreover, the products (Hidroboya,

Ecodraga, RAMICA, ...) are of an enormous scope (the market for them is worldwide!). Perhaps we did not know how to take the right step here*.

*. Steve Jobs put Apple in the hands of ... because he believed that this was the person who could lead Apple to cover the market that was opening up for these computers in the world! [3]

- Limited business culture

From Galicia as the environment where HCTech lives. This limitation is in everyone. It affects therefore from the administration to the bank, to the entrepreneurs themselves, to the workers and also to the customers, who consider better what comes from outside than what is created here by people from here.

Is it all lost?

Hidroboya and Ecodraga will be the way to measure water parameters and dredging in the near future. Low cost wave buoys and New Oceanography will be everyday in the near future. They will not come from the hand of HCTech, but they will come; and that is more important.

At Martech'11 I presented Hydroboya and the newly created Hercules Control as: "Born in the industrial age to provide services in the information age". In a way creating HCTech was the way to 'go from inventions to products and bring these products to market'. We go from inventions to products ... and it will be others (or another way of doing) that will put those products to serve people.

Conclusion/Self-reflection

The pandemic that started in 2020 was the way out of the hidden problems that we sensed behind our problems with the payments of the Administration and the non-granting of credit lines with the banks when there was an Administration as payer.

Referencias

[1] Web page of Hércules Control.

<https://www.herculescontrol.com/>

[2] Web page of Xulio Fernández.

<http://xuliofh.webs.uvigo.es/>

[3] Steve Jobs' speech at Stanford University, subtitles in Spanish

https://youtu.be/HHkJEz_HdTg