

S.M.A.R.T. UIB

Deploying the future

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"No hay viento bueno si no sabemos a que puerto nos dirigimos"

- Séneca (s. I dC)



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- Introduction in 3s
 - A little trip to the origins of western mind
 - The triple helix analysis
 - A big jump to the actual days

• From SmartUIB to S.M.A.R.T. UIB

- A long journey...
- Vision
- Mission
- Strategy
- Methodology
- Some projects
- Conclusions



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3 domains of knowledge

Episteme Poèsis Phronesis

3 corresponding states of knowing

Theoria Techné Praxis







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Theoria&Episteme

"theory" & "epistemology"

- Attainable only to gods







Techné&Poèsis

"technology" & "poetry"

daily know-how, method catalogue of literary techniques





Techné&Poèsis "technology" & "poetry" catalogue of literary daily know-how, techniques method Association with **machines** only since 1851!





Praxis&Phronesis

"praxis" & ... nothing

- knowledge that any one of us uses daily in the practice of living an everyday existence





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SOCRATES



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COLLABORATION IN **3**S

The Triple Helix Model

Etzkowitz & Leydesdorff (1996)







COLLABORATION IN 35























Positive overlap Indirect Industrial Policy

Government goes through University to reach Industry











Positive overlap

Civil Society as the

foundation of the Triple Helix





2020 **Civitas**



Positive overlap

Hybrid Organizations and Actions e.g. Incubator Movements







INNOVATION & CULTURE CHANGE IN 3S

3 Horizons Model (IFF)



INNOVATION IN 3S



Prevalence Third horizon transformative Second horizon innovation First horizon disruptive sustaining innovation innovation H1 H2 H3 Time

The Three Horizons of Innovation and Culture Change

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- symptoms of decline
- shortening cycles of crisis
- temporary, but never fundamental recovery.





INNOVATION IN 3S



H2: world in transition

The Three Horizons of Innovation and Culture Change

- ongoing innovation (technology, business, education, economy, agriculture, politics, culture, society...)

- can be disruptive...
- ... but sometimes absorbed into HI with no transformative change





INNOVATION IN 3S



The Three Horizons of Innovation and Culture Change

- regenerative culture
- continuous exploration of most appropriate responses to rapidly changing socio-ecological context
- fundamental shift in worldview





INNOVATION IN 3S



H1: the chairmanH2: the entrepreneurH3: the visionary





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"No nos atrevemos a muchas cosas, porque son difíciles, pero son difíciles porque no nos atrevemos a hacerlas"

- Séneca (s. I dC)





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A long journey...







From *smart*...







From smart...





From *smart*...





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DYN@MO



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From smart...

smart objectives

• Improve resource efficiency at UIB

- through imagination, innovation and intelligence

• Develop smart technologies...

- ... to be later transferred to society

• Improve student employability... - ... fostering in them an innovative and entrepreneurial

spirit

• **Detect and connect** people&groups working on similar issues... - ...for greater synergy





From smart...

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Public-private partnerships (PPP)









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From *smart*...





Vision

- UIB zero emissions
- Self-sufficient campus
 - Energy
 - Water
 - Zero waste
- E-mobility
 - •••





Mission

- Student employability
- Human capital transfer to society
- Attraction of global talent
- Improve branding
- Efficient use of resources



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"Vision without execution is only hallucination".

- (adaptado de un) Proverbio japonés







Strategy

- Secure funds
 - Structural funds
 - Public Procurement of Innovation
 - Competitive funding
- PPP Model
- Catalysts (we enable, we connect, we provoke)
- Motivation (*deploying the future*)







Methodology

- Islands within islands
- Production environment on campus
- Welcome center for compulsive innovators
- Indicator assessment





Methodology

- Best practice analysis
- Replicable in
 - Parc Bit
 - Palma
 - Mallorca
 - Balearic Islands
 - Mediterranean basin



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THIS IS TRANSLATED INTO **5 LINES OF ACTION**







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"We are currently preparing students for jobs that don't yet exist . . . using technologies that haven't yet been invented . . . in order to solve problems we don't even know are problems yet."

- Richard Riley, Secretary of Education under Clinton







• Health

- Pharmacogenetics
- Aids for disabled people. Smart/intelligent routes

• Participation

- Instant inquiries
- Education aspects
- Other aspects

• Employability

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- Training&Education:
 - Applied (via project involvement)
 - Business involvement
- Entrepreneurship and creativity
- Masters' in Innovation, Sustainability and Design (Int)
- Transparency, open government





- Consider
 - Thermal
 - Electricity
 - Generation (foresee 100% renewable energy)
 - Storage (short term, long term)
 - Distribution (use of service galleries)
 - Consumption (smart sensing, politics, big data)
 - Outside lighting
 - Sports center
 - Buildings
 - Student residence

Goals:

- Hourly modeling of the UIB energy system
- Integration with weather forecast



Smart>S.M.A.R.T. LINE 3 - WATER



- Water cycle on campus
 - Collection
 - Storage
 - Consumption
 - Purification
 - Cycle closure
- Intelligent/smart Spa
- Biological purification



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LINE 4 - ENVIRONMENT

- Carbon footprint
 - Oxigen production
 - Carbon fixation
 - production of biomass + active elements
- Social areas: edutaining park, ParcBIT...
- Heritage recovery (Font de la Vila, Siquia Real)



LINE 5 - TERRITORY

- E-mobility (car sharing)
- Biomass (role in energy management)
- Food production
- Microalgae
- Bioconstruction, sustainable®enerative construction
 - New generation modalities (smart pavement)
 - Generation (knapsack problem)
 - Energy storage
 - 3D printing, building material reuse
 - Green walls, green roofs
 - FDC (design stage)
 - PoE (lighting as building element)
 - ...
- Health&confort-technology integration







S. M. A. R. T.





S	sustainable
Μ	multi-disciplinary/multi-stakeholder
Α	applied
R	regenerative
Т	transformative





S	sustainable "100% less bad" - do no damage to eco-social systems so they can be sustained indefinitely - do not deplete your resource base
Μ	multi-disciplinary/multi-stakeholder
Α	applied
R	regenerative
Т	transformative



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S	sustainable
Μ	multi-disciplinary/multi-stakeholder
Α	applied
	 acknowledges limits of theoretical approaches constant learning by applying prototype solutions at the appropriate scale (<i>learning by doing</i>)
R	regenerative
Т	transformative
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R	regenerative
Δ	applied
Μ	multi-disciplinary/multi-stakeholder
S	sustainable

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creates solutions that restore and regenerate the bio-cultural resources, health and resilience of eco-social systems at multiple scales (local, regional, global)

transformative





S sustainable

multi-disciplinary/multi-stakeholder applied

regenerative

transformative

- contribution to the transition to more sustainable/regenerative cultures and thriving regional economies in global collaboration and knowledge exchange



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Solar bike path on UIB campus







Balearic Renault Network-UIB

agreement



- Promote Electric Vehicle
- Grant to develop projects related to electric vehicles





conclusions



- Institutional project
- Triple helix example
- Motivation of University members
- Industry and government recognition
- Aims to channel technology&knowledge transfer projects
- Can be build on a **new vision/paradigm**





"Si quieres ir rápido, avanza solo. Si quieres ir lejos, ve con otros."

- Dicho africano



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Thank you!

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