



UNIVERSITY OF SAINT JOSEPH

聖若瑟大學

CREATIVE INDUSTRIES IN MACAU

Innovation and Tradition at USJ

By Álvaro Barbosa
abarbosa@usj.edu.mo

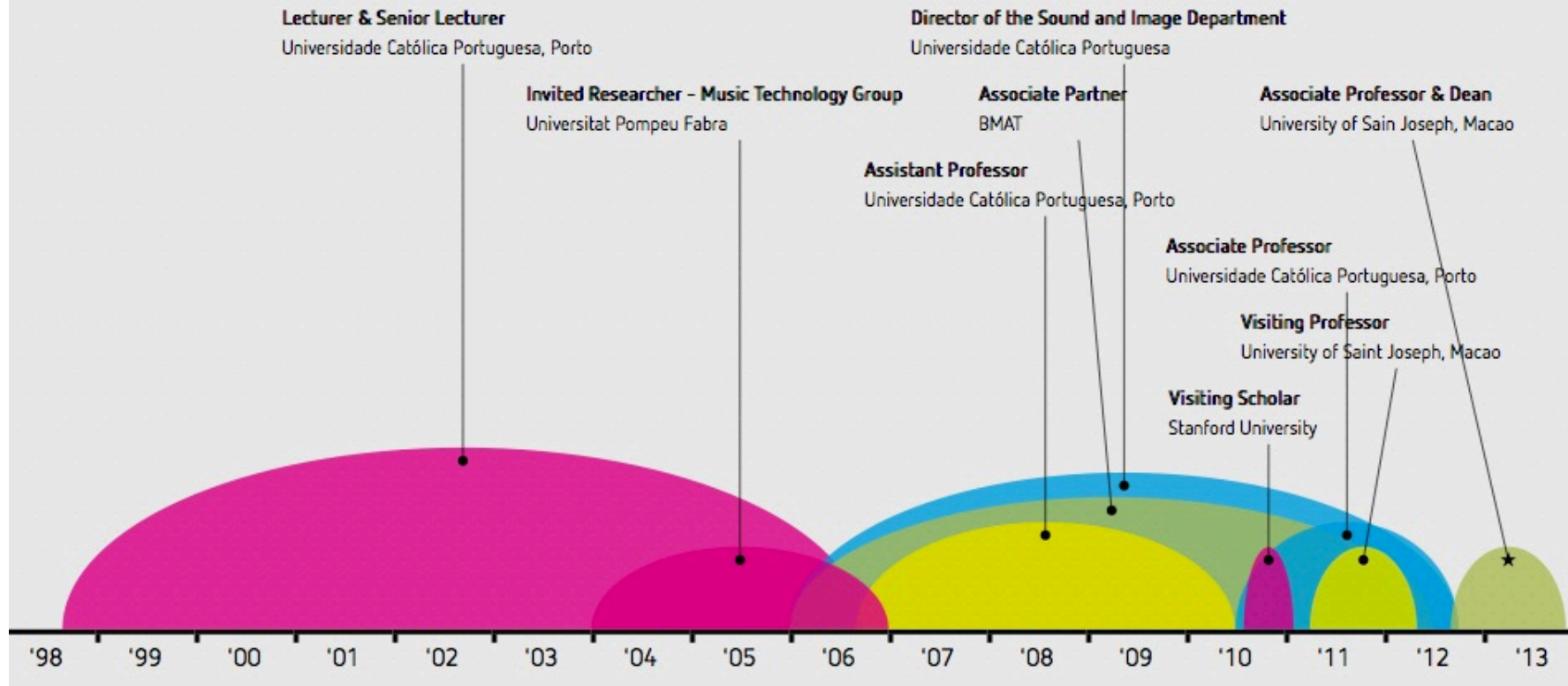
FACULTY OF CREATIVE INDUSTRIES

Álvaro Barbosa

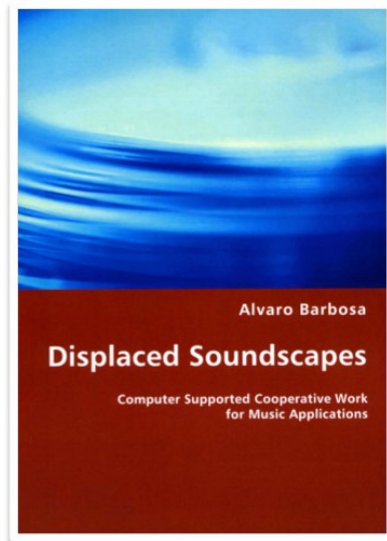
Early Web Developer in the industry (SAPO, Caleida & aeiou.pt, 1995-1998)



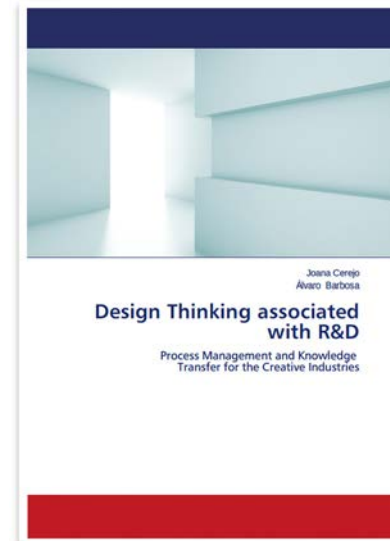
EXPERIENCE



Research / Books



(Book) Barbosa, A. 2008
“Displaced Soundscapes”
Designing Technology for Music
Performance Over the Internet



(Book) Cerejo, J. & Barbosa, A. 2013
“Design Thinking in R&D”
Applying Designing Thinking in
Innovation and R&D



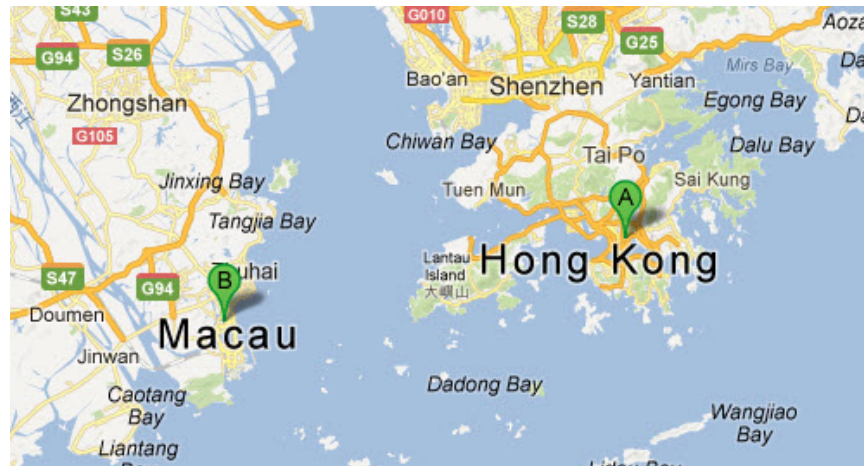
Macao SAR - China



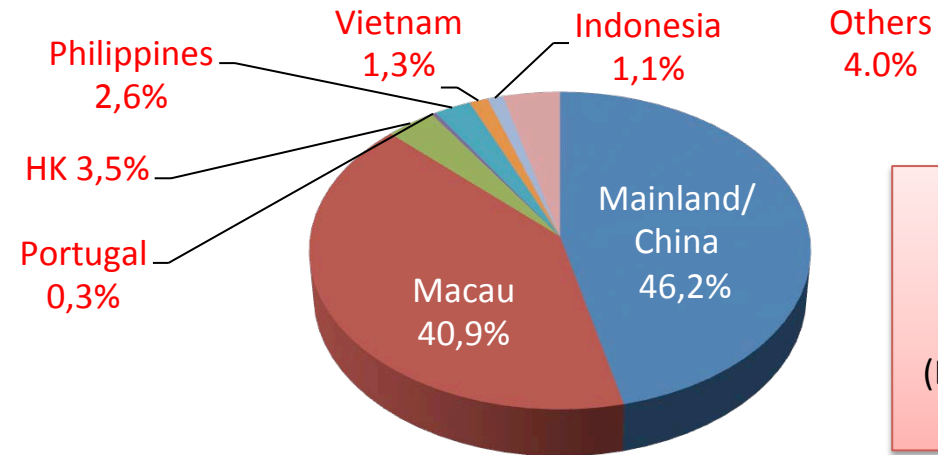
Macao SAR - China



Macao SAR - China



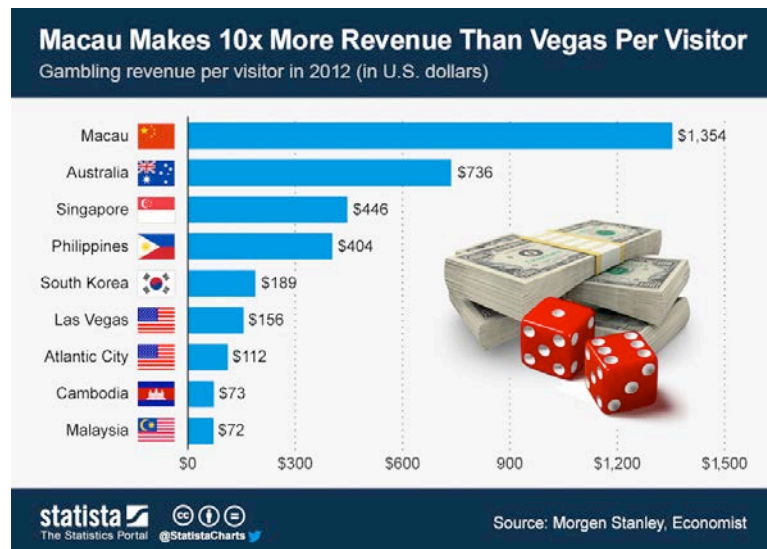
Macao SAR - China



2011
Total population
552,503
(Local population + non-resident workers)



Macao SAR - China



Macao SAR - China



Filipe Farinha

If Macao was a country it would be #2 in the world in GDP per capita (according to the World Bank) *

So why is it that when I walk the streets of Macao I don't feel like it is the second richest region in the world?

* <http://en.wikipedia.org>

[/wiki/List of countries by GDP %28PPP%29 per capita](http://en.wikipedia.org/wiki/List_of_countries_by_GDP_%28PPP%29_per_capita)

World Bank (2005–2012)^[3] [hide]

| Rank | Country | Intl. \$ | Year |
|------|---|----------|------|
| 1 |  Luxembourg | 91,388 | 2012 |
| — |  Macau | 87,765 | 2012 |
| 2 |  Qatar | 83,460 | 2012 |
| 3 |  Norway | 65,640 | 2012 |
| 4 |  Singapore | 61,803 | 2012 |
| 5 |  Switzerland | 53,367 | 2012 |
| 6 |  Brunei | 53,348 | 2012 |
| — |  Hong Kong | 51,946 | 2012 |
| 7 |  United States | 49,965 | 2012 |
| 8 |  Kuwait | 45,455 | 2011 |
| 9 |  Australia | 44,598 | 2012 |
| 10 |  Austria | 44,208 | 2012 |
| 11 |  Ireland | 43,592 | 2012 |
| 12 |  Netherlands | 43,198 | 2012 |

Programme for International Student Assessment (2012)^[18]
(OECD members as of the time of the study in boldface)

| Maths | Sciences | Reading |
|--|--|--|
| 1  Shanghai, China 613 | 1  Shanghai, China 580 | 1  Shanghai, China 570 |
| 2  Singapore 573 | 2  Hong Kong, China 555 | 2  Hong Kong, China 545 |
| 3  Hong Kong, China 561 | 3  Singapore 551 | 3  Singapore 542 |
| 4  Taiwan 560 | 4  Japan 547 | 4  Japan 538 |
| 5  South Korea 554 | 5  Finland 545 | 5  South Korea 536 |
| 6  Macau, China 538 | 6  Estonia 541 | 6  Finland 524 |
| 7  Japan 536 | 7  South Korea 538 | 7  Taiwan 523 |
| 8  Liechtenstein 535 | 8  Vietnam 528 | 8  Canada 523 |
| 9  Switzerland 531 | 9  Poland 526 | 9  Ireland 523 |
| 10  Netherlands 523 | 10  Liechtenstein 525 | 10  Poland 518 |
| 11  Estonia 521 | 11  Canada 525 | 11  Liechtenstein 516 |
| 12  Finland 519 | 12  Germany 524 | 12  Estonia 516 |
| 13  Canada 518 | 13  Taiwan 523 | 13  Australia 512 |
| 14  Poland 518 | 14  Netherlands 522 | 14  New Zealand 512 |
| 15  Belgium 515 | 15  Ireland 522 | 15  Netherlands 511 |
| 16  Germany 514 | 16  Macau, China 521 | 16  Macau, China 509 |
| 17  Vietnam 511 | 17  Australia 521 | 17  Switzerland 509 |
| 18  Austria 506 | 18  New Zealand 516 | 18  Belgium 509 |
| 19  Australia 504 | 19  Switzerland 515 | 19  Germany 508 |
| 20  Ireland 501 | 20  Slovenia 514 | 20  Vietnam 508 |

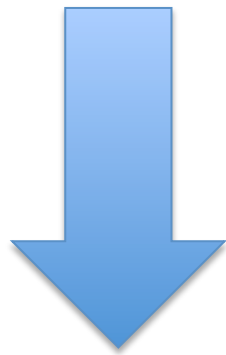
Macao SAR, China



SINGLE SECTOR DEPENDENT ECONOMY

"Dutch Disease in Macau: Theoretical Modeling, Empirical Diagnosis and Treatments"

Susana Mieiro, 2013 (PhD Thesis) http://www.usj.edu.mo/?post_type=thesis&p=3667



DIVERSIFY



Higher Education

Creative Industries



University of Saint Joseph, Macao SAR

Founded in 2009 – usj.edu.mo

The University College of Saint Paul December 1, 1594

(Founder: Alessandro Valignano SJ)

The Royal Seminary of Saint Joseph 1728 – 1968

The Macau Inter-University Institute 1996 – 2009

University of Saint Joseph 2009 (Funded by UCP)



1.800 Enrolled Students

Over 2.000 Graduated Students in the fields of Business Administration; Government Studies; Social Work; Psychology; Education; Design; Information Systems; Communication and Media; History & Heritage Studies; Lusophone Studies; Contemporary China Studies; Philosophy; Christian Studies; Religious Studies.

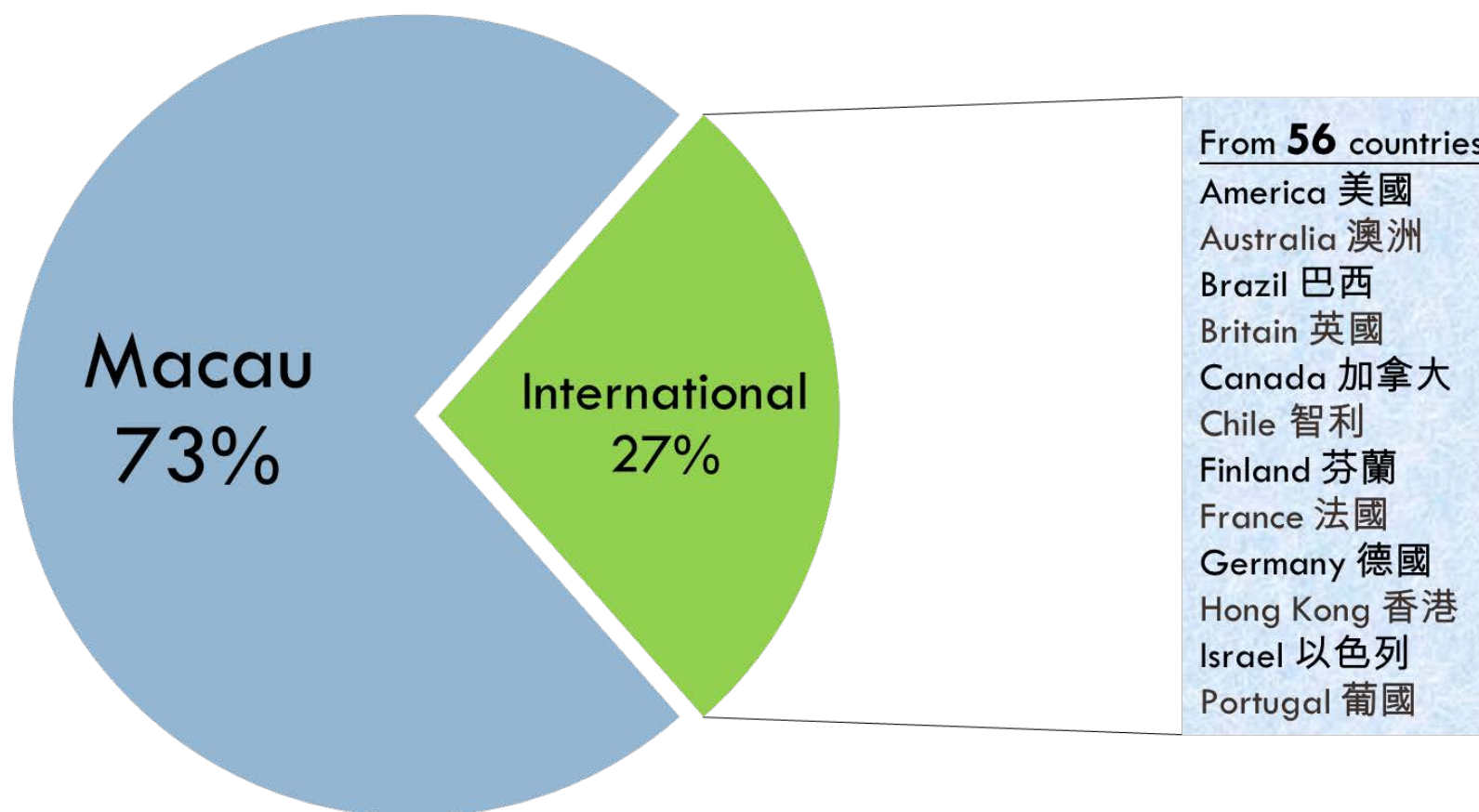


More than 30 University Programs:

- Bachelor
- Master
- Doctorate



University of Saint Joseph, Macau SAR





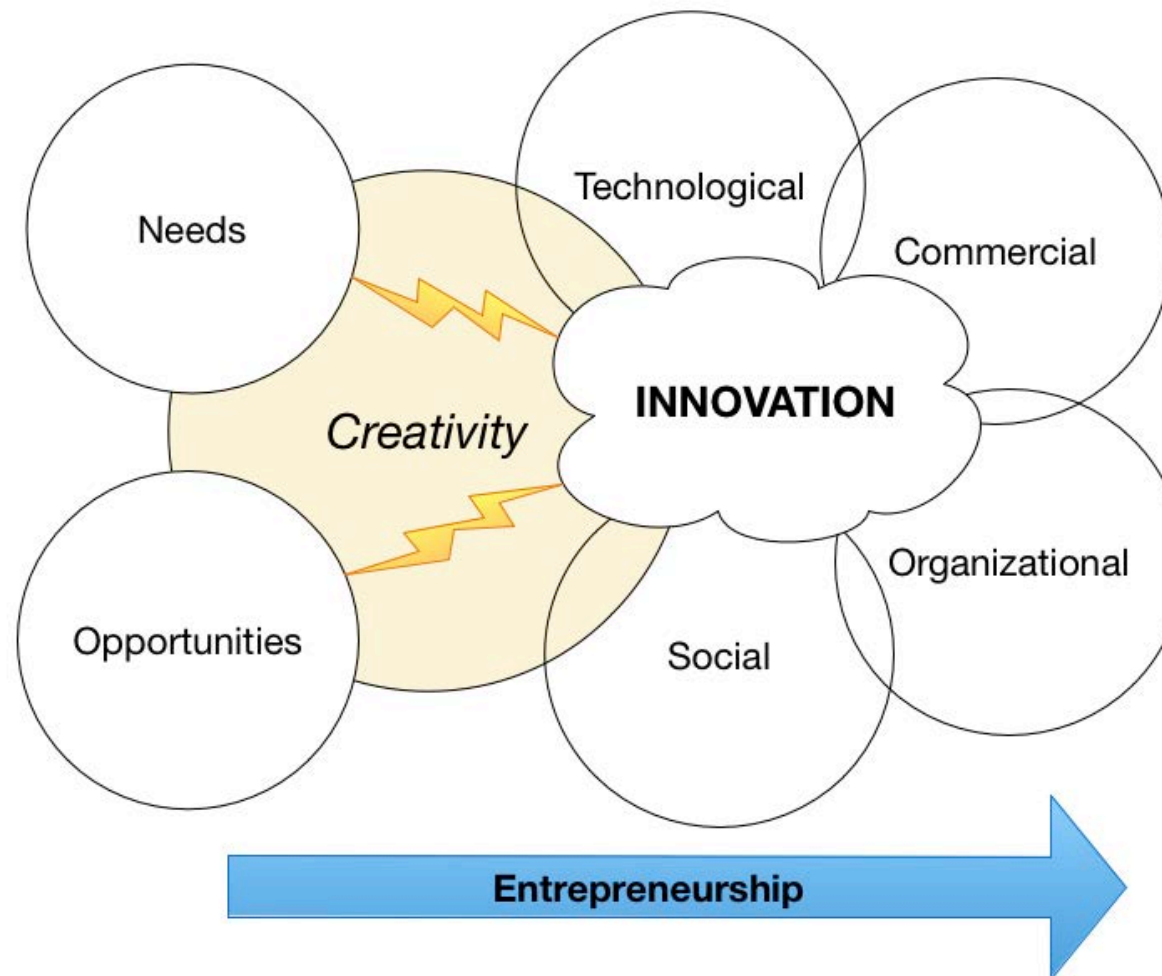
FACULTIES @ USJ

- ✓ Humanities
- ✓ Religious Studies
- ✓ Administration and Leadership
- ✓ Education and Psychology
- ✓ Science and Environment
- ✓ **Creative Industries**



WHY?

INNOVATION & ENTREPRENEURSHIP





Creativity \neq Art

CREATIVITY



CREATIVITY



Creativity is part of the process of
producing Art...

... as it is part of the process of producing
many other things...



Creativity

≠

Originality



The Obsession for **Originality** is the Biggest Enemy of **Mastery**...

...Which is also Necessary in Art

CREATIVITY

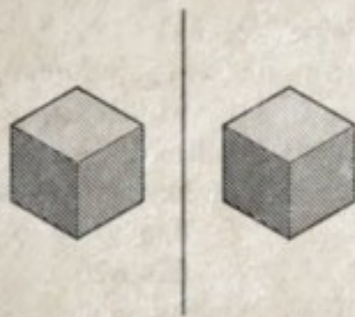


Everything is a Remix (2015) - <https://vimeo.com/139094998>

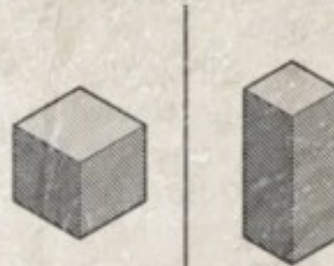
CREATIVITY



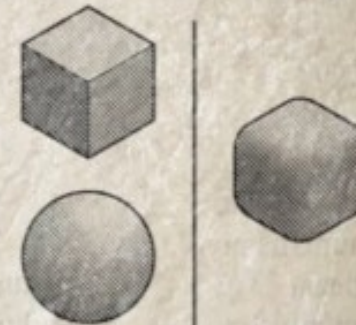
THE BASIC ELEMENTS OF CREATIVITY



COPY

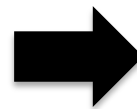


TRANSFORM



COMBINE

COPY



TRANSFROM



CIRQUE DU SOLEIL®



COMBINE



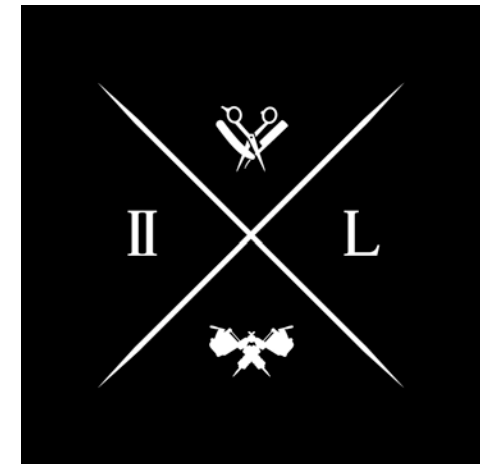
Macanese Entrepreneur **Fernando Lourenço**



+



=



CREATIVITY



CREATIVITY



CREATIVITY



*Creativity is the **Process**
of Having **Original** Ideas with **Value***

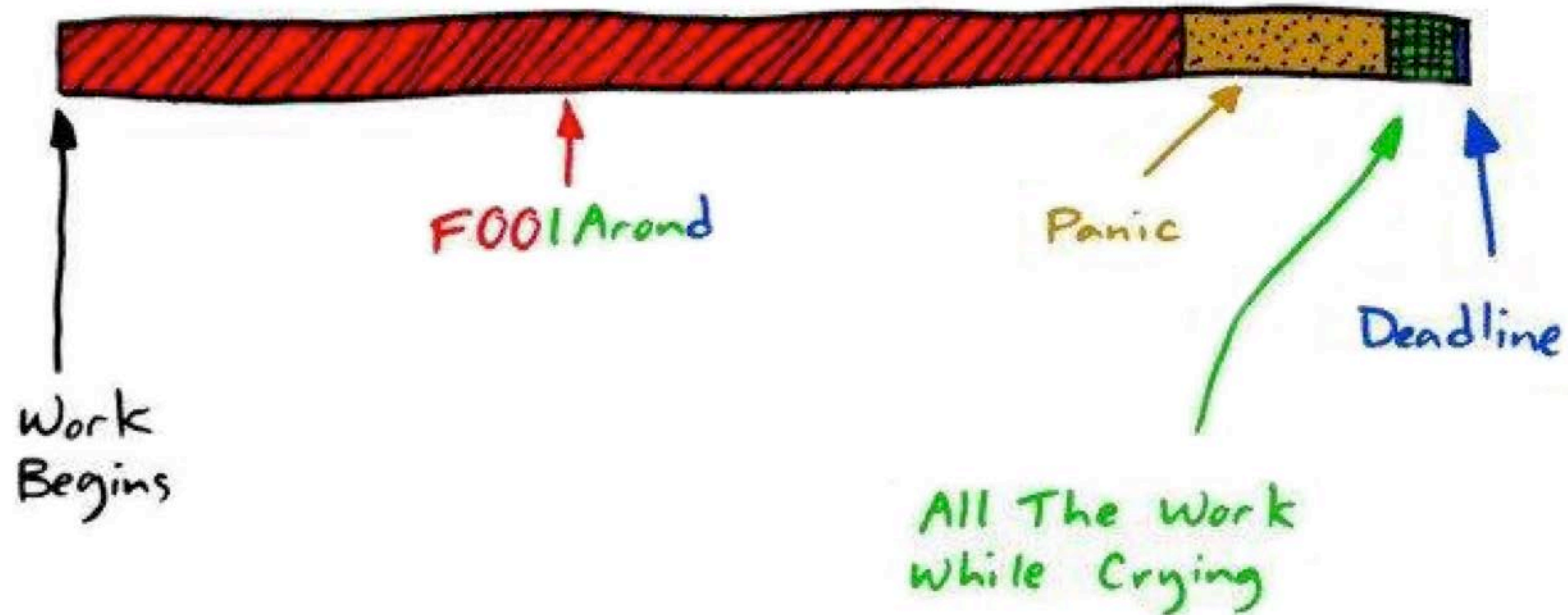


(Sir Ken Robinson)

CREATIVITY



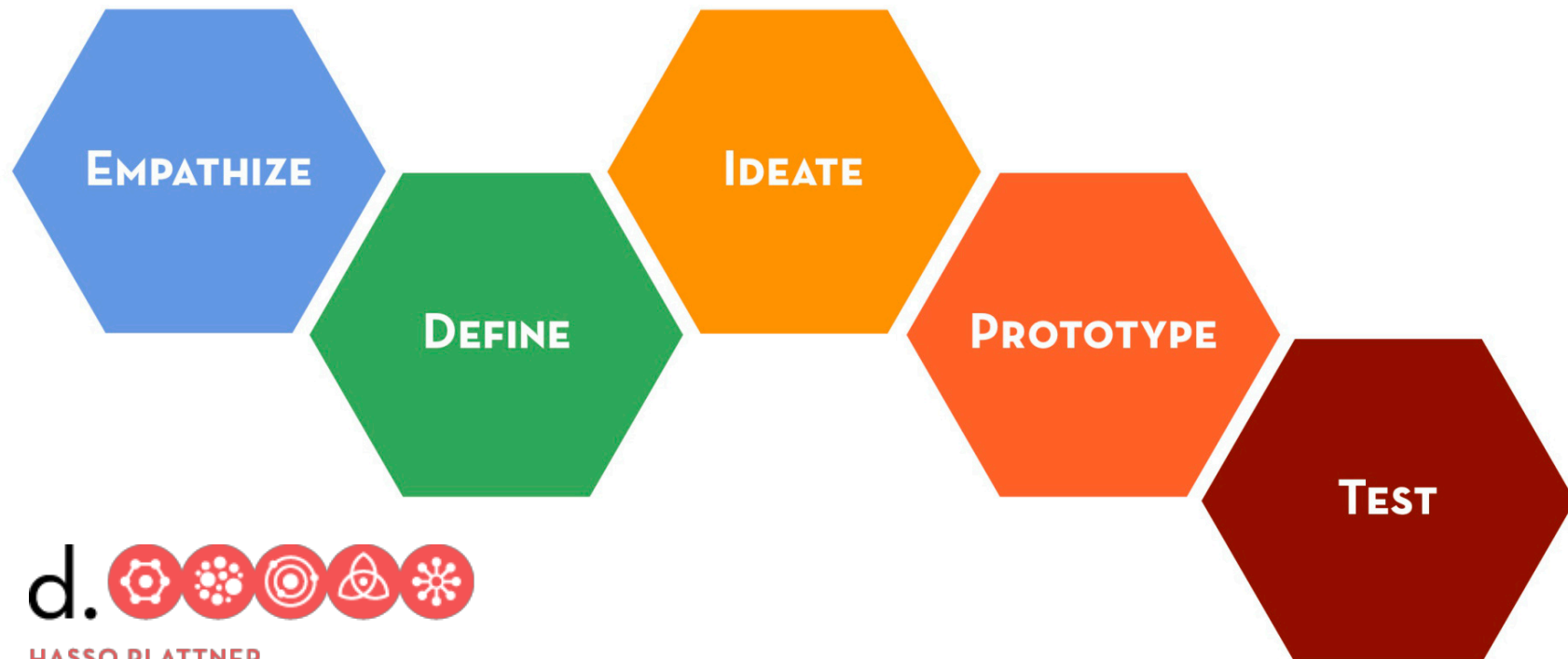
THE CREATIVE PROCESS



CREATIVITY



DESIGN THINKING PIPELINE (5 stages)



HASSO PLATTNER
Institute of Design at Stanford



Creativity \neq Talent

Creativity \Rightarrow Process

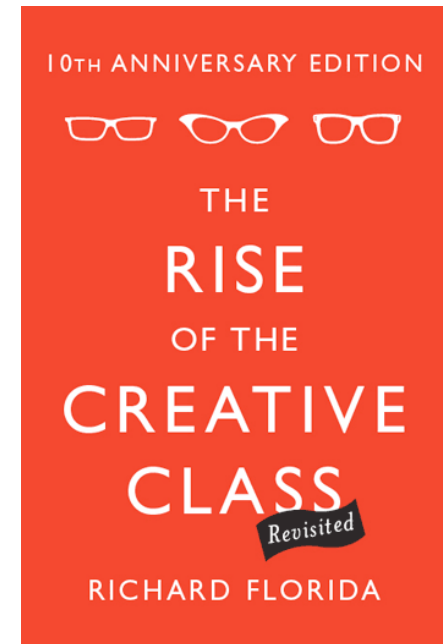
CREATIVITY



"human creativity is the ultimate economic resource"

Richard Florida (2002)

"The Rise of the Creative Class and How It's Transforming Work, Leisure and Everyday Life"





About **CREATIVE INDUSTRIES**



CREATIVE INDUSTRIES

DEFINITION:

*“those industries which have their origin in **individual creativity, skill and talent** and which have a potential for **wealth and job creation** through the generation and exploitation of **intellectual property**”*

By UK Government Department for Culture, Media and Sport (DCMS) in 2001

- ✓ Mentions the Idea of **Creativity as a Process** (Skills result from Processes)
- ✓ Focuses in **Economical Outcomes** (Wealth and Job Creation)
- ✓ Mention **Intellectual property** as a core tangible value



CREATIVE INDUSTRIES

- ✓ The term Creative Industries, refers to the **socio-economic potential** of activities that trade with **creativity**, knowledge and information.
- ✓ Governments and Society across the world are increasingly recognizing its importance as a **generator of jobs, wealth and cultural engagement.**
- ✓ Ventures within the Creative Industries usually seek a **Double Bottom Line**, not only focusing in **financial profit**, but also performing with **positive Social Impact.**



CREATIVE INDUSTRIES

12 Creative Sector according to DCMS after 2008:

- ✓ Advertising
- ✓ Architecture
- ✓ Arts and antique markets
- ✓ Crafts
- ✓ Design
- ✓ Fashion design
- ✓ Film, video and photography
- ✓ Software, computer games and electronic publishing
- ✓ Music, visual and performing arts
- ✓ Publishing
- ✓ Television
- ✓ Radio

CREATIVE INDUSTRIES IN MACAU

| | UNESCO | UK | Korea | Hong Kong | New Zealand | Canada | Australia | Denmark | Taiwan |
|-------------------------------|--------|----|-------|-----------|-------------|--------|-----------|---------|--------|
| Music | × | × | × | × | × | × | | × | × |
| Performing arts | × | × | | × | | × | × | | × |
| Visual arts | × | × | | × | × | × | | × | × |
| Crafts | × | × | | × | × | × | | | × |
| Design | × | × | | × | × | × | × | × | × |
| Fashion design | | × | | × | × | | | | × |
| Publishing | × | × | × | × | × | × | × | × | × |
| TV and radio | | × | | × | × | × | × | × | × |
| Film | × | × | × | × | × | × | × | × | × |
| Advertising | × | × | | × | × | × | | × | × |
| Architecture | × | × | | × | × | | | × | × |
| Cultural facilities | | | | | | | × | × | × |
| Software and computer service | × | × | | × | × | × | | | × |
| Interactive leisure software | | × | × | × | | | | | × |
| Creative lifestyle | | | | | | | | | × |
| Others ^a | × | | × | | | × | × | × | |

Notes: ^a The catalog “Others” refers to the cultural tourism and sports sectors in Unesco, animation industry and character in Korea, graphic design and marketing in Australia, toys and entertainment parks in Denmark, others in Canada

Source: Based on compiled information from CCA (2003a, 2003b, 2004b)



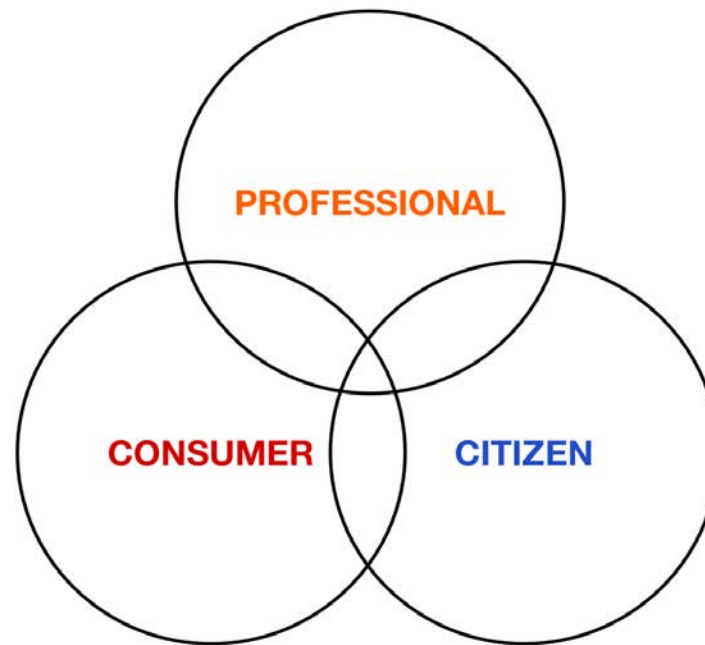
✓ **CREATIVE INDUSTRIES**

✓ **CULTURAL INDUSTRIES**

✓ **CREATIVE CLASS**

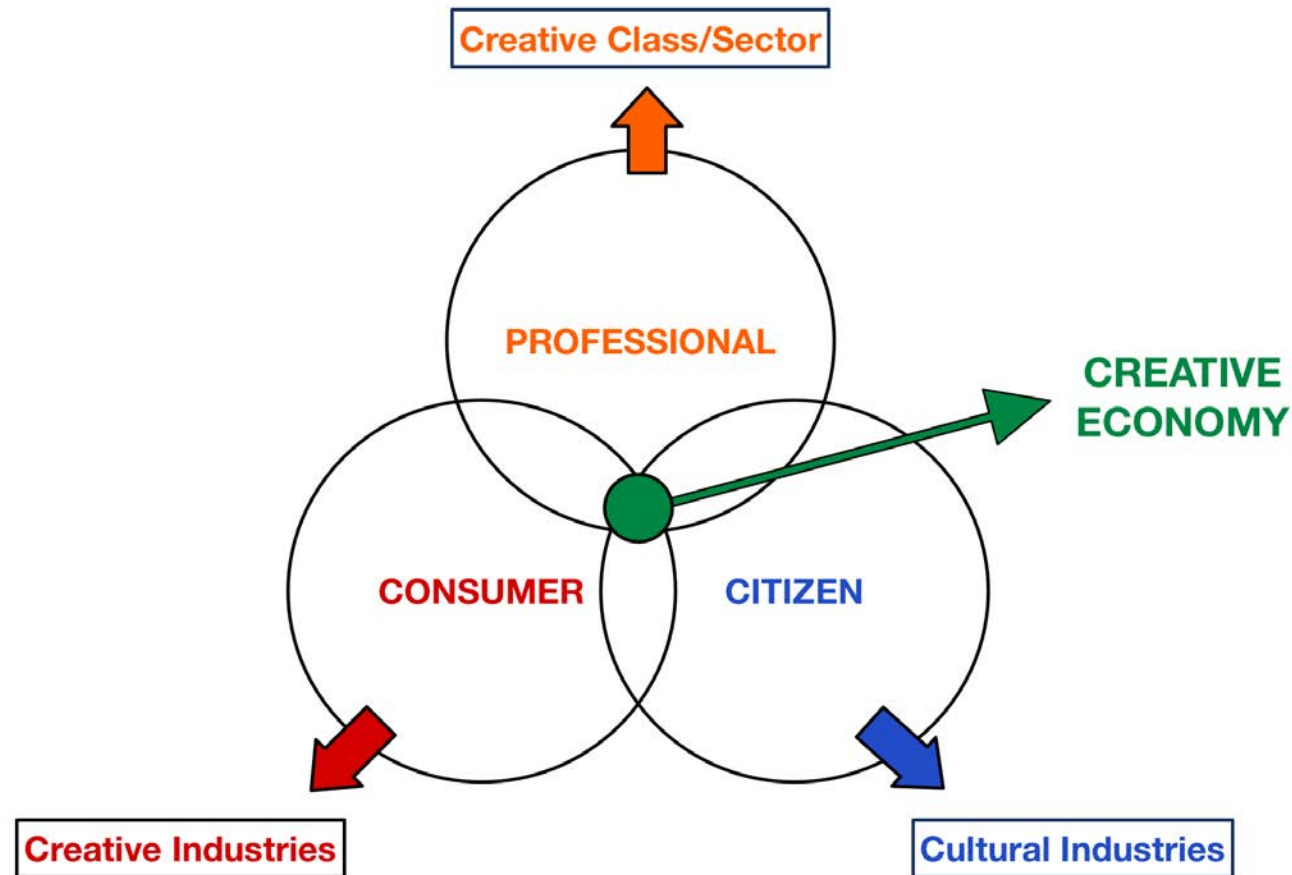
✓ **CREATIVE ECONOMY**

CREATIVE INDUSTRIES



Augusto Mateus (2015) "Culture, Arts and Creativity at the Heart of a New Economic Paradigm"

CREATIVE INDUSTRIES



Augusto Mateus (2015) "Culture, Arts and Creativity at the Heart of a New Economic Paradigm"



CREATIVE CLASS

- All Creative professionals working in **any sector of the Economy**

CREATIVE INDUSTRIES

- Ventures that focus on **Financially sustainable businesses** based on Creative Resources (Design, Publishing, Multimedia, Media Production, Architecture, etc.)

CULTURAL INDUSTRIES

- Ventures that focus on a variety of **'way of life' activities** (cultural tourism, heritage, museums, libraries, cultural entertainment, sports, etc). These Ventures are more concerned about primarily delivering non monetary value, including **cultural wealth and social wealth**.

CREATIVE ECONOMY

The direct result of the Cultural and Creative Industries activities and the work of the Creative Class

CREATIVE INDUSTRIES CLUSTERS



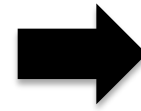
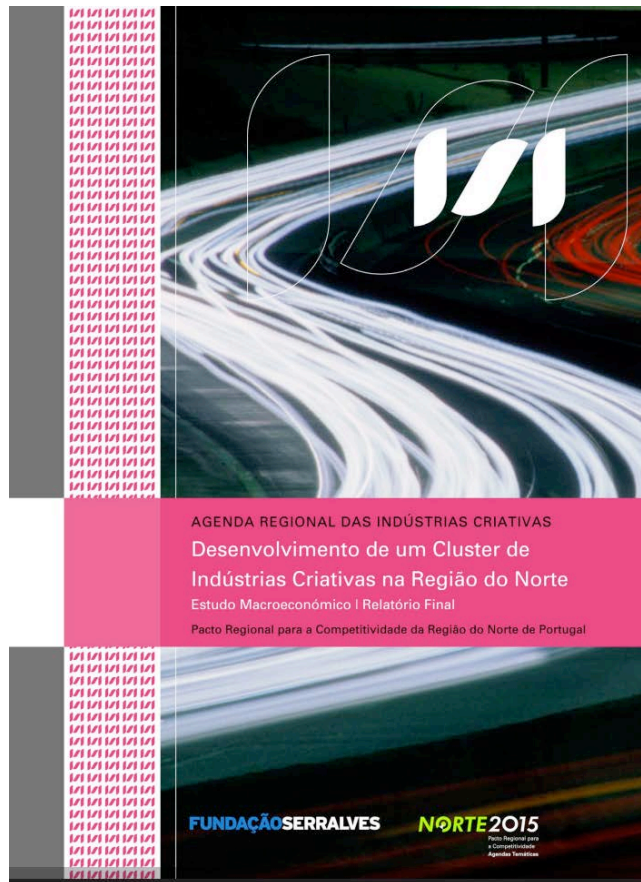
MAPPING PORTUGAL'S CLUSTERS

In a middle-income economy like Portugal, exporting clusters tend to be more natural-resource or labor intensive.



"A cluster is a geographical proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and externalities"
(Michael E. Porter, On Competition)

CREATIVE INDUSTRIES CLUSTER MAPPING



ecosystem spinlogic

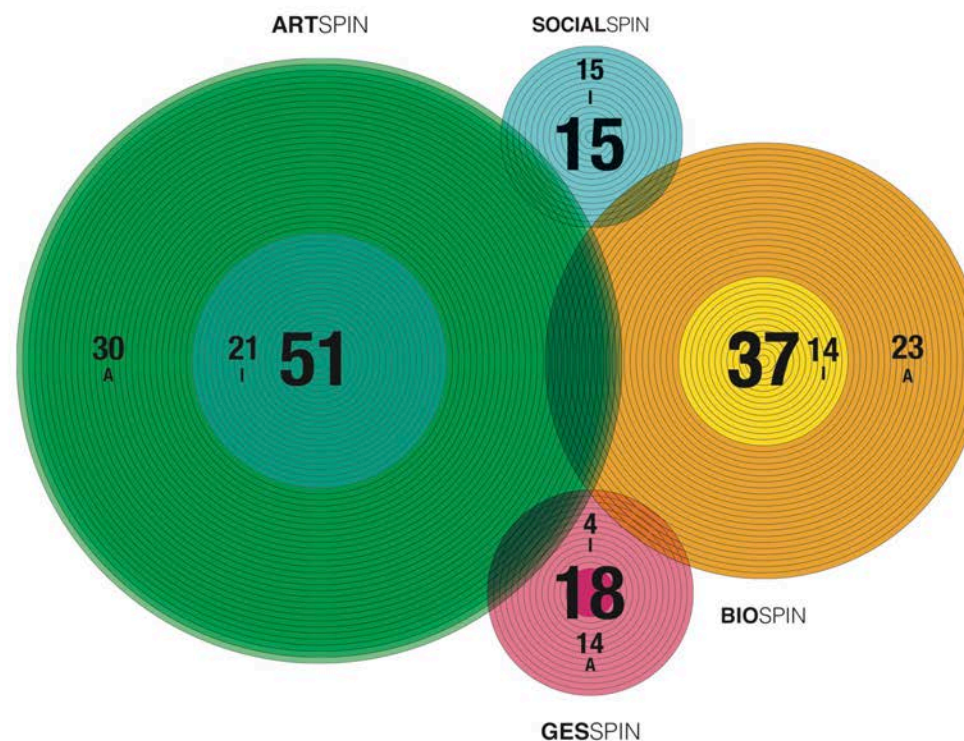
Católica Porto

www.porto.ucp.pt/spinlogic

121
COMPANIES

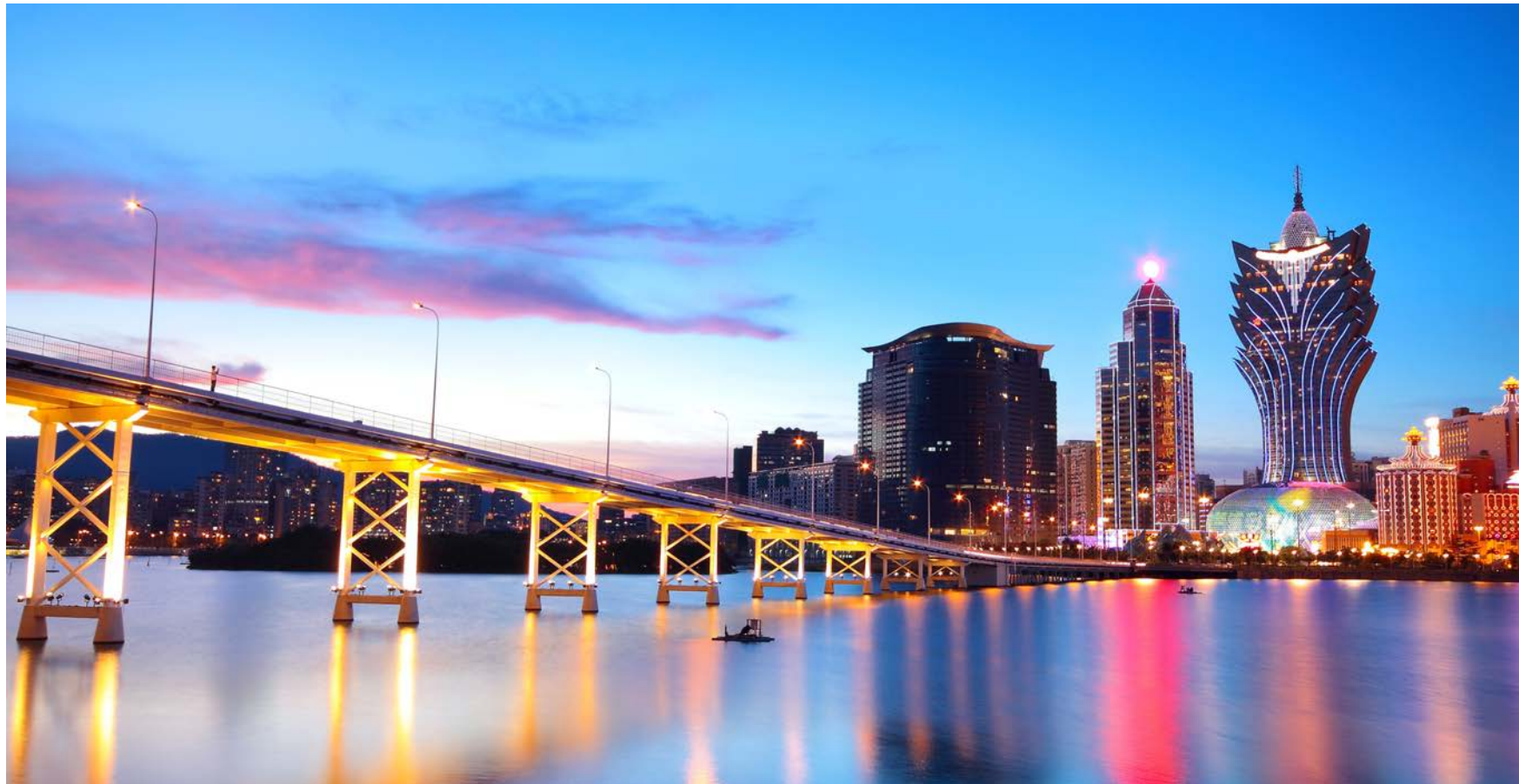
54
INCUBATION
I INCUBATION

67
ALUMNI
A ALUMNI

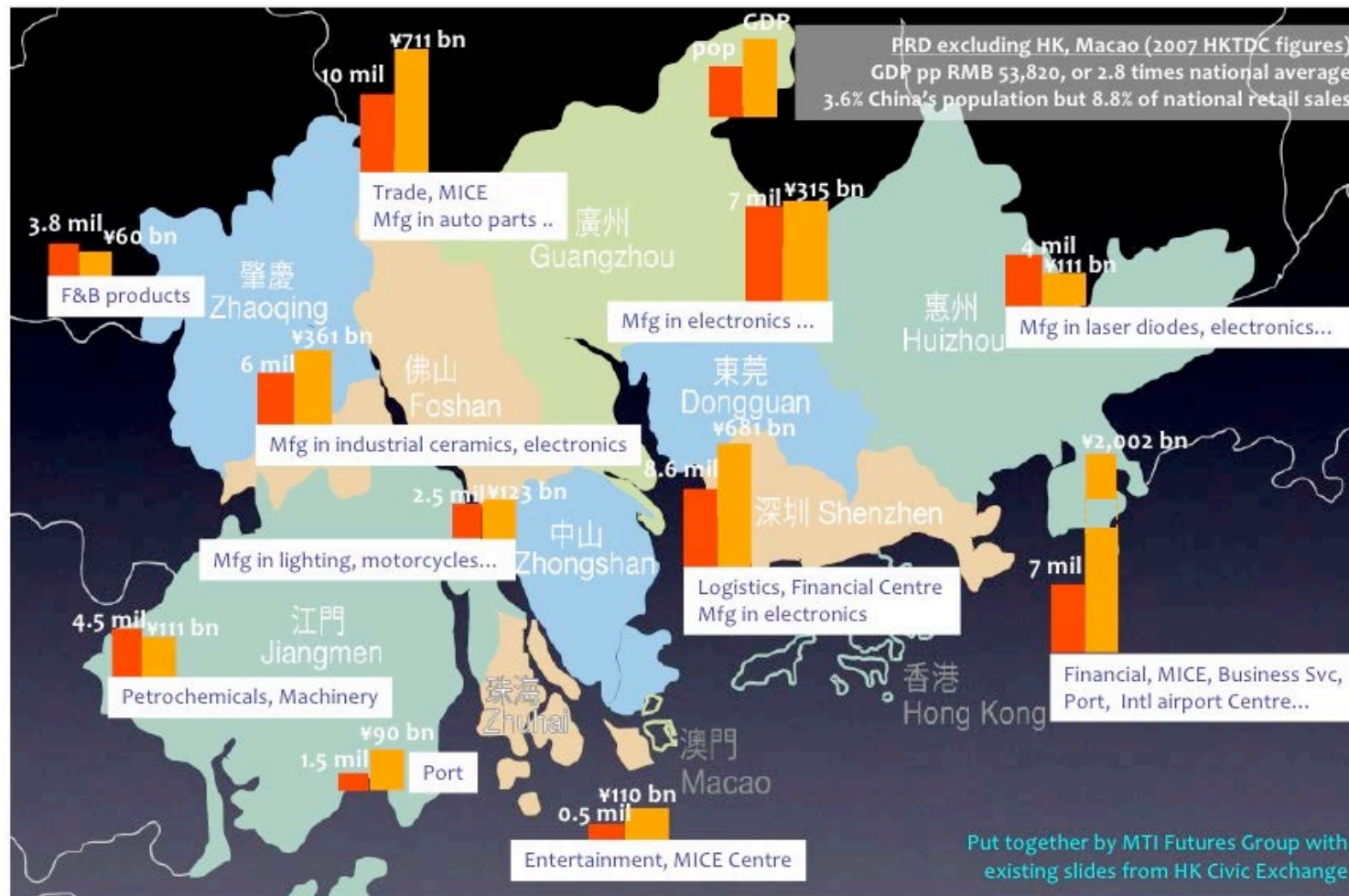


CREATIVE INDUSTRIES

MACAO



PEARL RIVER DELTA CLUSTERS FOR 2020



CREATIVE INDUSTRIES IN MACAU



澳門特別行政區政府文化局

INSTITUTO CULTURAL do Governo da R.A.E. de Macau

Macao Design
Industry Information
Collection Form

Macao Performing
Art Industry Information
Collection Form

Macao Visual Art
Industry Information
Collection Form

Macao Fashion Design
Industry Information
Collection Form

Macao Pop Music
Industry Information
Collection Form

Macao Publishing
Industry Information
Collection Form

Macao Animation & Comic
Industries Information
Collection Form

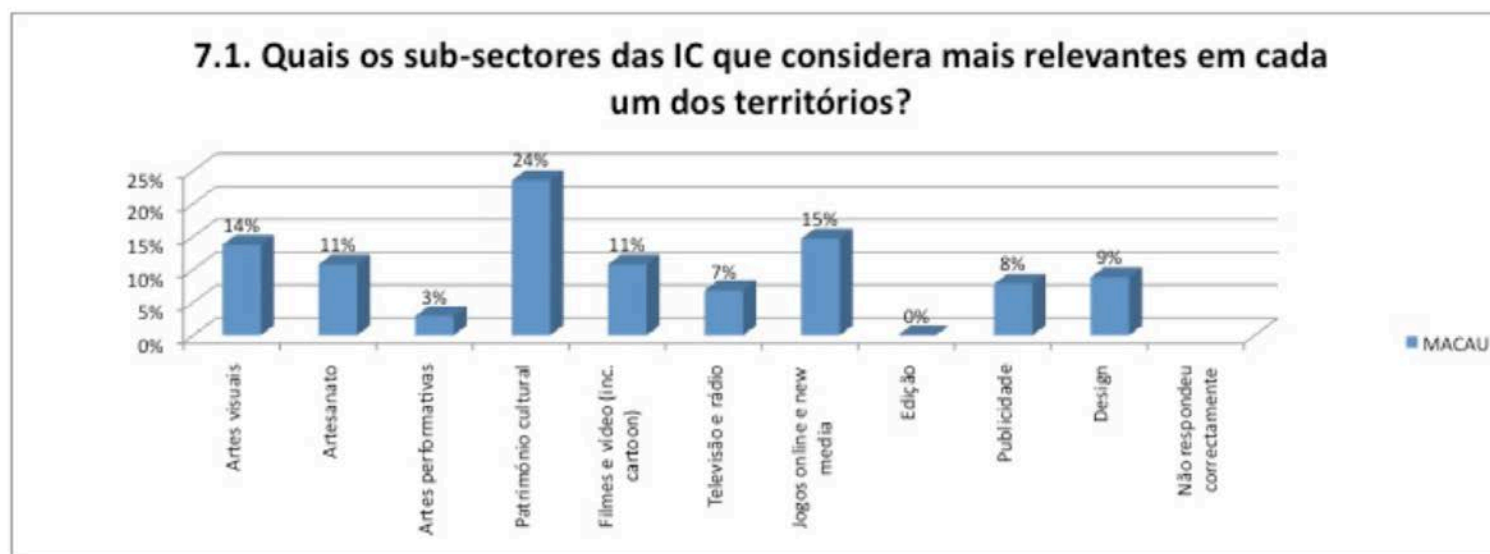
Macao Animation & Comic
Industries Information
Collection Form

Macao Cross-Disciplinary
Cultural & Creative Industries
Information Collection Form

Information Collection Form:
Macao's Cultural and
Creative Practitioners

Information Collection Form:
Macao Cultural and Creative
Industries - Related Activities

CREATIVE INDUSTRIES IN MACAU



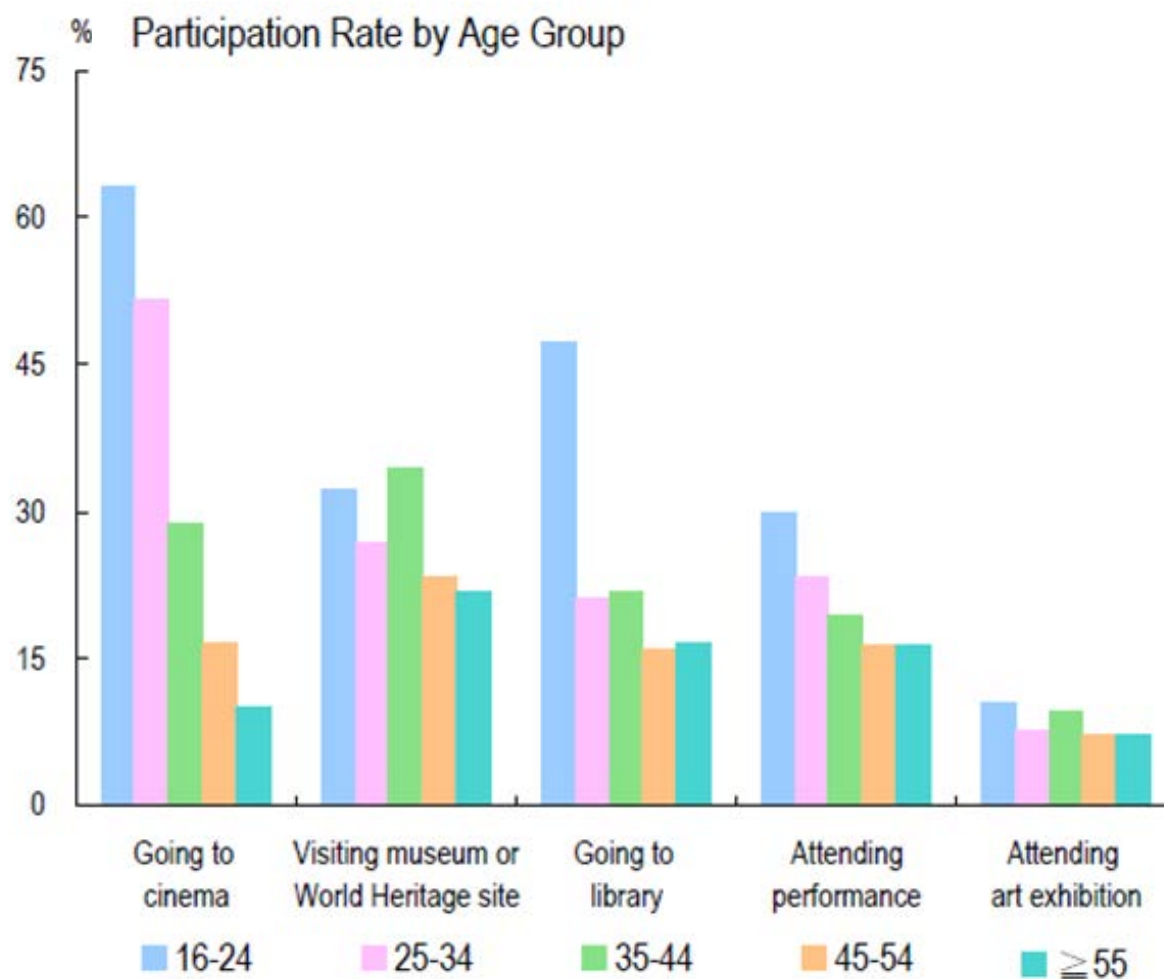
ICM Mapping

- | | |
|--------------------|-------------------------|
| 1. visual arts | 6. Popular Music |
| 2. Design | 7. Film |
| 3. performing arts | 8. Video |
| 4. Fashion | 9. Animation and comics |
| 5. Publishing | |

- ARCHITECTURE AND URBAN REGENERATION
- GASTRONOMY
- SPORTS
- SOFTWARE (MEDIA)
- HERITAGE AND CULTURAL TURISM
- EVENT TURISM

UCP/USJ Research Survey

CREATIVE INDUSTRIES IN MACAU



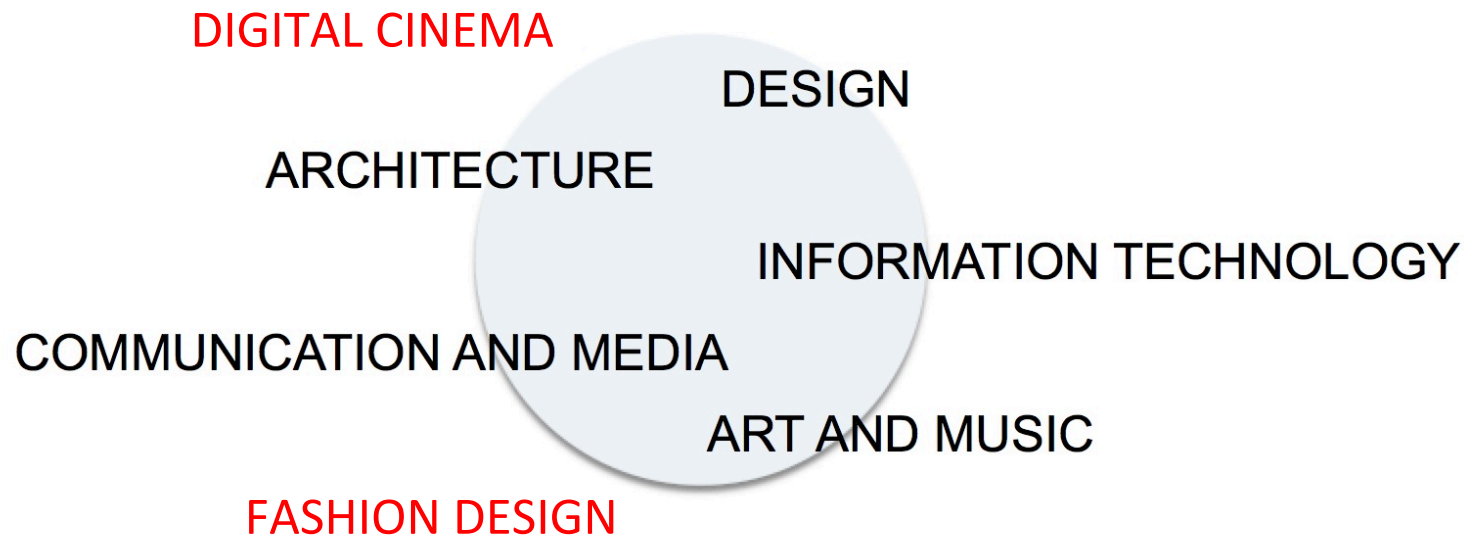
1056 cultural associations

CREATIVE INDUSTRIES IN MACAU

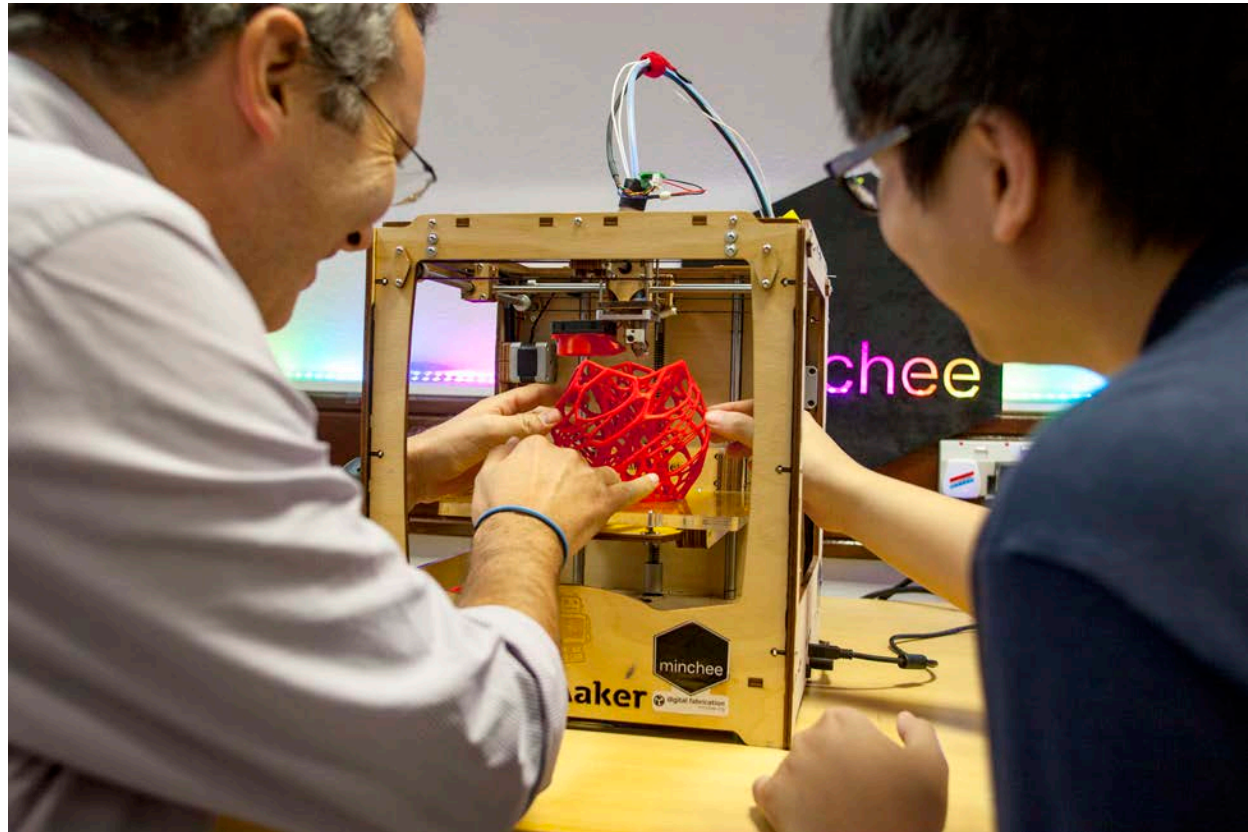




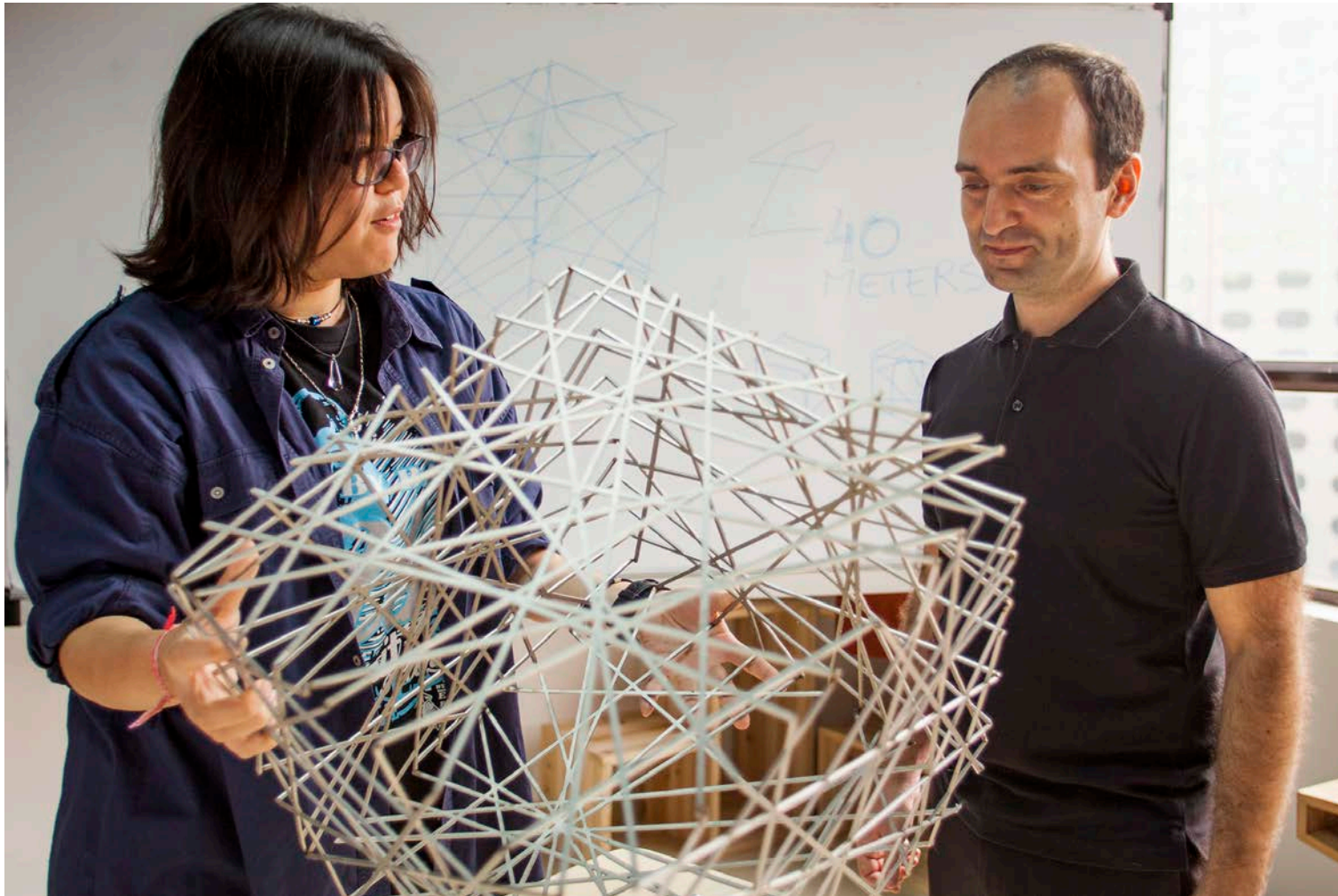
FACULTY OF CREATIVE INDUSTRIES



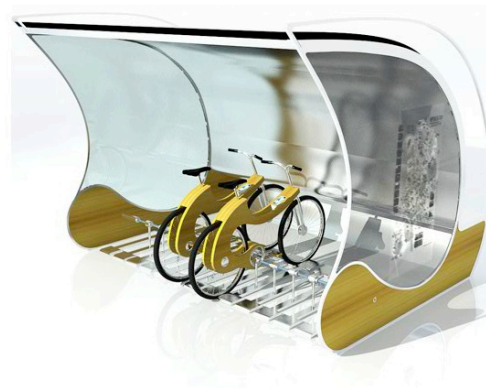
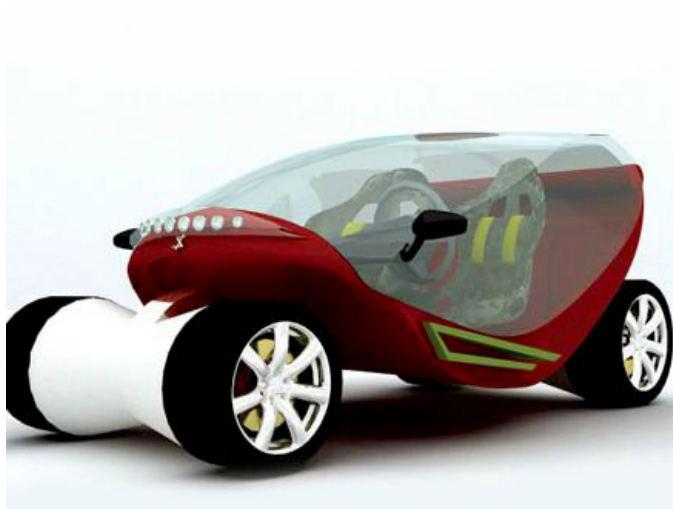
University of Saint Joseph, Macau SAR



University of Saint Joseph, Macau SAR



University of Saint Joseph, Macau SAR



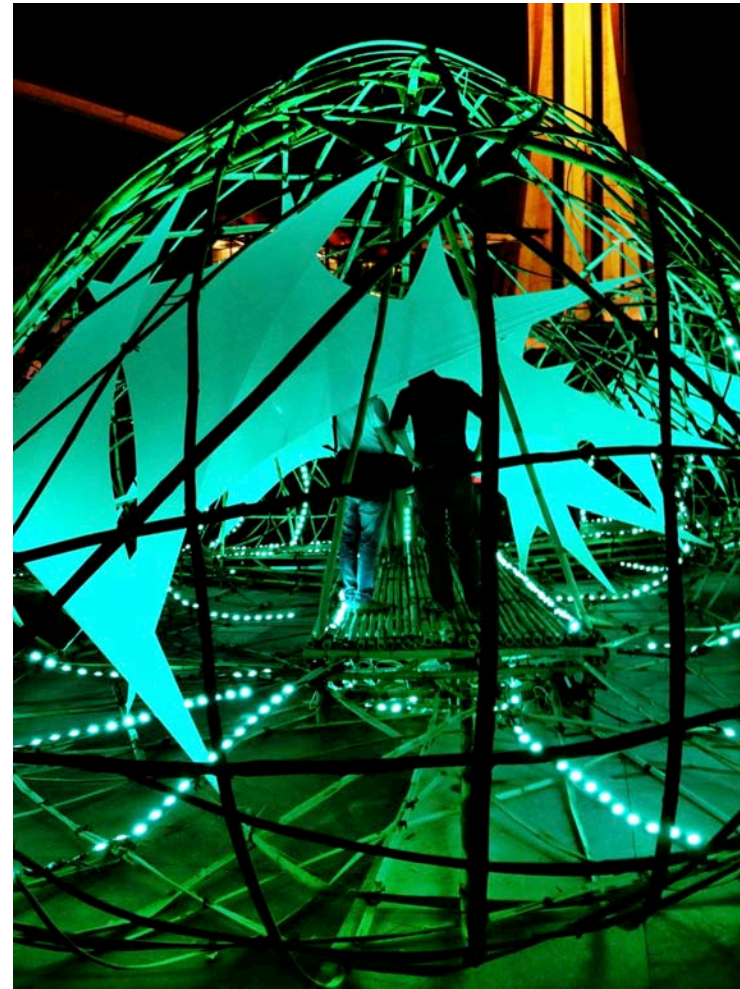
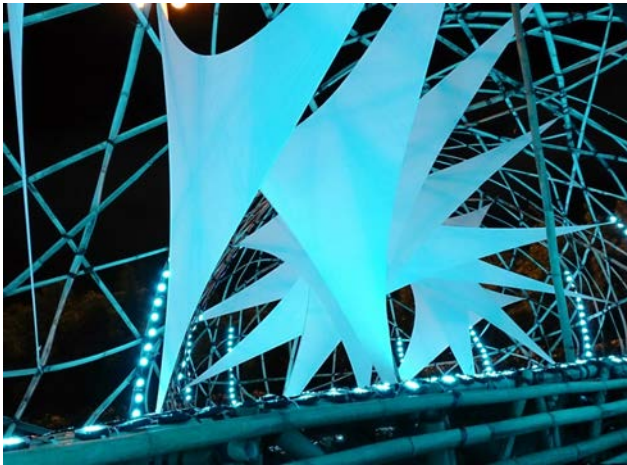
University of Saint Joseph, Macau SAR



University of Saint Joseph, Macau SAR



University of Saint Joseph, Macau SAR



University of Saint Joseph, Macau SAR

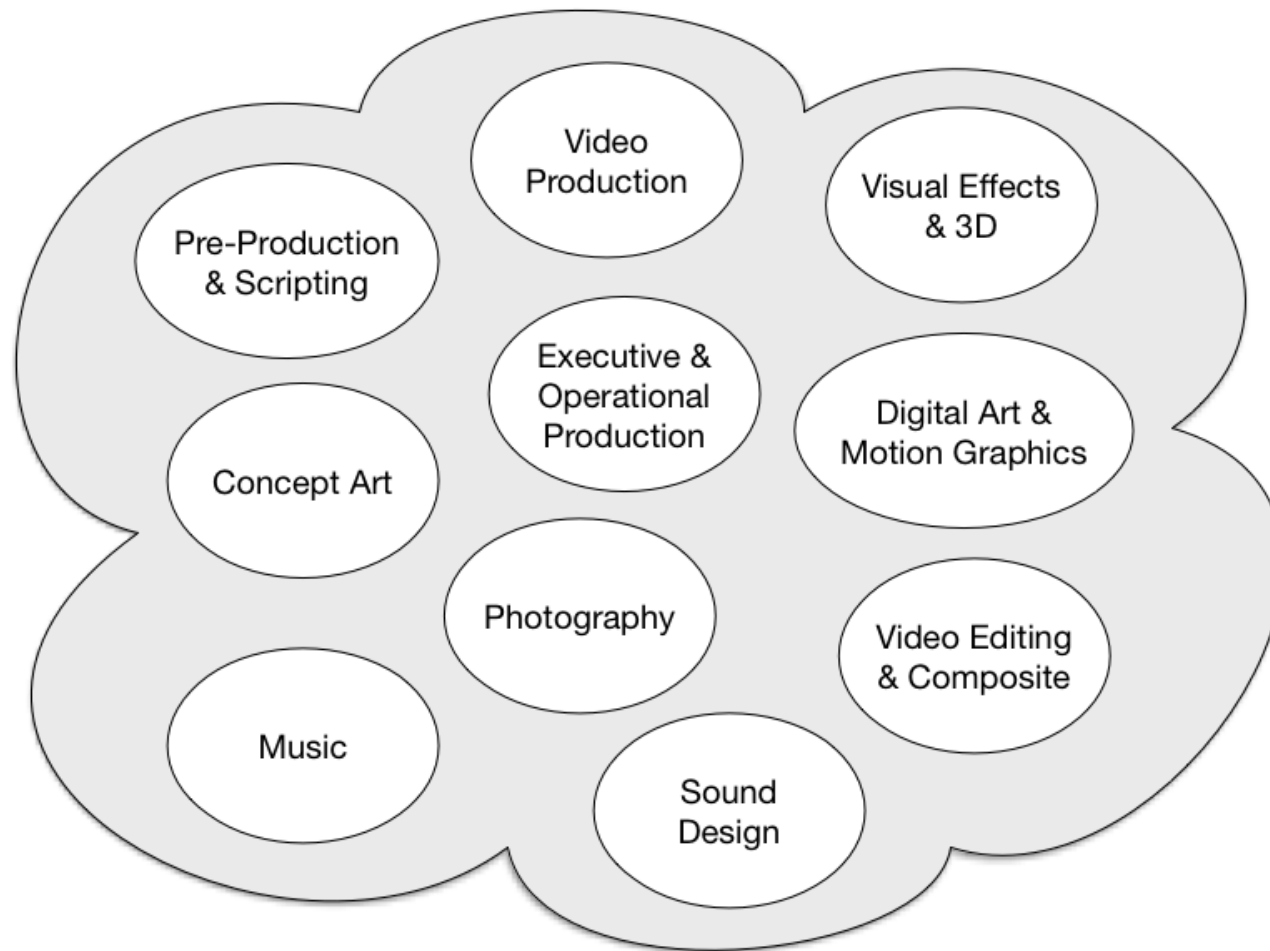


University of Saint Joseph, Macau SAR



Multidisciplinary

Audiovisual Production



University of Saint Joseph, Macau SAR



University of Saint Joseph, Macau SAR





Art and Technology

Research & Development



FASHION DESIGN

Fashion Design



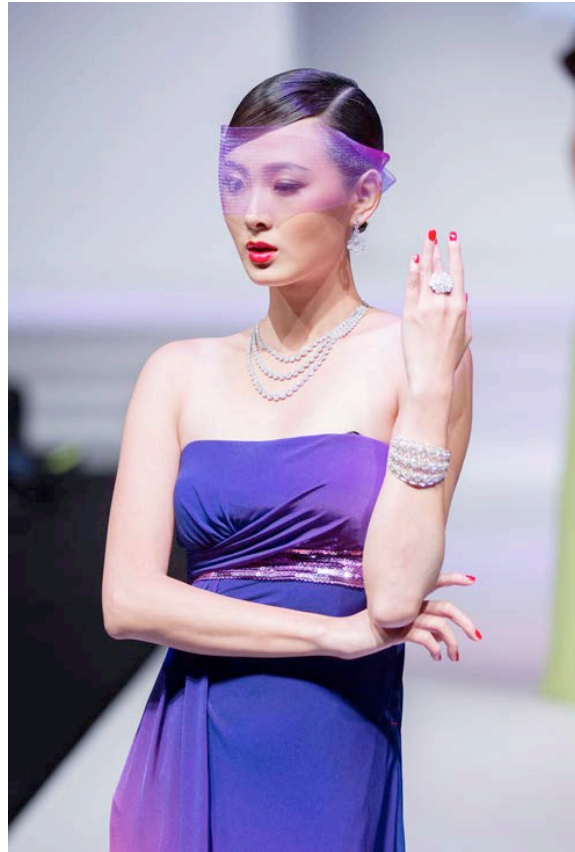
Collaborating with Lines Lab

Fashion Design



Collaborating with Anna Noir

Fashion Design



Collaborating with Macau Fashion Show & CPTTM



DIGITAL CINEMA

DRONE CINEMATOGRAPHY

Digital Cinema



Collaborating with Macanese Film Director Sérgio Perez

Digital Cinema

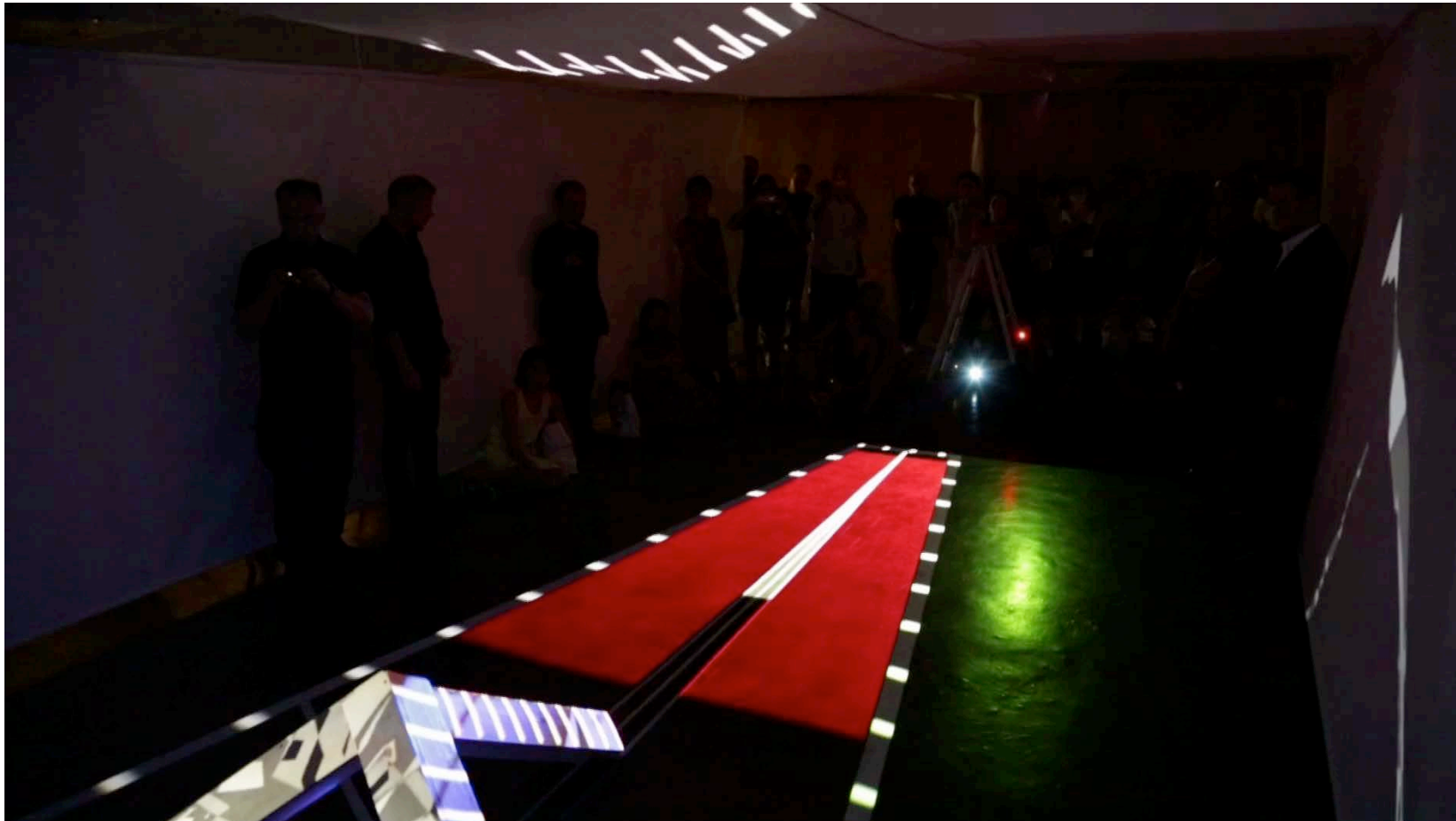




DIGITAL CINEMA

INTERIOR VIDEO-MAPPING

Digital Cinema



Interior Video Mapping



DIGITAL CINEMA

LIGHT FIELD PHOTOGRAPHY

Digital Cinema

Light Field Photography



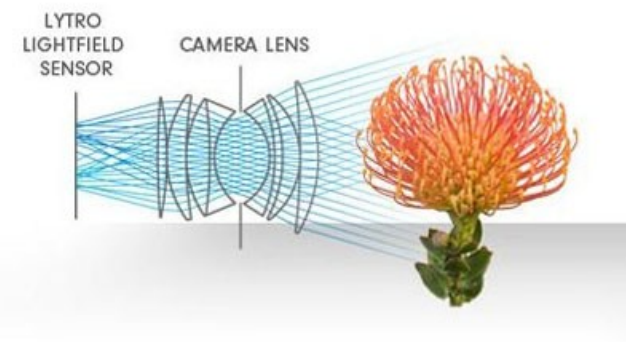
The Light Field

Defining the Light Field

The light field is a core concept in imaging science, representing fundamentally more powerful data than in regular photographs. The light field fully defines how a scene appears. It is the amount of light traveling in every direction through every point in space. Conventional cameras cannot record the light field.

Capturing the Light Field

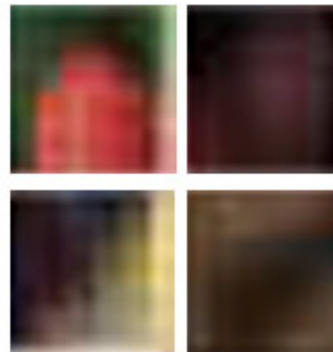
Recording light fields requires an innovative, entirely new kind of sensor called a light field sensor. The light field sensor captures the color, intensity and vector direction of the rays of light. This directional information is completely lost with traditional camera sensors, which simply add up all the light rays and record them as a single amount of light.



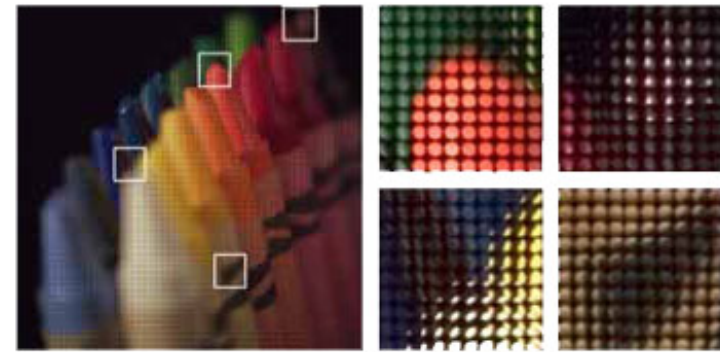
Digital Cinema



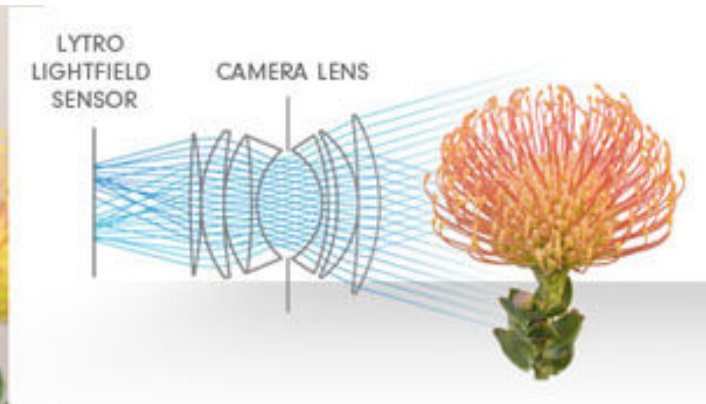
Conventional Camera Sensor



Light Field Camera Sensor



LYTRO



Digital Cinema



Digital Cinema



Digital Cinema



Digital Cinema



Digital Cinema





3D FABRICATION

3D Print a 3D Printer



Minchee Lab @ USJ

3D Print a 3D Printer

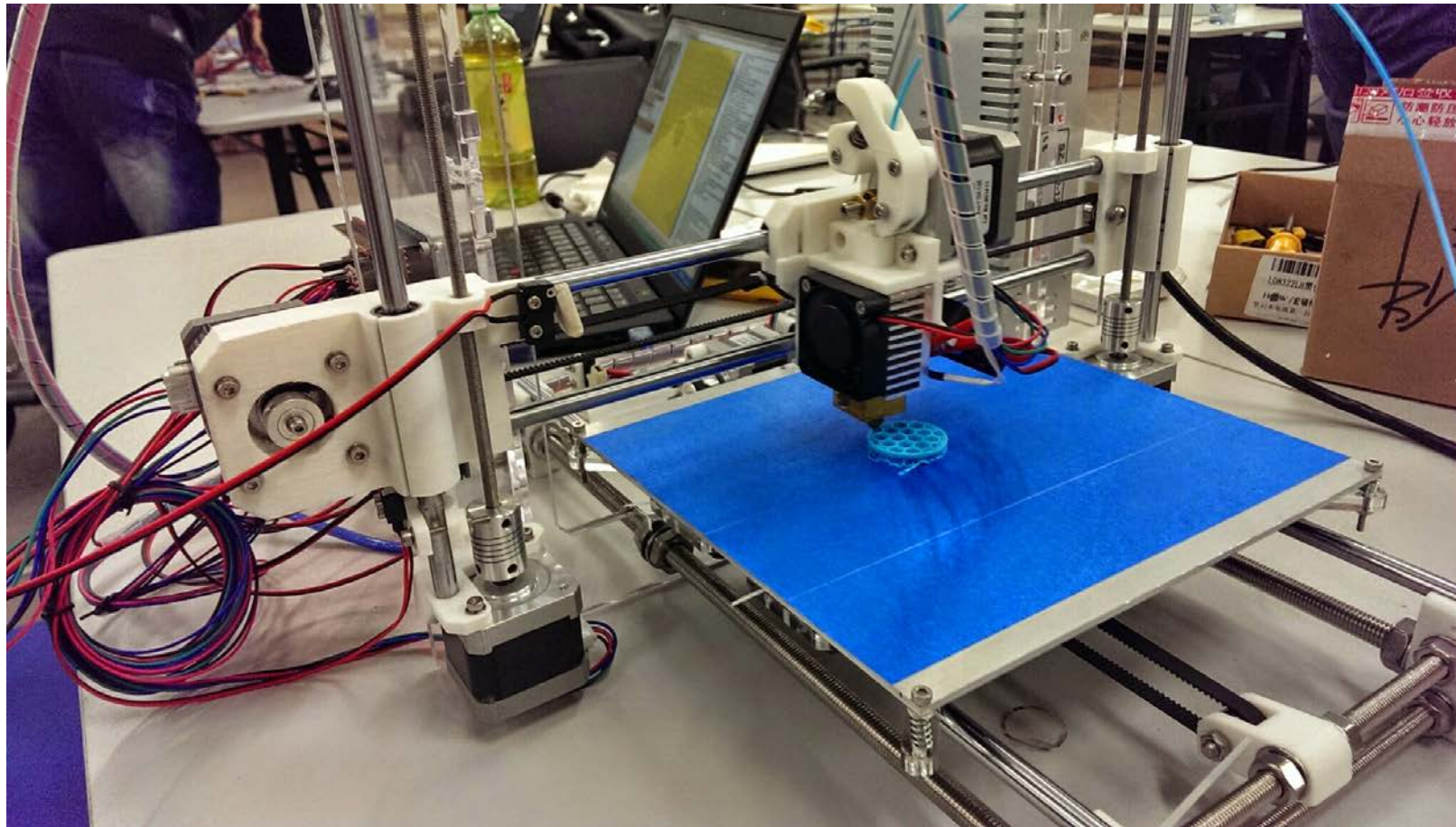


Print your Won 3D Printer Workshop

3D Print a 3D Printer



3D Print a 3D Printer

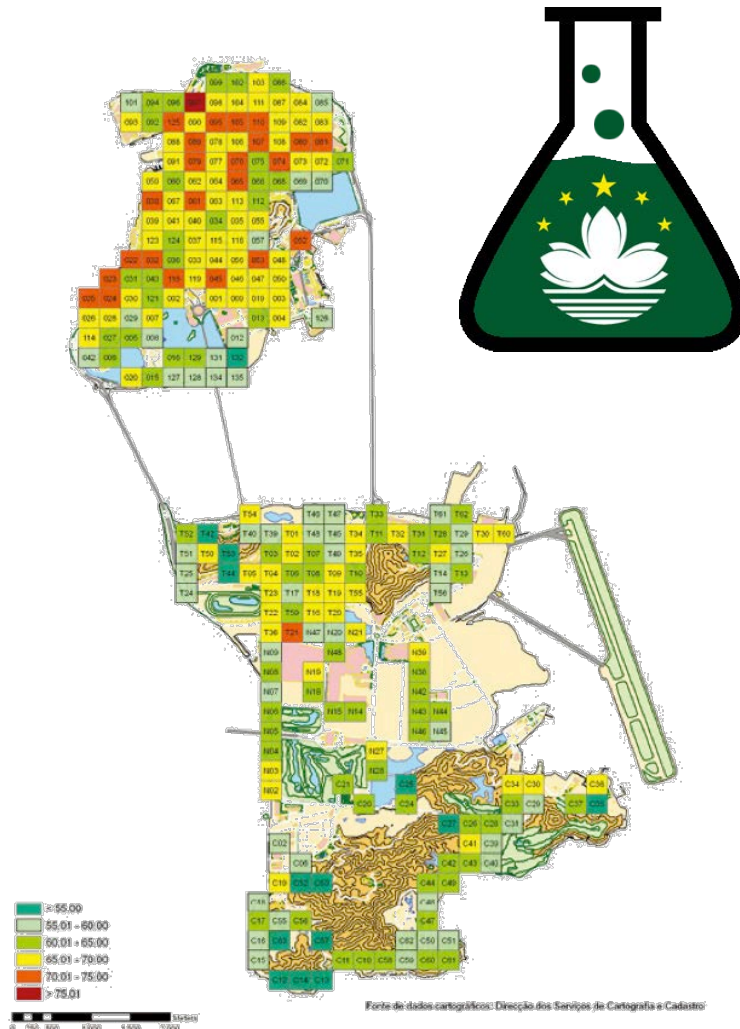




SOUNDSCAPES

URBAN SOUND IN MACAO

Urban Soundscapes



Urban Soundscapes



Coastline
(river delta)



Dense Forest
(island and continental)

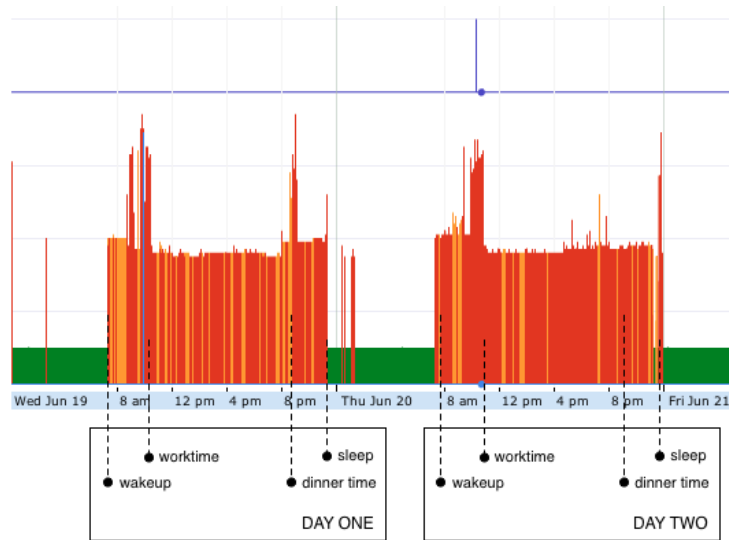


River / Bridges
(urban downtown)

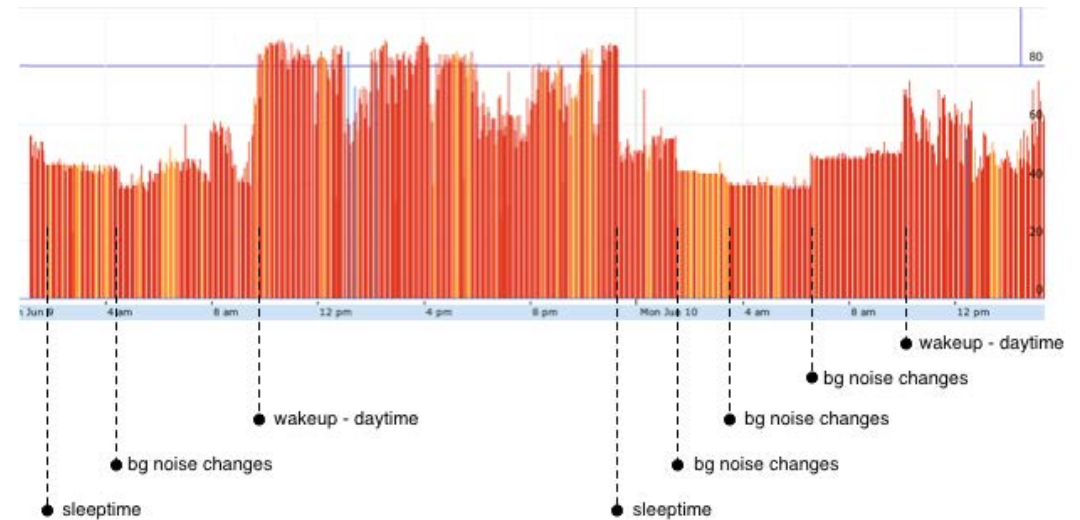


Mixed Residential
(skyscrapers vs old houses)

Urban Soundscapes



Porto-Portugal



Macau

Urban Soundscapes

| | 2010 | | 2011 | | Percent increase/decrease |
|---|-------|---------|------|---------|---------------------------|
| Residence / Disturbance from neighbors (case) | 954 | (16.9%) | 886 | (16.4%) | -7.1% |
| Conversation and shouting (case) | 786 | (13.9%) | 870 | (16.1%) | +10.7% |
| Construction work (case) | 891 | (15.7%) | 797 | (14.8%) | -10.5% |
| Commercial establishments (case) | 446 | (7.9%) | 586 | (10.9%) | +31.4% |
| Music and karaoke (case) | 407 | (7.2%) | 568 | (10.5%) | +39.6% |
| Mahjong (case) | 316 | (5.6%) | 252 | (4.7%) | -20.3% |
| Animals (case) | 257 | (4.5%) | 185 | (3.4%) | -28.0% |
| Air conditioner and ventilation system (case) | 250 | (4.4%) | 162 | (3.0%) | -35.2% |
| Eating houses (case) | 134 | (2.4%) | 135 | (2.5%) | +0.7% |
| Factories (case) | 72 | (1.3%) | 70 | (1.3%) | -2.8% |
| Traffic (case) | 52 | (0.9%) | 66 | (1.2%) | +26.9% |
| Outdoor shows and games (case) | 54 | (1.0%) | 46 | (0.9%) | -14.8% |
| Interior decoration work (case) | 20 | (0.4%) | 30 | (0.6%) | +50.0% |
| Water pumps of building (case) | 11 | (0.2%) | 18 | (0.3%) | +63.6% |
| Others (case) | 1,011 | (17.9%) | 718 | (13.3%) | -29.0% |

Urban Soundscapes





SOUNDSCAPES

SOUND MAPPING MACAO

Sound-Mapping Macao



FRESOUND SOUND MAPS

<http://www.freesound.org/browse/geotags/>

Sound-Mapping Macao

Shenzhen Biennale The Value Factory and the Urban Border 2013 – 5th Edition



MACAU MORPHOLOGIES PAVILION

Sound-Mapping Macao



Sound-Mapping Macao



Sound-Mapping Macao





SOUNDSCAPES

SOUND SOCIAL NETWORKS

Soundscapes & Social Networks

Soundscape

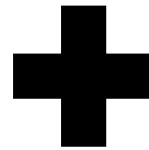
*sound of a **place***

Citizen

inhabitant of a particular town or city

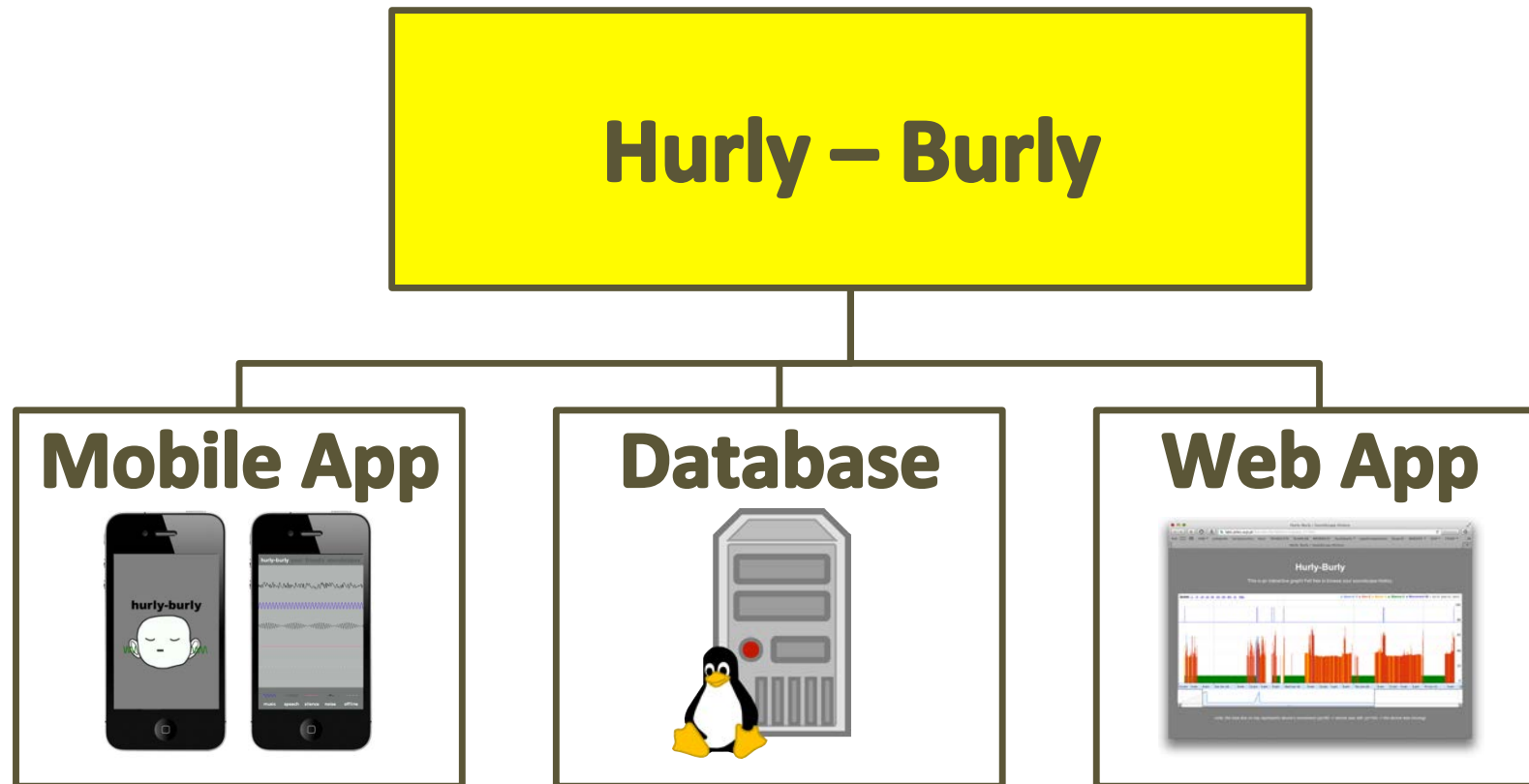


Soundscapes & Social Networks



Can soundscapes enhance social networking?

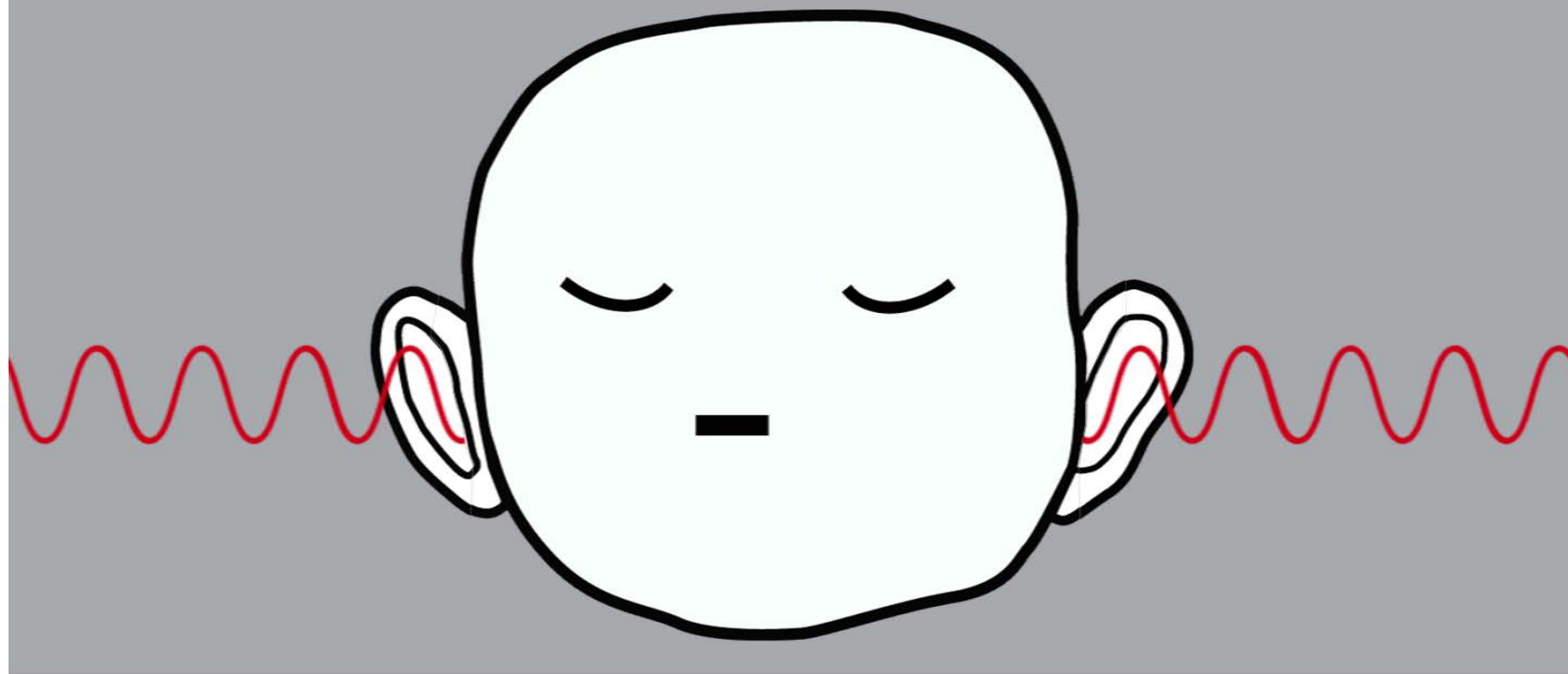
Soundscapes & Social Networks



Soundscapes & Social Networks



hurly-burly





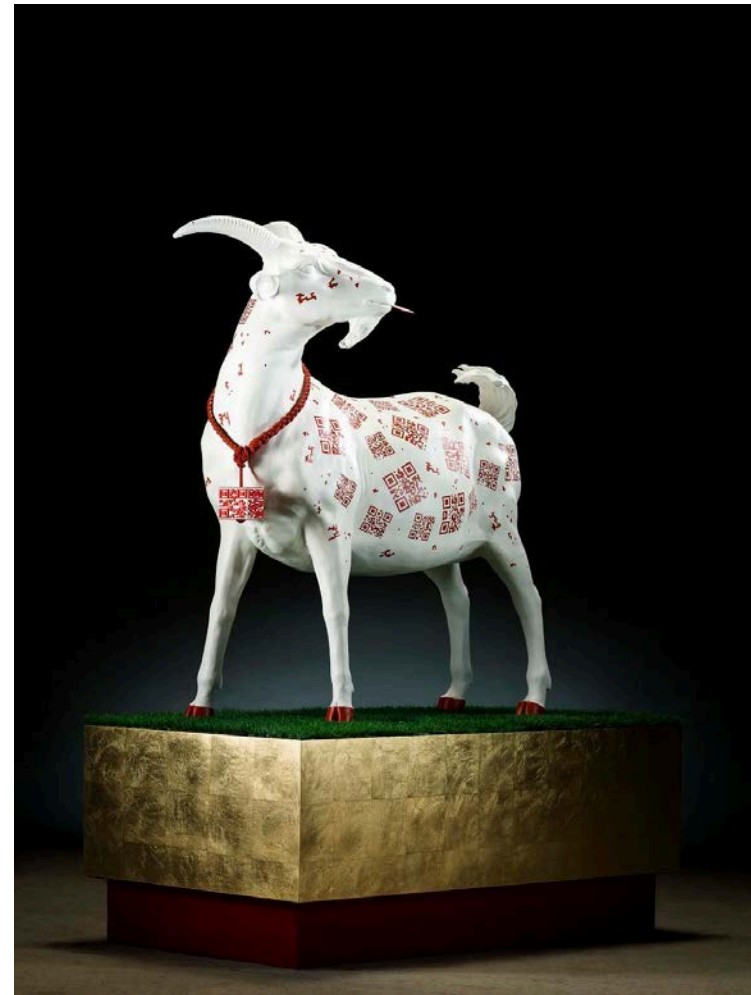
INTERACTION

PUBLIC SPACE INSTALLATIONS

QR-Goat



QR-Goat



QR-Goat



QR-Goat

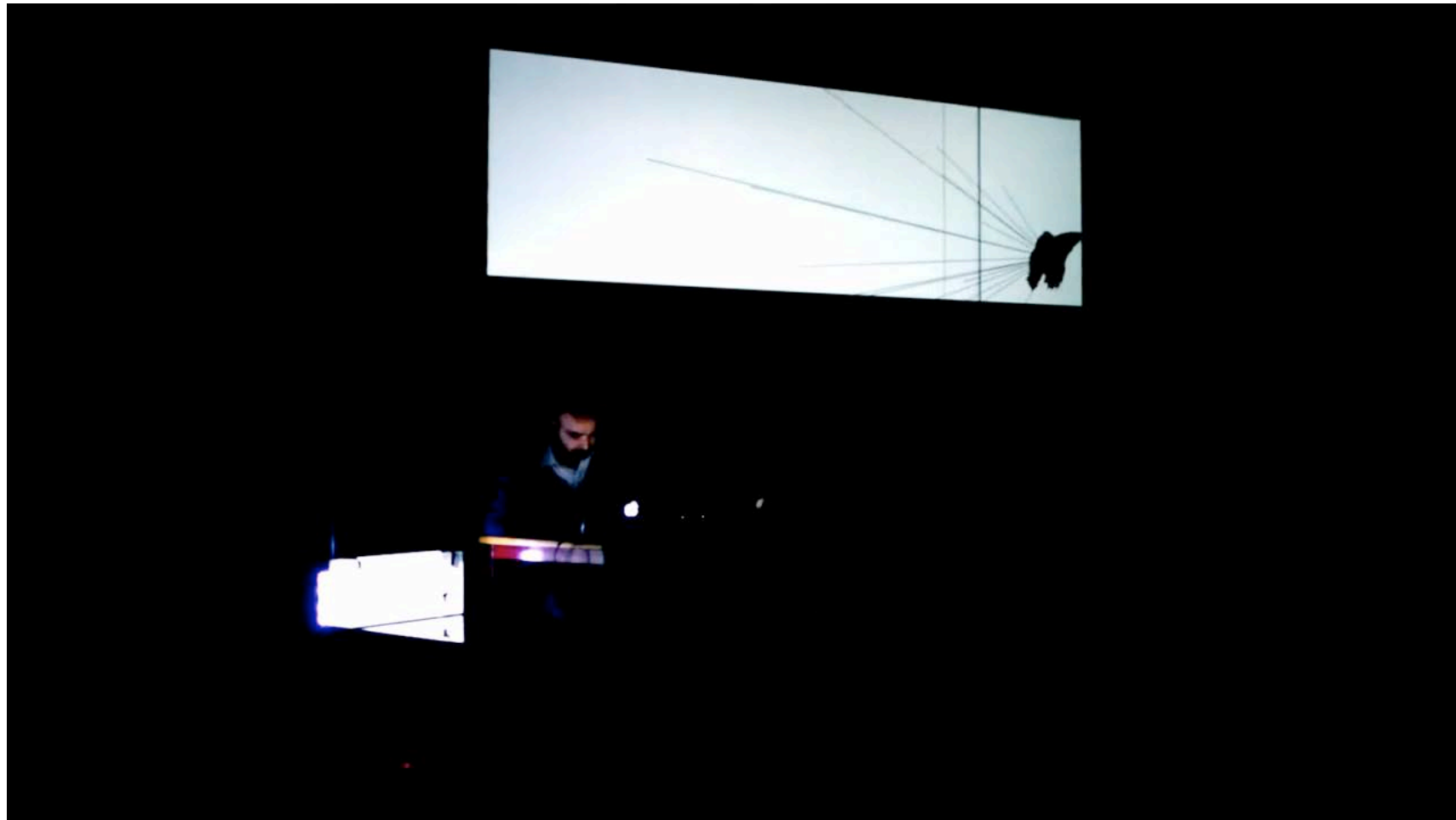




INTERACTION

INTERACTING WITH ANIMALS

Interacting with Animals





INTERACTION

NETWORKED MUSIC

Interacting on the Internet

Synchronizing Berlin and Hong Kong (1/April/2011 – 8.753 Km)

Hong Kong New Music Ensemble & Ensemble Adapter



<http://hknme.org/hongkongartsblog/?p=1525>

Interacting on the Internet

Performing Music at a Distance



Interacting on the Internet

Multiple Location – Same Performance

ARTECH 2008: Rambouillet (FR) / Casa da Música (PT) / SARC (IR)



<http://artes.ucp.pt/artech2008/>

Interacting on the Internet

Living with LAG by ume.net (2014)



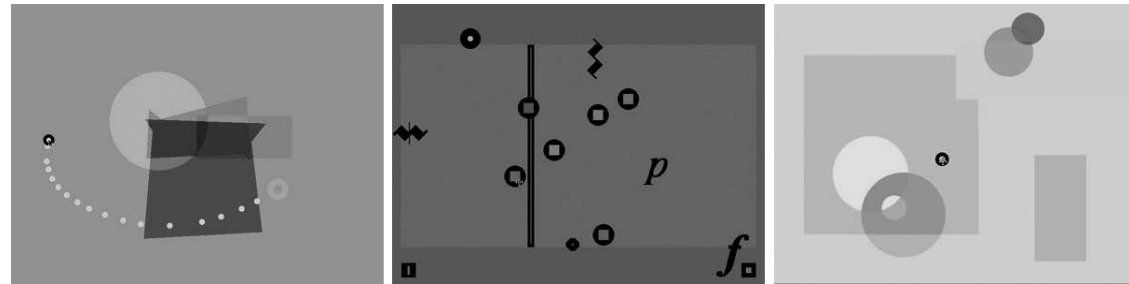


Latency and Networked Music

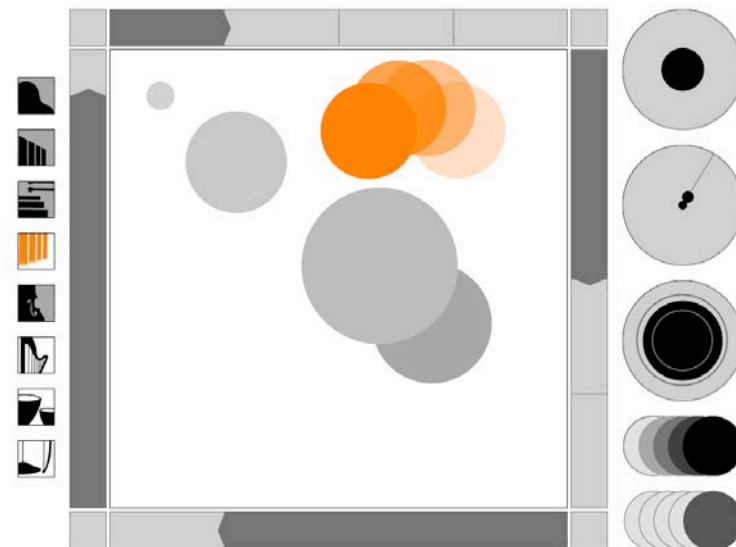
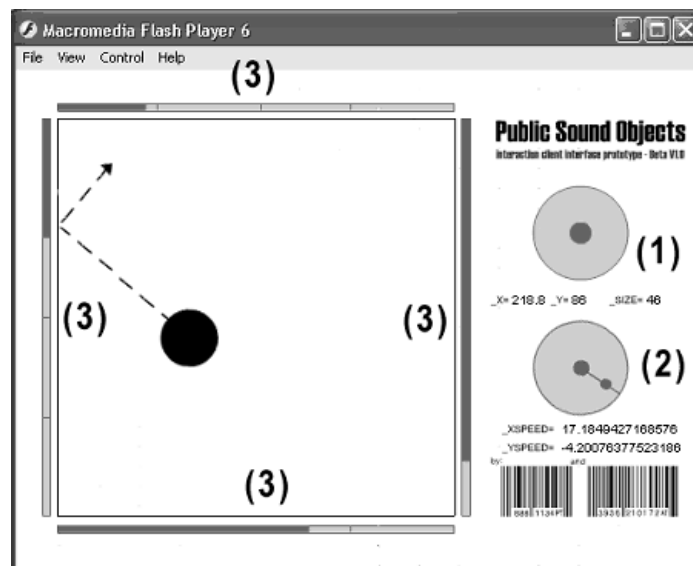
Basic Principles - **Shared Sonic Environments**

- (1) Digital Control Interface (software or tangible)**
- (2) Local Synthesis & Transmission of Control Data**
- (3) Peer-To-Peer Communication**
- (4) Latency Adaptive Dynamics**
- (5) Behavior Driven Interaction (Loose Coupling)**

Interacting on the Internet



Small Fish (Fujihata e Furukawa 1999)



Public Sound Objects (Barbosa 2006)



Interacting on the Internet

Local Network of PSOs, CITAR (Porto 2008)

commissioned by “*Casa da Musica*”

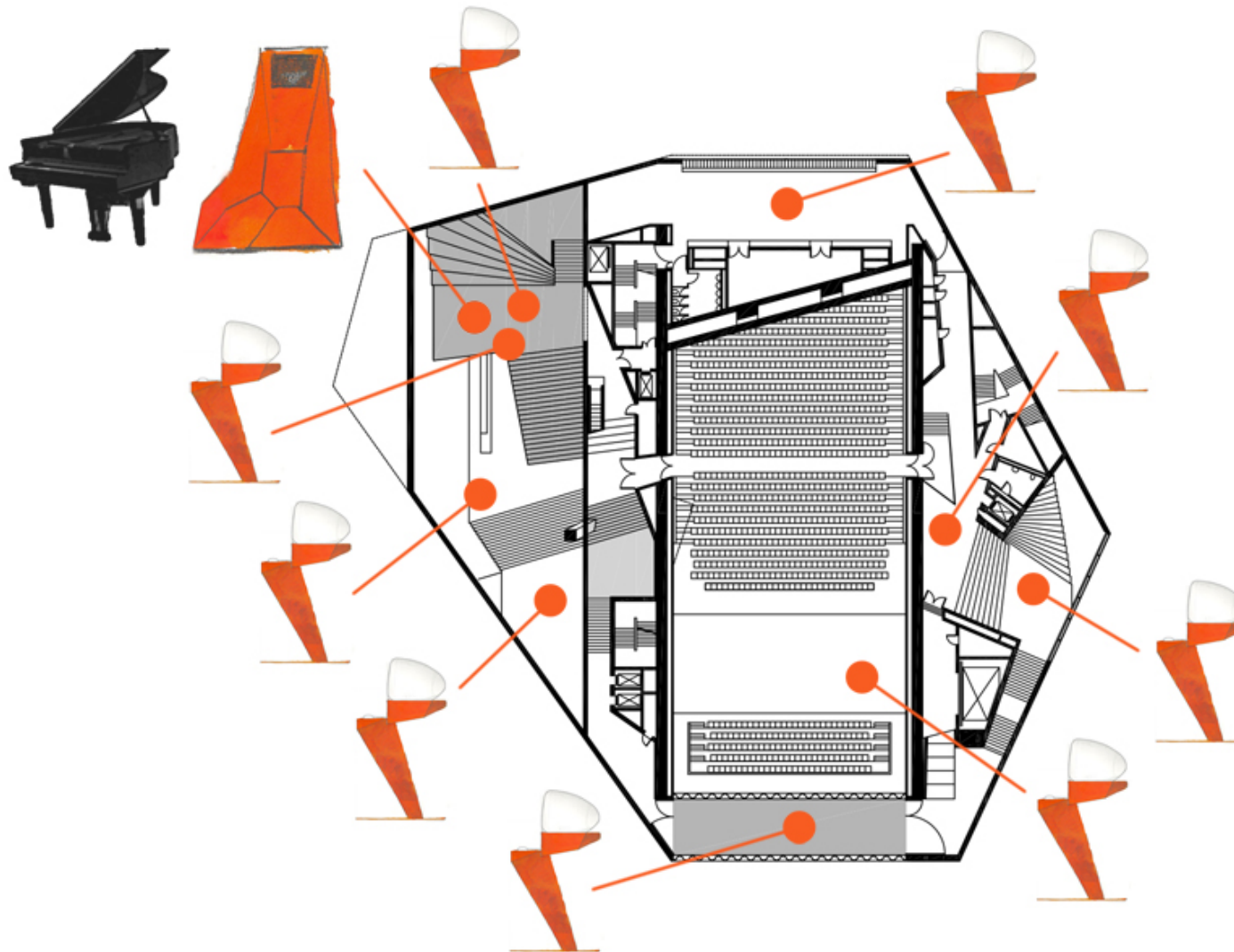
http://en.wikipedia.org/wiki/Casa_da_musica



Interacting on the Internet



Interacting on the Internet





INTERACTION

INTERACTING WITH BEHAVIOURS

Interacting with Behaviors



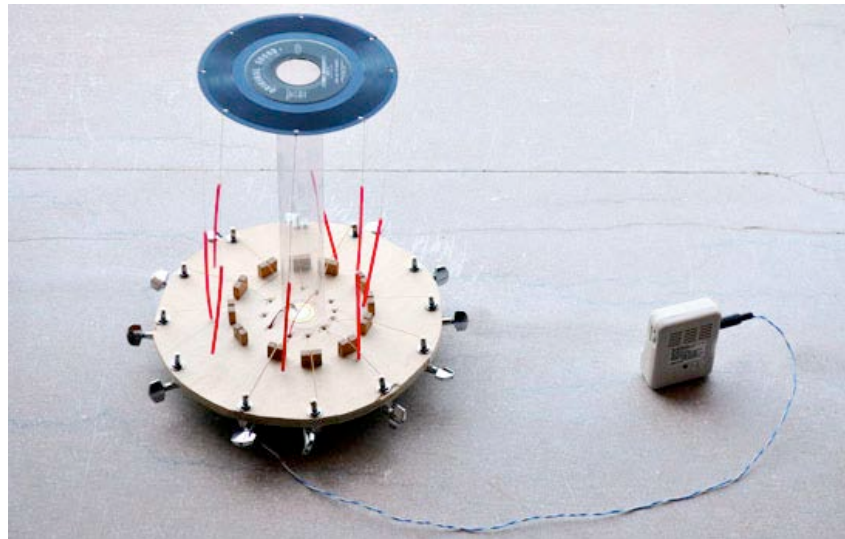
Interacting with Behaviors

Radial String Chimes

(1st prototype Developed at CCRMA – Stanford University)

Interactive musical device triggered by motion applied to a spinning vinyl record.

Users can spin the record, making hanging coffee straws to bounce and pluck twelve radial guitar strings, applied to a round wood board.



Interacting with Behaviors



DESIGN PATENT (*inpi 20111000031522*)

inpi Instituto Nacional
da propriedade industrial

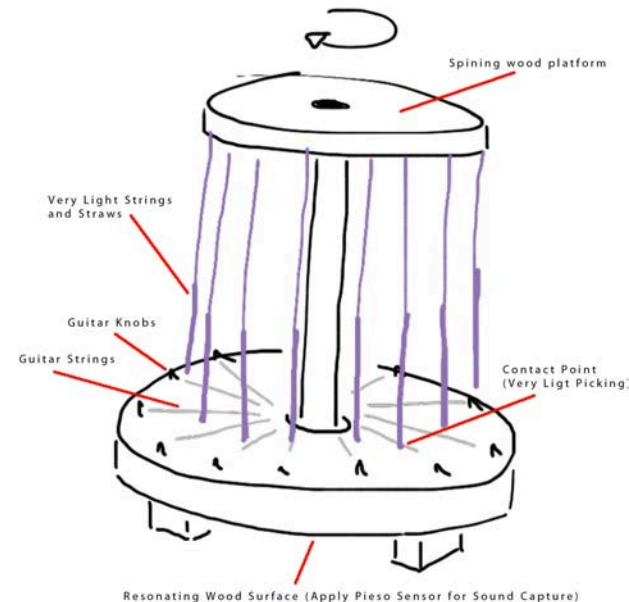
Campo das Cebolas - 1149-035 Lisboa - Portugal
Tel: +351 218818100 / Linha Azul: 808 200689 / Fax: +351 218875308 / Fax: +351 218900096 / E-mail: atm@inpi.pt / www.inpi.pt

| Nº | CÓDIGO | DATA E HORA DE RECEPÇÃO | MODALIDADE | PROCESSO RELACIONADO |
|----------------|--------|-------------------------|------------|----------------------|
| 20111000031522 | 5499 | 2011/04/26-05:20:59 | DOM | |

PEDIDO DE REGISTO DE DESENHO OU MODELO

| | |
|---|---------------------------------|
| 1 REQUERENTE | |
| Código | Nacionalidade PORTUGUESA |
| Nome ÁLVARO MANUEL MENDES BARBOSA | |
| Endereço TRAVESSA DA JUNQUEIRA 146, FRANCELOS | |
| Localidade VILA NOVA DE GAIA | Código Postal 4405-630 |
| Telefone 227625513 | Telemóvel 919566369 |
| E-mail ABARBOSA@PORTO.UCP.PT | |
| Actividade (CAE) | |
| NIF 196600464 | |
| 2 MODALIDADE / TIPO DE PEDIDO | |
| Modalidade: DESENHO/MODELO NACIONAL | |
| Nº de Objectos: 1 | |
| 3 EPIGRAFE OU TÍTULO | |
| RADIAL STRING CHIMES (ESPANTA ESPÍRITOS DE CORDAS RADIAIS) | |
| 4 RESUMO | |
| <p>ESTE DISPOSITIVO CONSISTE NUMA INSTRUMENTO MUSICAL COM UMA SUPERFÍCIE CIRCULAR DE MADEIRA RESSONANTE ONDE SÃO APLICADAS CORDAS DE GUITARRA NUMA DISPOSIÇÃO CONCÊNTRICA E COM TENSÃO AJUSTÁVEL POR AFINADORES DE GUITARRA. SOBRE O CENTRO DA SUPERFICIAL É APLICADO UM TUBO QUE SUPORTA UM DISCO DE MADEIRA ROTATIVO. DESTE DISCO ESTÃO SUSPENSAS FINAS LINHAS COM PALHAS DE PLÁSTICO NA PONTA, PERMITINDO O CONTACTO COM AS CORDAS NA BASE DO DISPOSITIVO, DURANTE O MOVIMENTO DE ROTAÇÃO DO DISCO. DESTA FORMA CRIA-SE UMA TEXTURA MUSICAL, QUE VARIA NO TEMPO COM A VELOCIDADE DE ROTAÇÃO DO DISCO SUPERIOR E NA TONALIDADE COM A AFINAÇÃO DAS CORDAS NA SUPERFÍCIE DE BASE.</p> | |

RADIAL STRING CHIMES



DESIGN BY: Álvaro Barbosa (2011)

Interacting with Behaviors

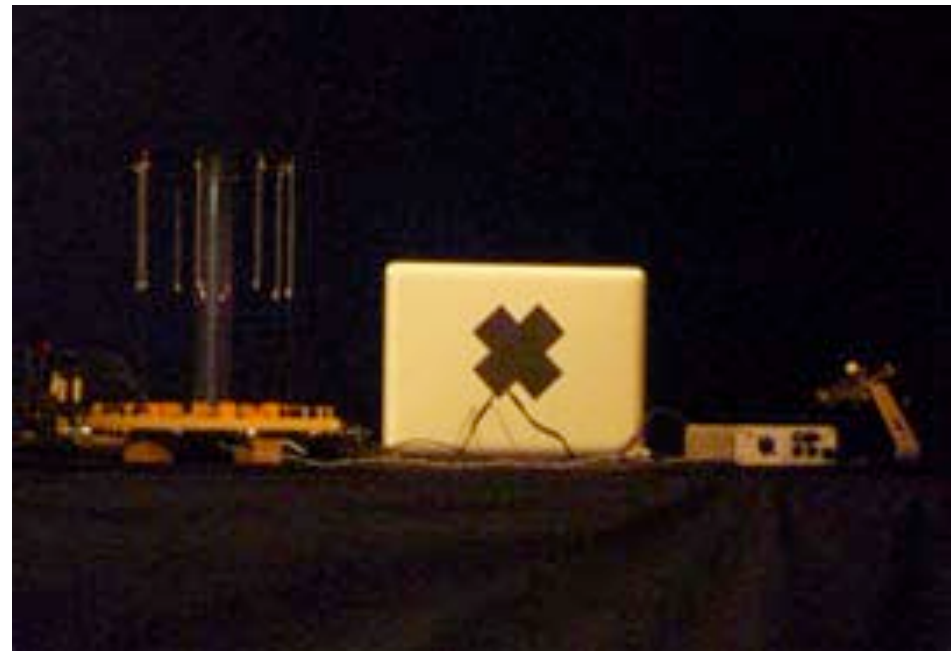


Interacting with Behaviors



Used in Live Performances:

Live Set at Galerija Kapelica in Ljubljana, Slovenia During The EARZOM Festival 2010



Interacting with Behaviors

Live Set: Radio String Chimes; Wind Blowers; E-Bows; Ipad and Iphones running Realtime DSP (CS-Grain, Loopy, Reactable, Curtis,...)



Interacting with Behaviors





THANK YOU
abarbosa@usj.edu

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