

元智大學管理學院「商管產學橋接研究論壇」

「產學橋接」——我們為何尚未成功？

徐業良

元智大學主任秘書 機械系教授

元智大學老人福祉科技研究中心主任

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Gerontechnology 老人福祉科技

“We are in the midst of two striking trends: Widespread population aging and rapid diffusion of technology. Both phenomena are very new in human history.”

“Now we have added so many years to a life. How do we add more life to those years?”

- ✓ Organized from 2001, the Gerontechnology Research Center (GRC) in Yuan Ze University was officially established in January 2003.

Mission of GRC

GRC designs technologies and products to provide **practical solutions** to the various problems of the aging society.

“How can technology be best used to support the needs of aging society?”



Industry Collaboration

- ✓ Major industrial partners:

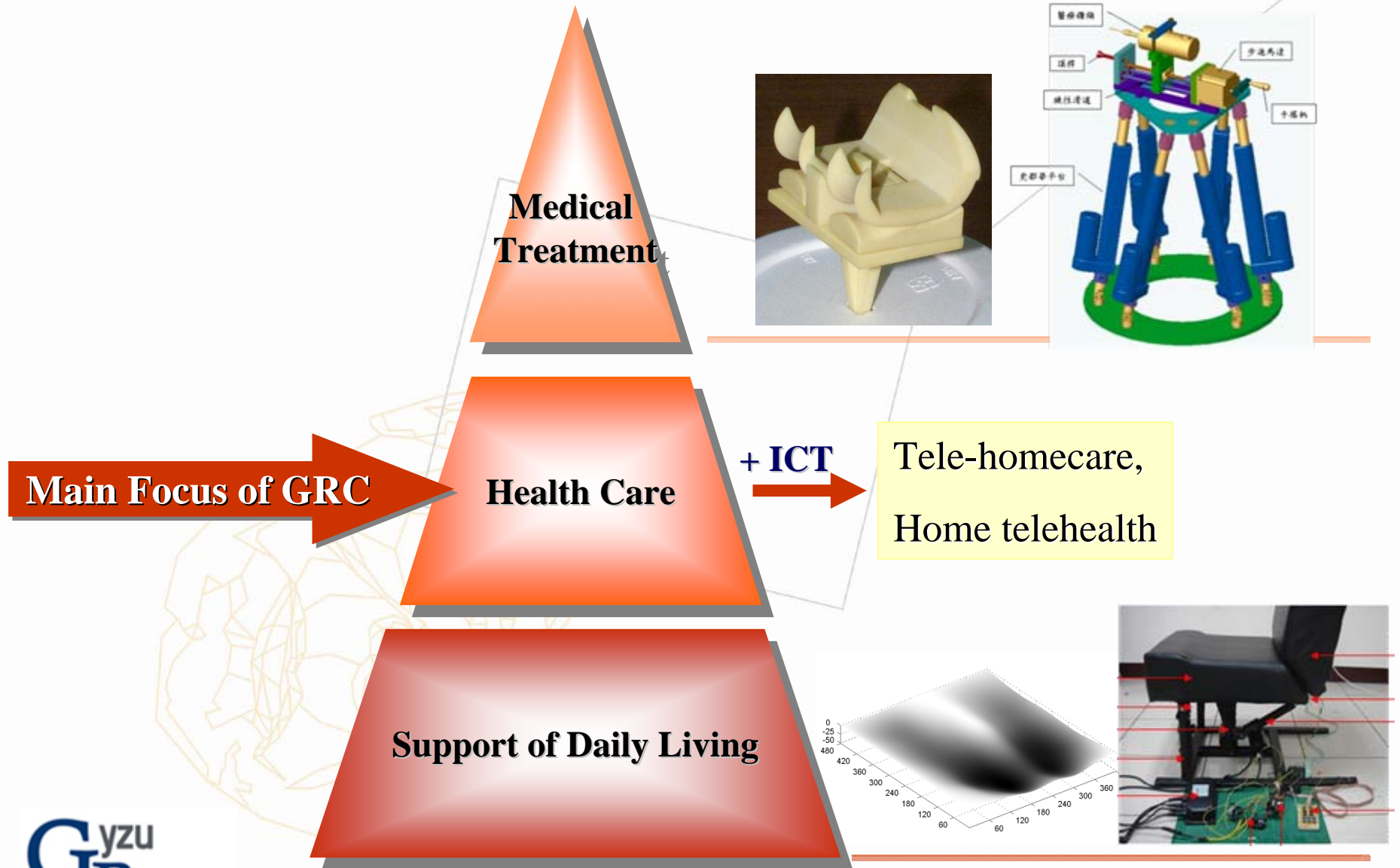


- ✓ GRC collaborated with **Ming-Sheng Healthcare** on the “**UCare Project**” sponsored by Ministry of Economic Affairs, Taiwan (2007~2008, 1 million USD, 2009~2010, 320,000 USD), which lead to a joint start-up company for home telehealth services.



Ming-Sheng Hospital

Main Focus of GRC



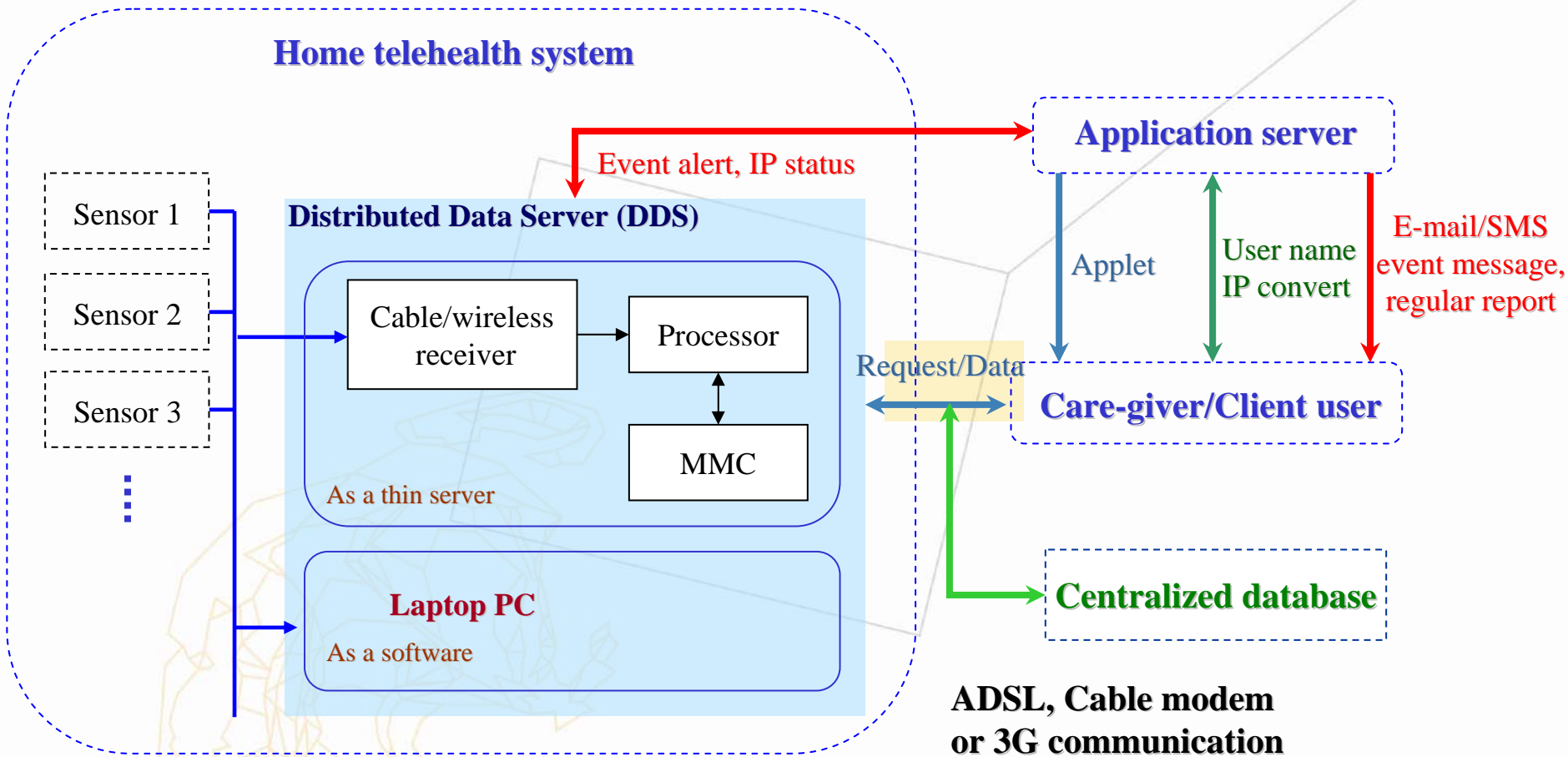
Although the usefulness of the home telehealth system has been recognized in many studies, and all technologies required are readily available, expectations for its widespread adoption have not been realized.

There is not a commercially successful home telehealth system in Taiwan.

Competition in home telehealth system: Finding the best business model!

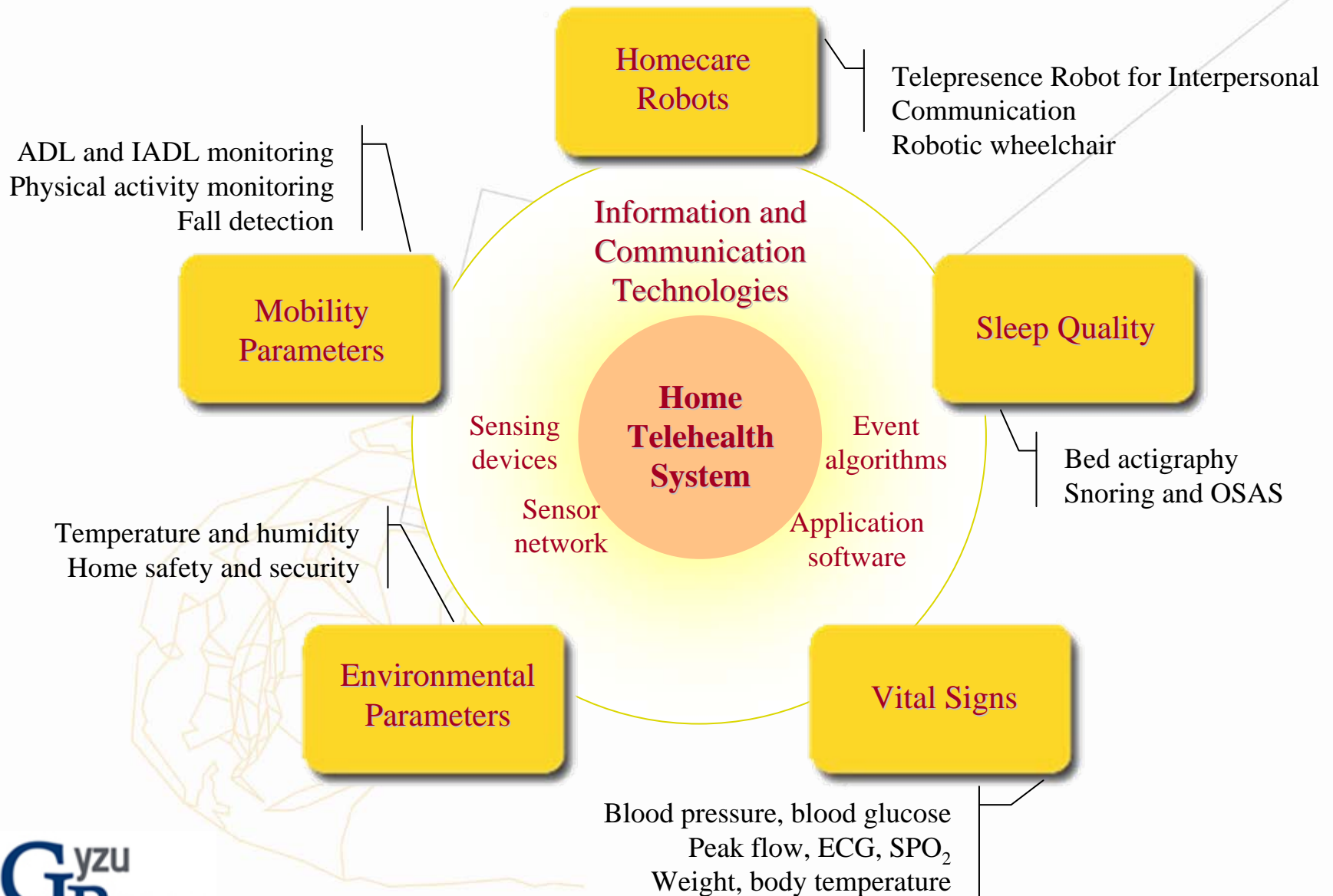
→ What is the smallest possible home telehealth system?

The Decentralized Home Telehealth System



Hsu, Y. L., Yang, C. C., Tsai, T. C., Cheng, C. M., Wu, C. H., "Development of a decentralized home telehealth monitoring system", *Telemedicine and e-Health*, Vol. 13, No.1, pp. 69-78, February, 2007.

Development Road Map



Patent Portfolio for Decentralized Home Telehealth System

Homecare Robots

- 1.遠距工作車(I262873)
- 2.遠端臨場機器人
- 3.行動式遠端監控系統及其方法(I318064)

Sleep Quality

- 4.鼾聲感測裝置(M268002)
- 5.多重生理監測墊、多重生理監測系統及生理辨識流程方法(I299260)
- 6.睡眠品質監測系統及生理訊號監測流程方法
 - ① A Sleeping Quality Monitor System And A Method For Monitoring A Physiological Signal (US)
 - ② Algorithm for telemonitoring of activity during sleep (US)

Vital Sign

- 7.可攜式遠距居家生理訊號監測系統(I287976)
- 8.可攜式遠距居家生理訊號監測系統(I286714)

Environment Parameters

- 9.可攜式環境監測系統及其方法(I308642)

Mobility Parameters

- 10.以RFID為基礎之可攜式遠距居家照護監測系統及其操作方法(I290699)
- 11.可攜式行為監測系統及其方法(I296786)
- 12.遠距居家行為模式監測系統及其監測方法

Distributed Data Server

- 13.分散式資料伺服器及其運作方法(I309785)
 - ② A Distributed Data Server And An Operating Method Thereof (US)
- 14.單晶片監控伺服器(I234962)

Distributed Home Telehealth System

- 15.可攜式遠距居家監測系統及方法
 - ③ A Portable Tele-homecare Monitoring System And Method For The Same (US)

Patents received: 11, Patents in reviewed: Taiwan 5, US 4

2008 Taipei International Invention Show and Technomart–Gold/Bronze Medal

老人福祉科技與遠距居家照護

滄海書局
2008年3月初版

✓ 老人福祉科技篇

- 第一章 老人福祉科技簡介
- 第二章 高齡者科技輔具之趨勢與設計思考
- 第三章 人因工程在老人福祉科技之應用
- 第四章 高齡者的交通問題
- 第五章 老人福祉科技未來發展：智慧住宅與服务型機器人

✓ 遠距居家照護技術篇

- 第六章 遠距居家照護技術專利檢索與分析
- 第七章 國內外遠距居家健康照護系統案例介紹
- 第八章 資通訊技術在遠距居家照護系統之應用
- 第九章 居家生理訊號量測設備感測技術簡介
- 第十章 日常生活活動與身體活動監測技術
- 第十一章 適用於居家環境之睡眠監測技術的發展
- 第十二章 分散式遠距居家照護系統



Strategies of GRC

- ✓ 建立學習、合作、負責、專業的**組織文化**，吸引成員加入與成長
- ✓ 結合大學之課程與招生，有系統地進行**人才養成與銜接**
- ✓ 由系統設計與整合角度出發，強調**跨領域應用研究**並積極與**產業合作**
- ✓ 強調「**老人福祉科技**」主題，發展**差異化研究特色**
- ✓ 重視研究論文、專書的發表、**專利申請與佈局**、以及專業演講等活動，建立學術地位與產業界認同
- ✓ 利用**大學品牌**以及**研究中心**介於企業與大學之間的特殊角色，爭取研究資源及合作伙伴、客戶的信任
- ✓ 利用**知識管理網站**儲存、管理、傳播研究成果
- ✓ 建立**企業化之管理體系**，提供中心成員**永續經營的願景**

如果「成功」的定義是，有一項GRC開發的產品或服務，真正在市場上銷售...

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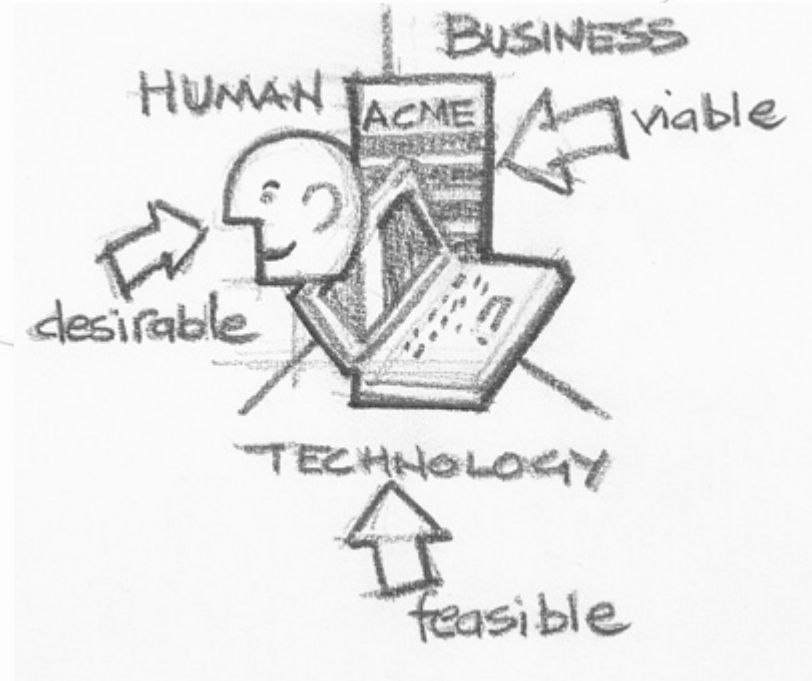
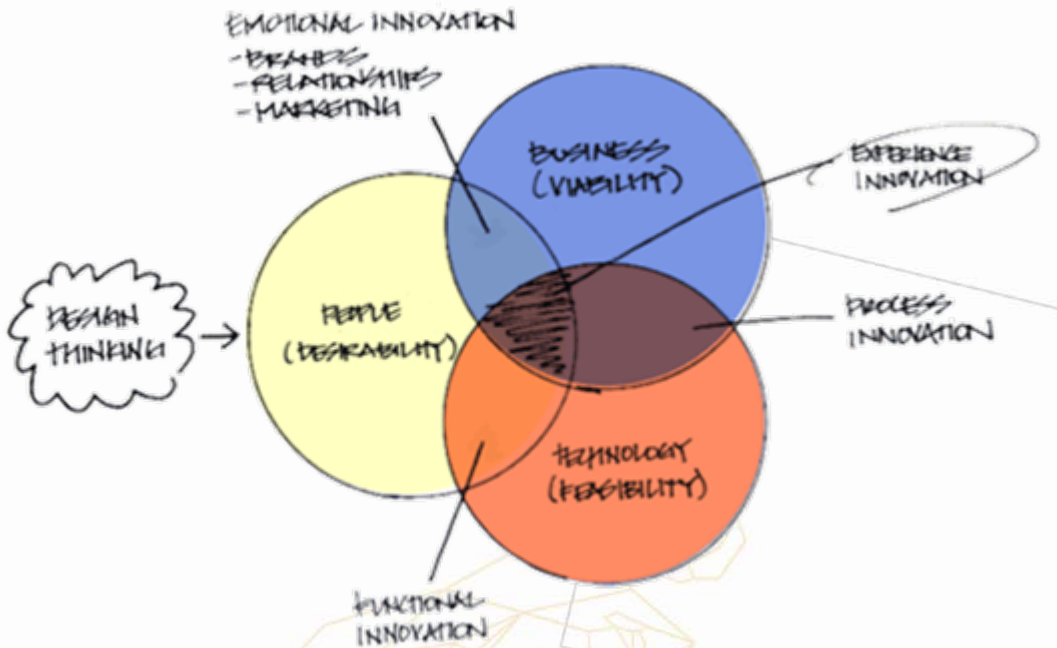
Our Excuses

- ✓ 大學教師有太多任務
- ✓ 大學研究中心無法和產業界競爭人才
- ✓ 大學和產業界有不同的優先度
- ✓ 大學教師沒有資金、人脈、經營技巧...
- ✓



- ✓ 我在史丹福大學的經驗， IDEO vs. Design Division → d.school
- ✓ 我們還不夠努力...
- ✓ 我們的研發就是不夠好...
- ✓ IDEO's "Design Thinking"...

IDEO's Design Thinking



- ✓ “Design thinking is an approach that uses the designer’s sensibility and methods for problem solving to meet people’s needs in a technologically feasible and commercially viable way. In other words, design thinking is human-centered innovation.” —Tim Brown



元智大學
Yuan Ze University



Thank You

Yeh-Liang Hsu
mehsu@saturn.yzu.edu.tw

<http://grc.yzu.edu.tw/>
<http://designer.mech.yzu.edu.tw/>