WIPO Inter-Regional Workshop on Patent Analytics
4-6 Dec 2013
Manila, PHILIPPINES

Use of Patent Analytics by Government Agencies & Public Institutions

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Director, IP Intermediary (IPI)
SINGAPORE

ipi-singapore.org

An Overview of Singapore

- **Physical:**
  - Land area: ~700 sq km
  - Limited natural resources
  - Geographical position
- **Population:**
  - 1960: 1.60 million
  - 2012: 5.28 million
- **Economy (GDP):**
  - 1960: US$1.5 billion
  - 2012: US$266 billion
- **Per Capital GDP**
  - 1960: US$428
  - 2012: US$60,000
- **Political Landmarks:**
  - Parliamentary democracy
  - 1965: Independence

- **A Vibrant Business Hub**
  - Over 7,000 Multi-National Corporations (MNC)
  - 1/3 of Fortune & Global 500 have HQ activities
  - 4,000 Business enterprises from China, India, Australia and New Zealand
  - Multi-racial and English-speaking workforce
  - Lowest risk business hub

Singapore Economy

Logistics

Construction

Infocomm

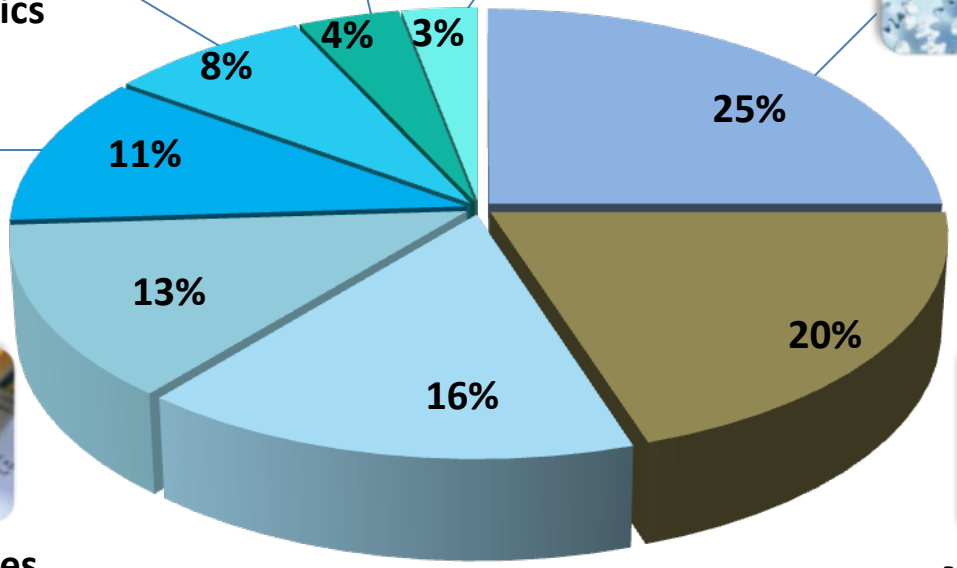
Others

Finance

Business Services

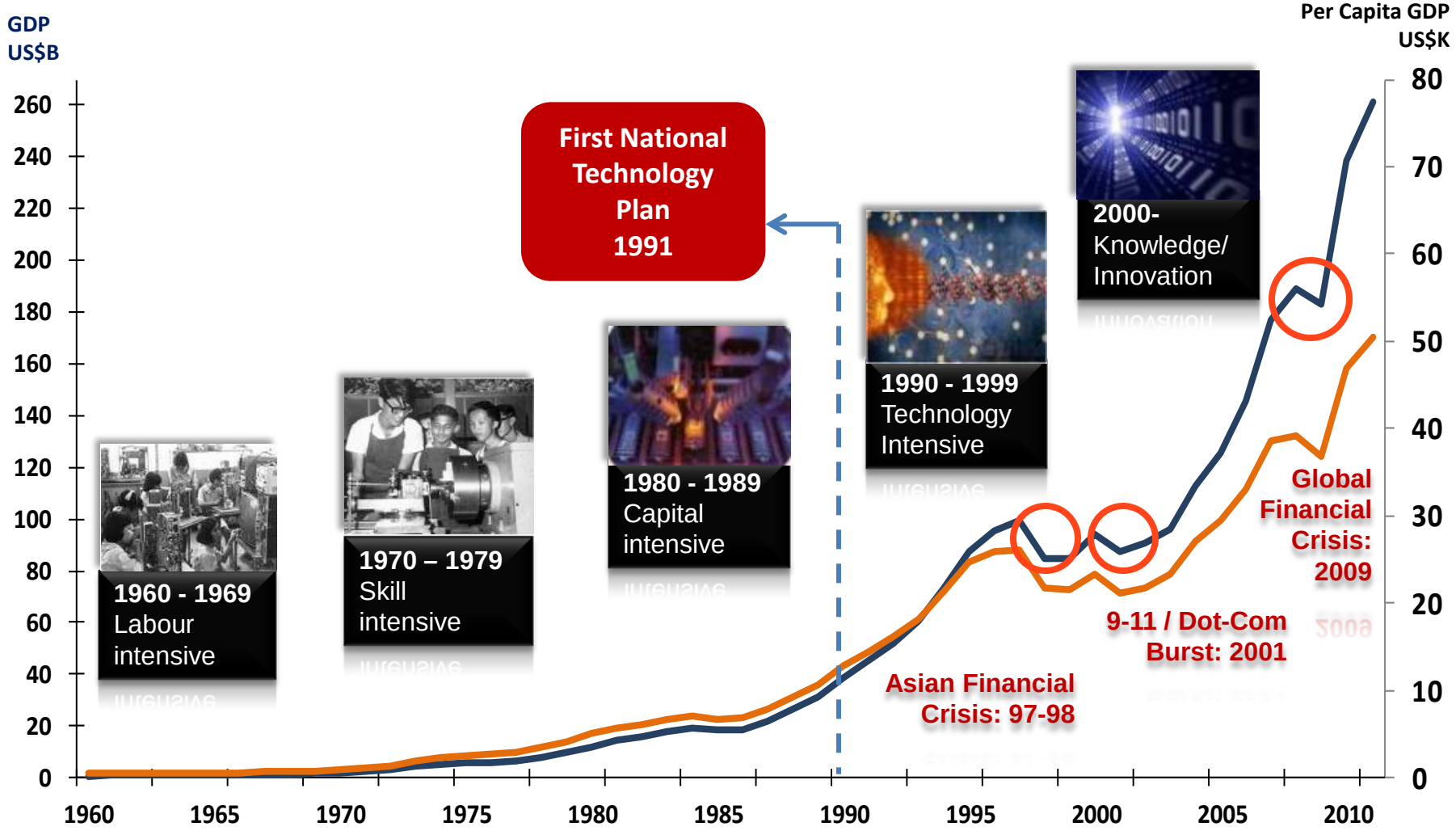
Wholesale / Retail

Manufacturing



Manufacturing accounts for about a fifth of GDP (20%)

Growth of the Singapore Economy



GDP
1960 US$704.5 mil
2011 US$262 bn
(S$326.8 bn)

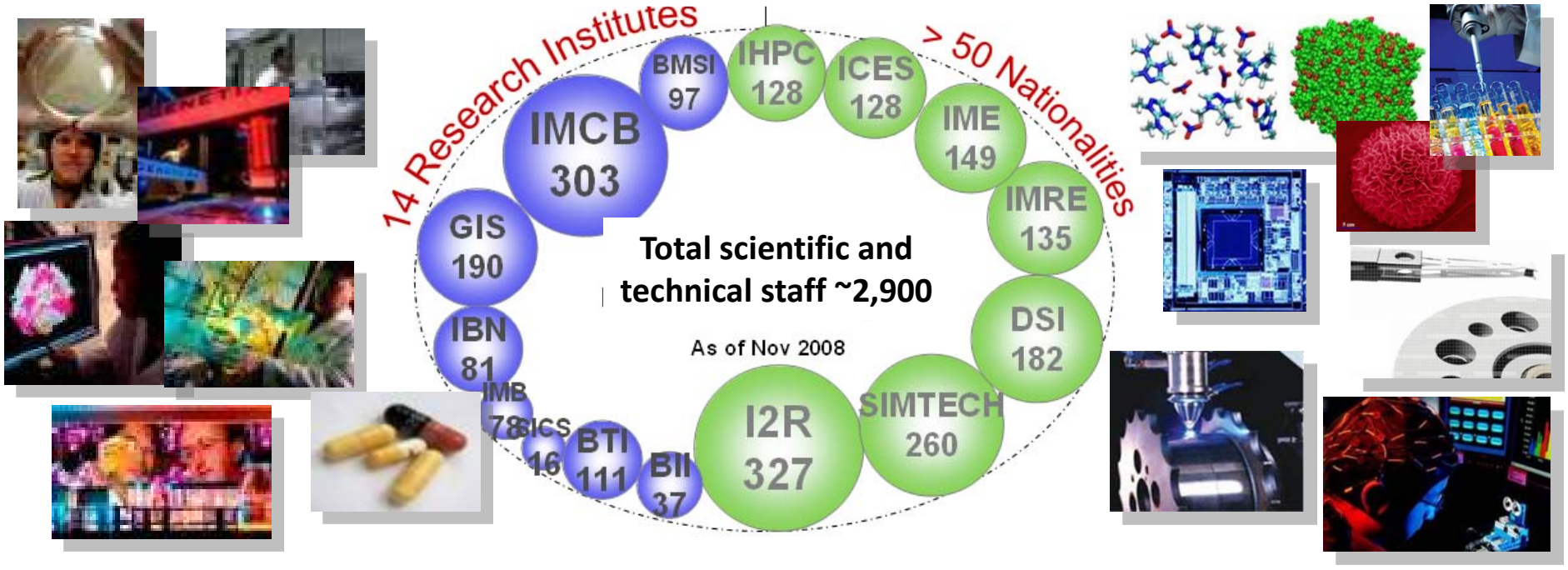
Per Capita GDP
1960 US$428
2011 US$50,000
(S$63,050)

Source: Singapore Ministry of Trade and Industry

Agency for Science, Technology & Research (A*STAR)

- Chairman
- Managing Director

- Biomedical Research Council (BMRC)
- Joint Council Office (JCO)
- Science and Engineering Research Council (SERC)
- A*STAR Graduate Academy (AGA)
- Exploit Technology Pte Ltd (ETPL)

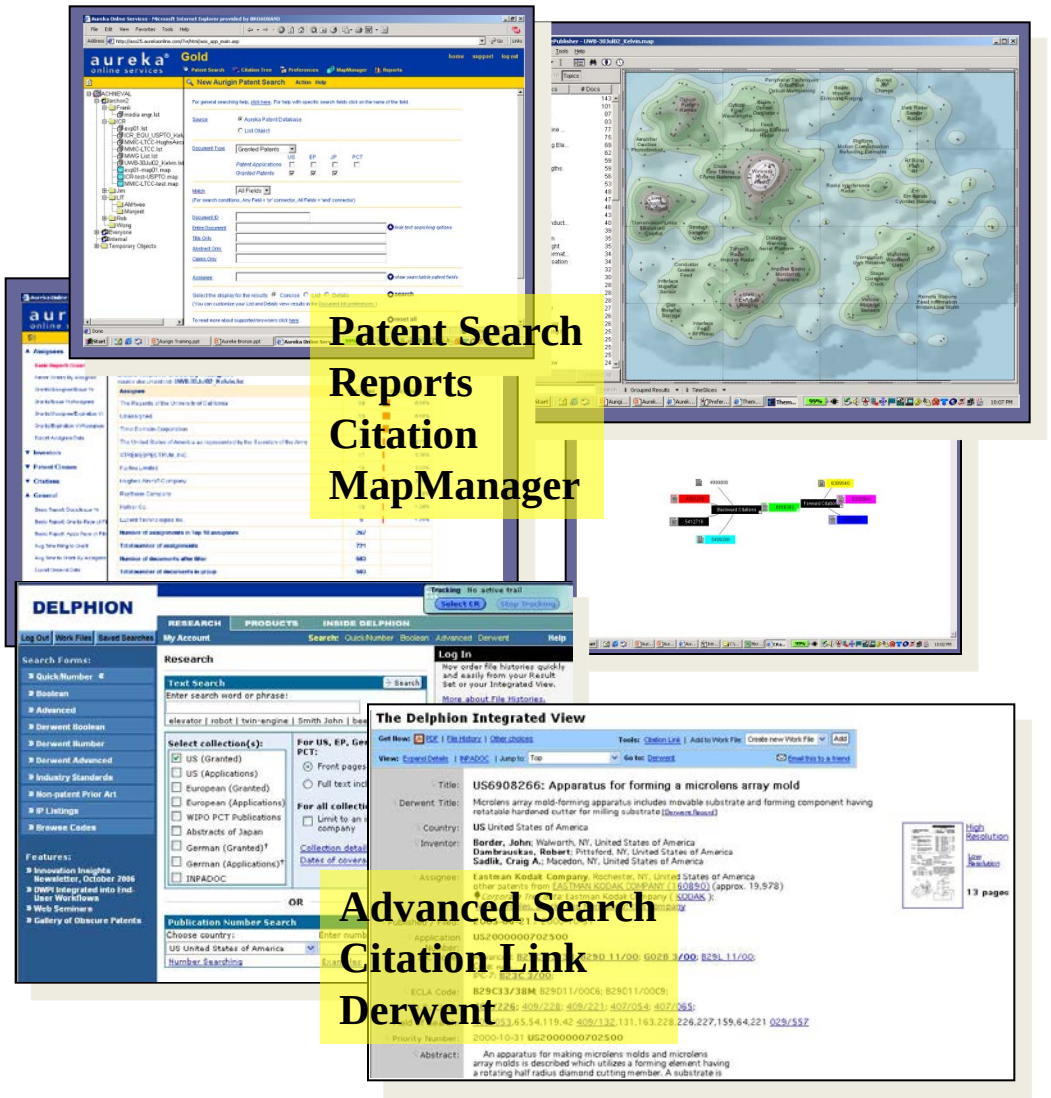


Use of Patent Information in Public R&D

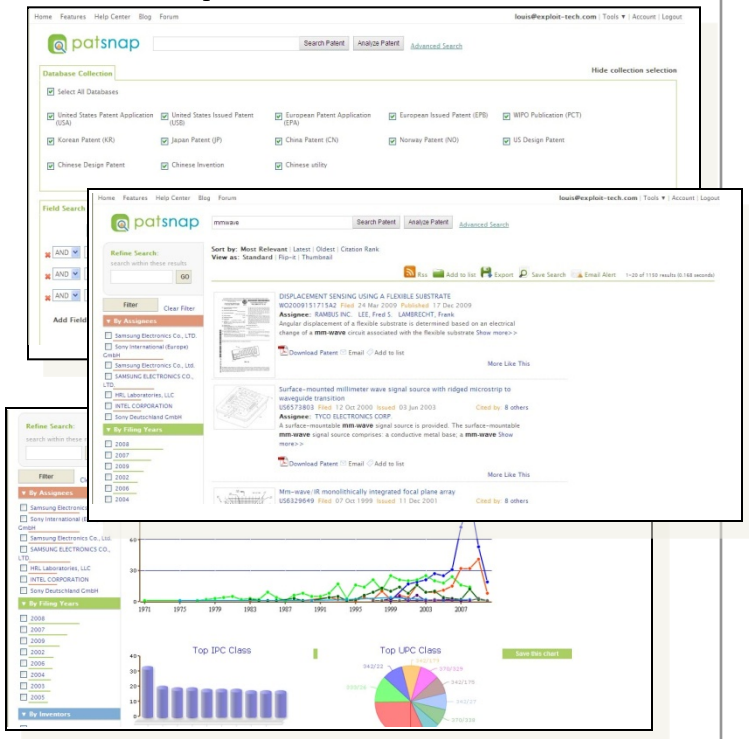
- Research Grant Call
- Challenges/Opportunities in R&D
- Industry R&D Collaboration
- IP Filing Strategy
- Potential Licensees/Licensors
- Freedom to Operate (FTO)
- Competitive Research

Overview of Patent Databases & Tools

Thomson Reuters (Aureka /Delphion /Derwent)



PatSnap



Others …

WizPatent (www.wizpatent.com)

LexisNexis (www.lexisnexis.com)

WIPS Global (www.wipsglobal.com)

Research Grant Call

Source: H2O Solutions

Patents information is:

- ✓ Increasing used in grant call and requires Principal Investigators to assess what's out there and how a research proposal can differentiate and value-add
- ✓ Ascertain what technologies are needed to bring about commercialization and/or potential collaborations to accelerate R&D outcome

Challenges & Opportunities in R&D (Part I)

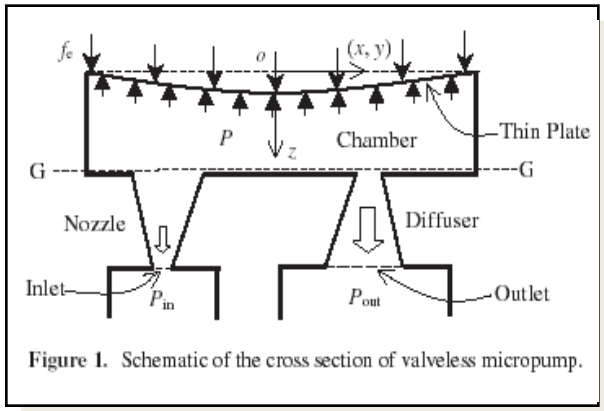
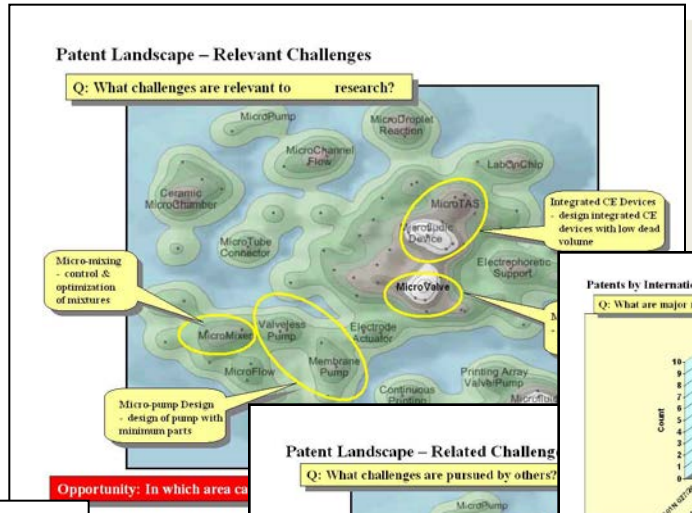
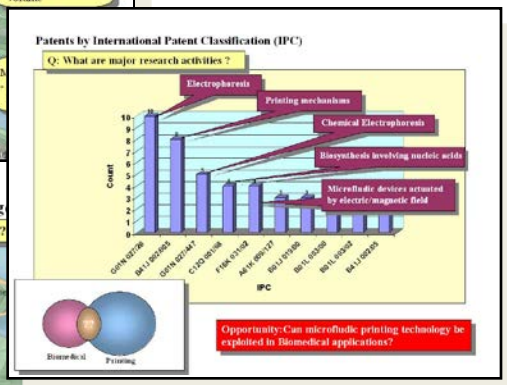
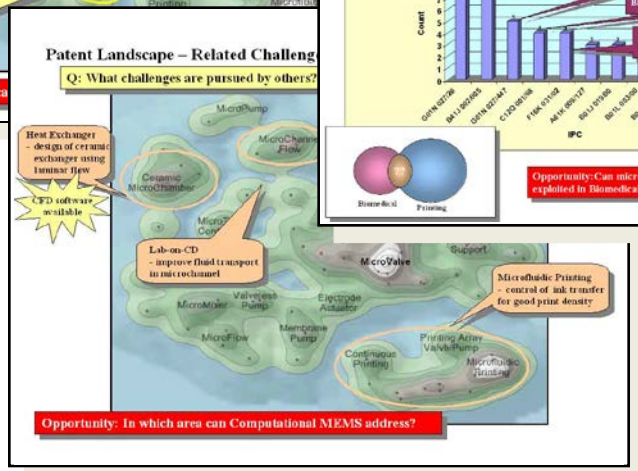
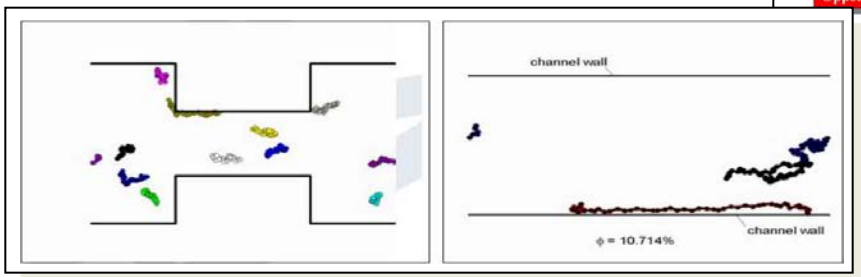


Figure 1. Schematic of the cross section of valveless micropump.





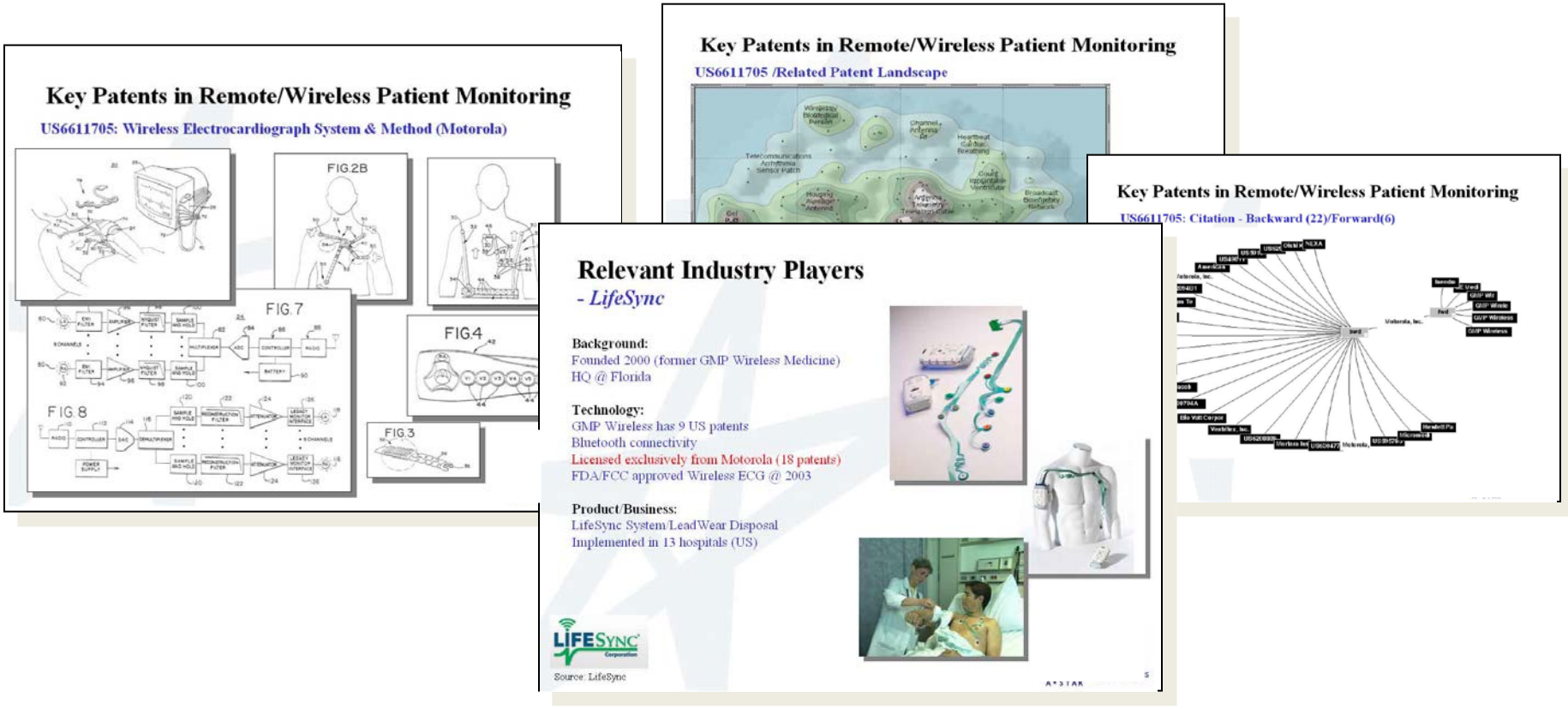




Patents Information is used to:

- ✓ Identify commercial challenges in MEMS applications and devices
- ✓ To explore how computational MEMS can provide insights into MEMS design
- ✓ To explore new applications & opportunities

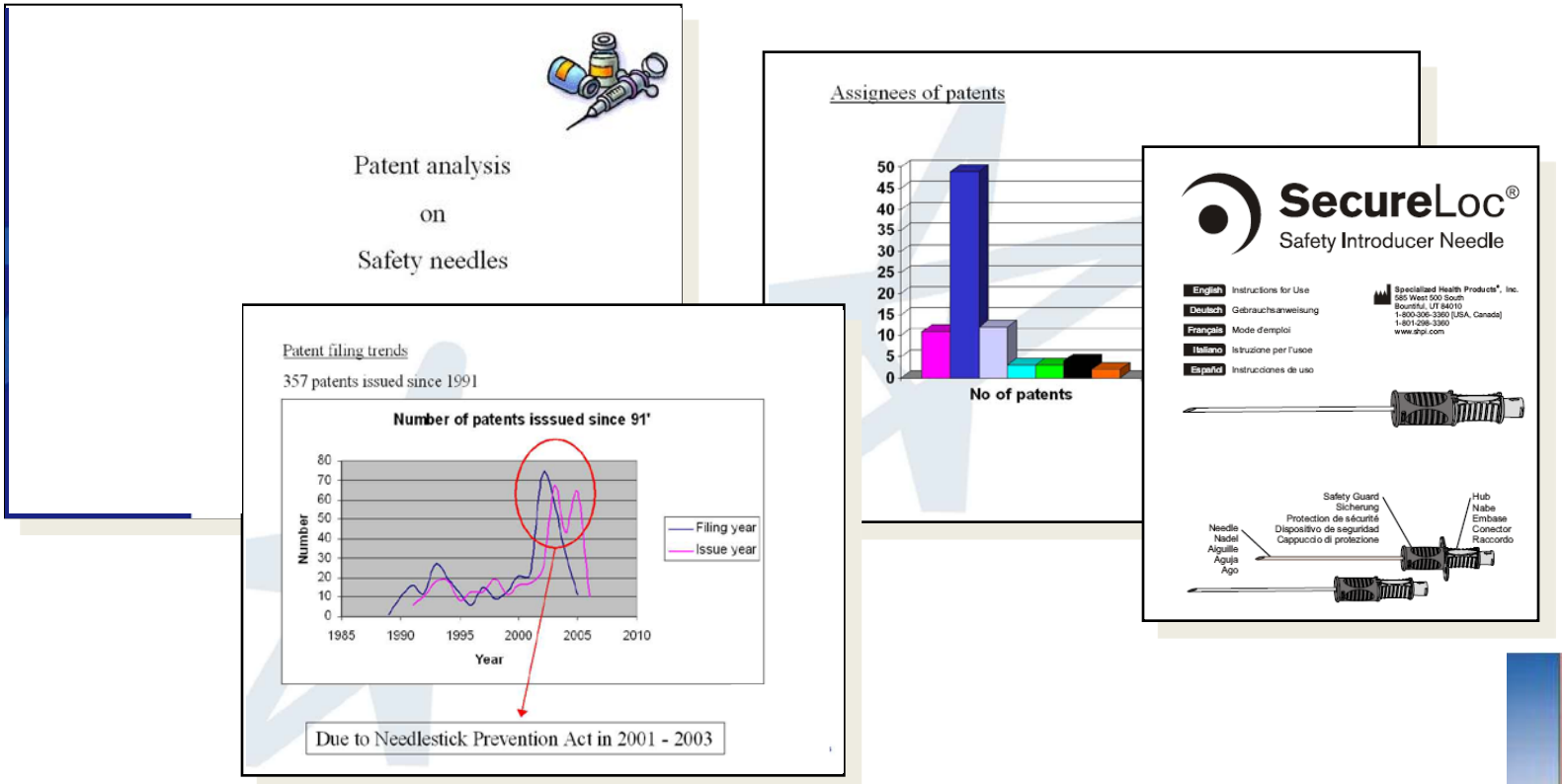
Challenges & Opportunities in R&D (Part II)

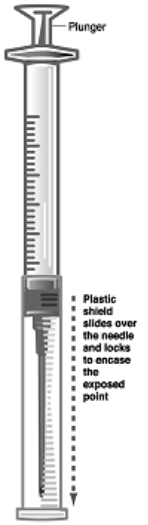


Patents Information is used to:

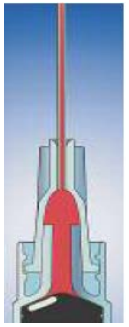
- ✓ To identify key players and products in the market place
- ✓ To review R&D plan and explore workaround solutions
- ✓ To consider the possibilities of partnerships and/or in-licensing

Industrial R&D Collaboration





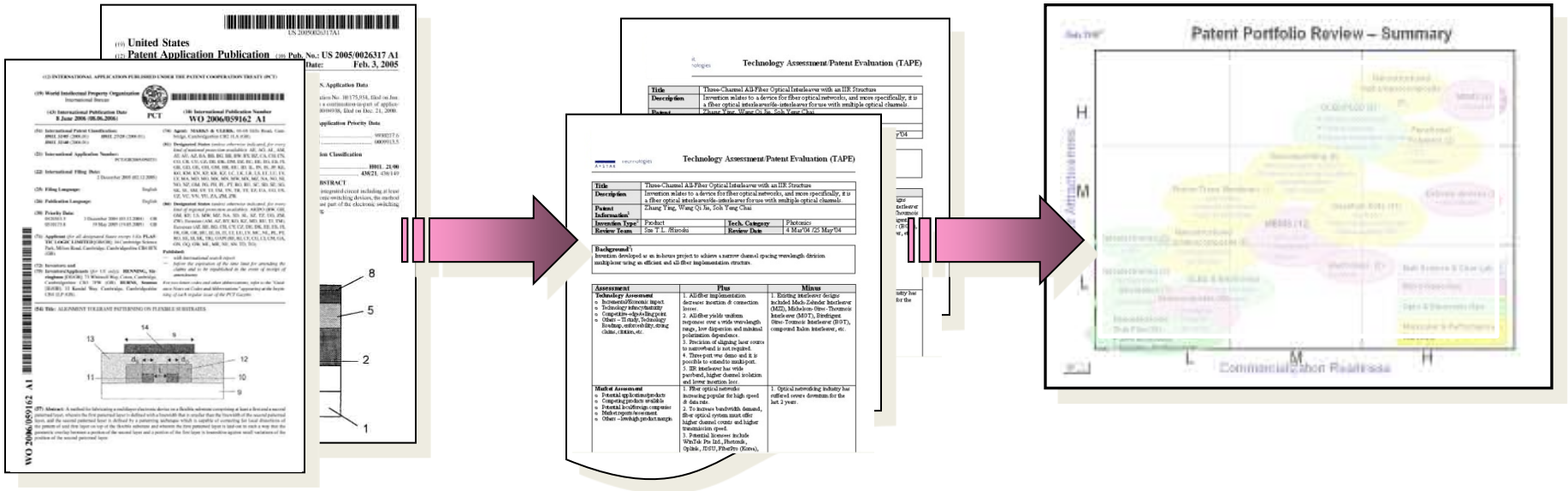
Syringe with protective shield



Patents Information is used to:

- ✓ To study existing and the evolution of design
- ✓ To explore and innovate new design
- ✓ To study market segment and country filing strategy
- ✓ To improve R&D proposal for funding support

IP Filing Strategy

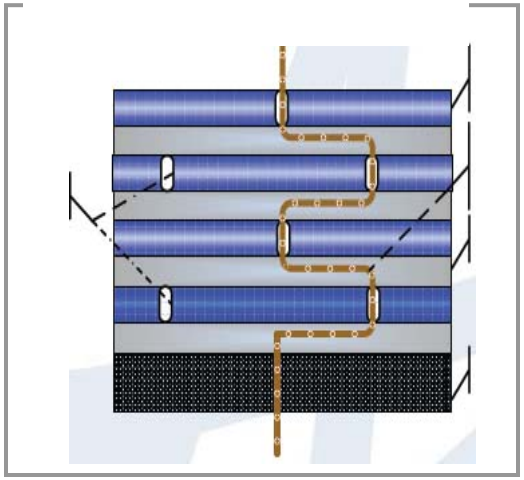


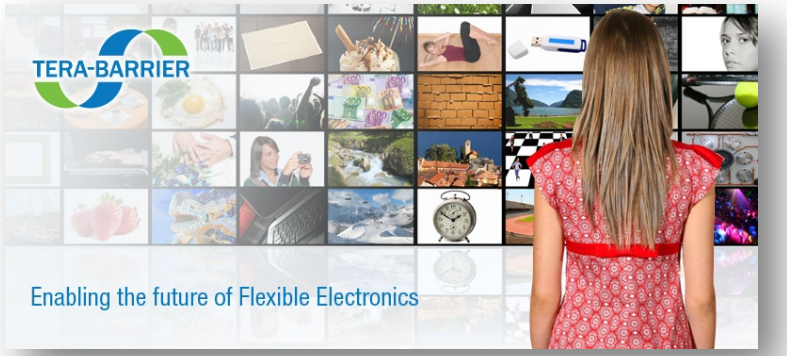
Patents Information is used to:

- ✓ To search for prior arts and study/analyze related claims
- ✓ To underline key advantages and disadvantages of Technology Disclosure
- ✓ To develop patent portfolio, i.e., looking internally and externally
- ✓ To explore usage or IP bundling across Research Institutes @ A*STAR
- ✓ To determine possible countries to file

A Case Study: Flexible Barrier Substrate

Substrate Barrier





THE OSADIRECT NEWSLETTER

OLED Lighting IP Landscape Review
* More than 1,800 patents * Patent data included
* More than 250 companies * Easy to use
click here for more details

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Devices Materials Commercial Process Patents

Where am I? Home > Magazine > Newsletter Archive > Tera-Barrier Films receives strategic investment from Applied Ventures

Saturday, 13th April 2013

Tera-Barrier Films receives strategic investment from Applied Ventures

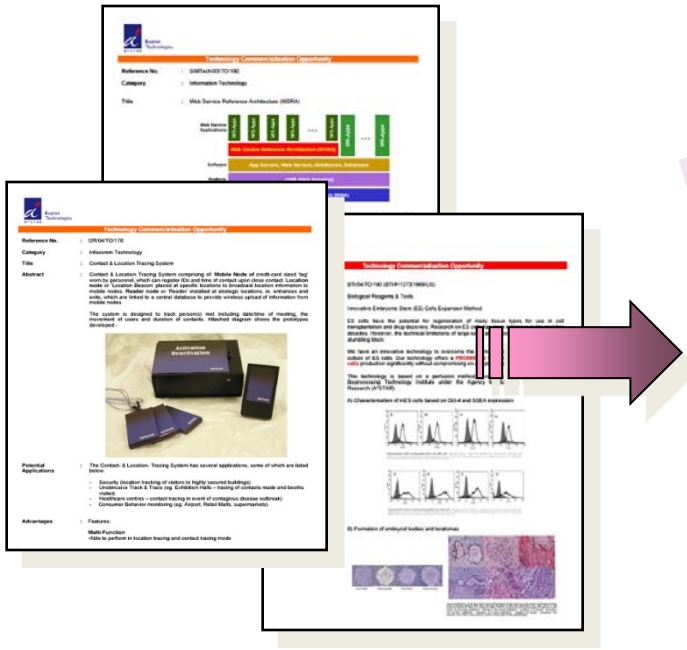
Tera-Barrier Films Pte. Ltd., a new spin-off from the Singapore Agency for Science, Technology and Research's (A*STAR) Institute of Materials Research and Engineering (IMRE), recently announced that Applied Ventures, LLC, venture capital arm of Applied Materials, Inc. has made a strategic investment in the company.

funds will be used for the development and manufacture of a new proprietary, moisture resistant film that significantly extend the life span of devices such as organic solar cells and flexible displays.

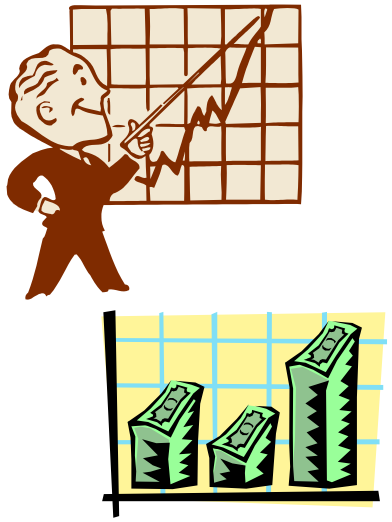
hristopher Moran, vice president and general manager of Applied Ventures, said "This investment is in line h Applied Materials' strategy to spur development of a broad range of products that not only serve customers' eds, but conserve the Earth's natural resources, and make alternative energy and environmental solutions more essible and affordable."

Finding Potential Licensees or Partners

A*STAR Technology Offer



Enterprise Technology Needs

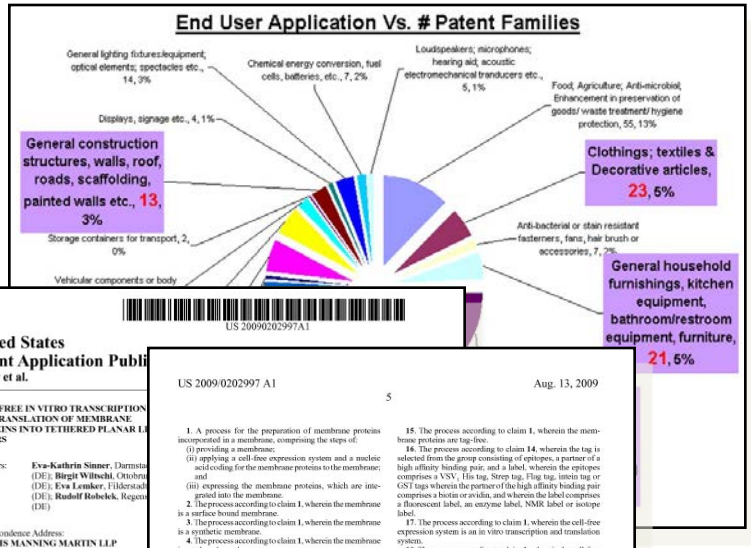


Patents Information is used to:

- ✓ To identify & target potential licensees
- ✓ To source new technologies for commercialization
- ✓ Study potential infringements and technology offers

Freedom to Operate (FTO)

Case 1: Technology A



Case 2: Technology B

Assignees	No. of Patents /Applications	
ADHD SOLUTIONS LTD.	1	COMPANIES/ RESEARCH ORG
Institute of National Research & Technology	1	
Biofeedback Computers, Inc.	1	
Human Bionics LLC	1	
IBVA Technologies, Inc.	1	
INTERACTIVE PRODUCTLINE INC.	1	
MindCenter Corporation	1	
MINDWAVES, LTD.	1	
National Institute of Information and Communications Technology	1	
NEUROSKY, INC.	1	
SSI Corporation	1	
The United States of America as represented by the Administrator of the National Aeronautics and Space Administration	1	
Unique Logic and Technology, Inc.	4	
ZYBERNETIX, INC.	1	
BROTZ; GREGORY R.	1	INDIVIDUALS
CONKWRIGHT GEORGE COLBY	1	
PRELL; ANDREW J.	1	
TORCH WILLIAM C	1	
TRACHTMAN, Joseph N.	2	
Unknown	2	UNKNOWN

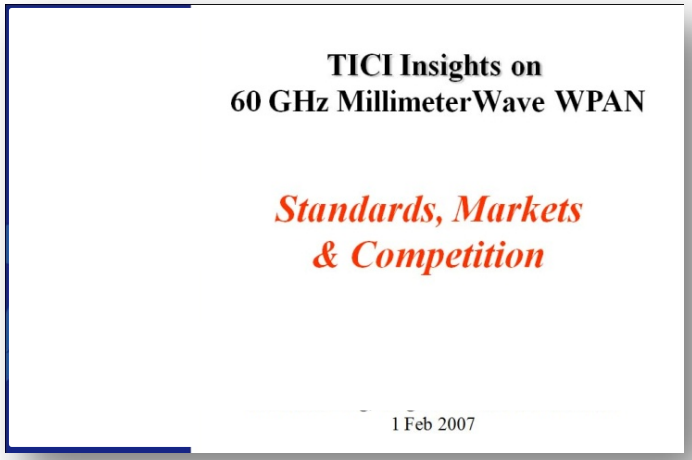
Patents Information is used to:

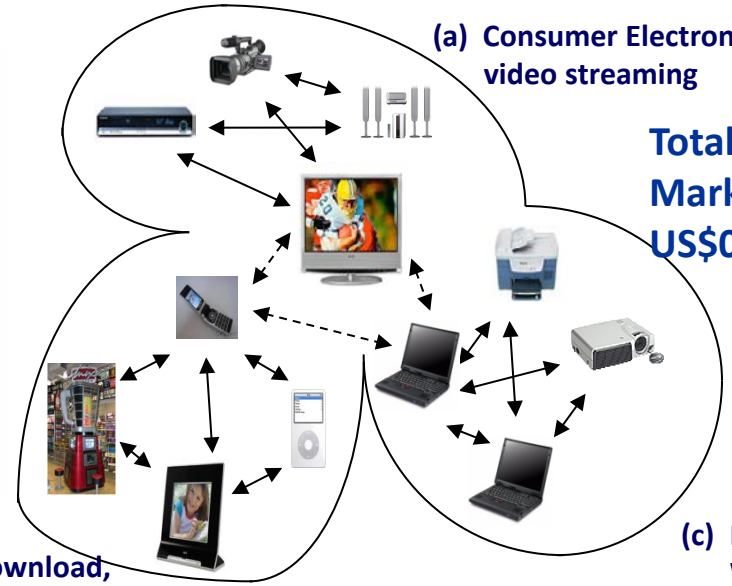
- ✓ Ensure Licensor has right to license a technology
- ✓ Licensee has a right to practice technology
- ✓ Assess the need to in-license

Competitive Research: mmWave-60GHz-WiGig

Millimeter Wave 60GHz Project …

- **Demand Trend:** multimedia infotainment on-the-go
- **Solution:** 60 GHz CMOS technology offers low-cost ubiquitous secured wireless connectivity at multi-Gbps data rate up to 3 m range
- **Readiness:** A*STAR –NTU have created valuable IPs to venture into 60 GHz chipset productization and commercialization





(a) Consumer Electronics: HDTV, video streaming

Total Addressable Market for chipsets: US$0.5B – 1.2B in 2015

(b) Mobile: Video download, bulk data transfer

(c) PC & Peripherals: WUSB, IPTV, Gaming

IP Intermediary (IPI) Singapore

Launched in 1 April 2011:

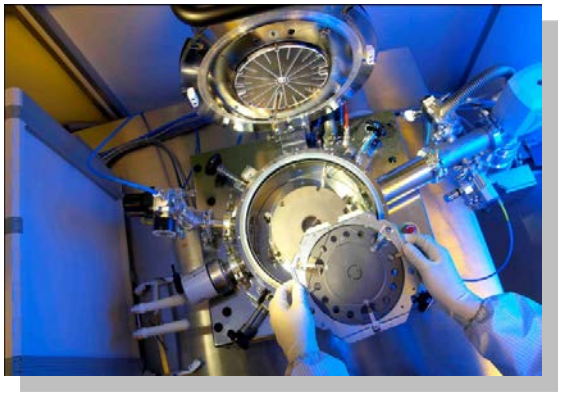
A nexus for local enterprises to access and acquire enabling technologies, know-how & intellectual property as a means to innovate and upgrade its businesses.

ICT, Electronics, Manufacturing, Energy & Environment, Healthcare, Materials & Chemicals, Marine & Offshore …

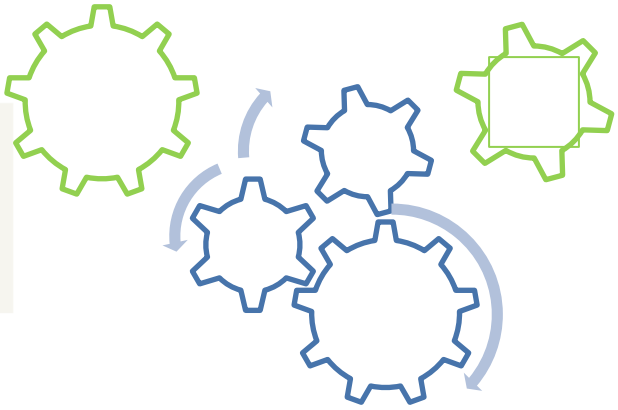
Addressing the Gaps …

1. **Information (Access) Gap**
2. **Translation Gap**
3. **Transfer (Transaction) Gap**
4. **Funding Gap, etc.**

R&D, Technology & Innovation Providers



Business Enterprises

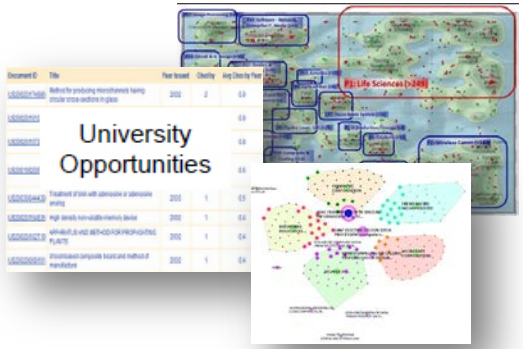


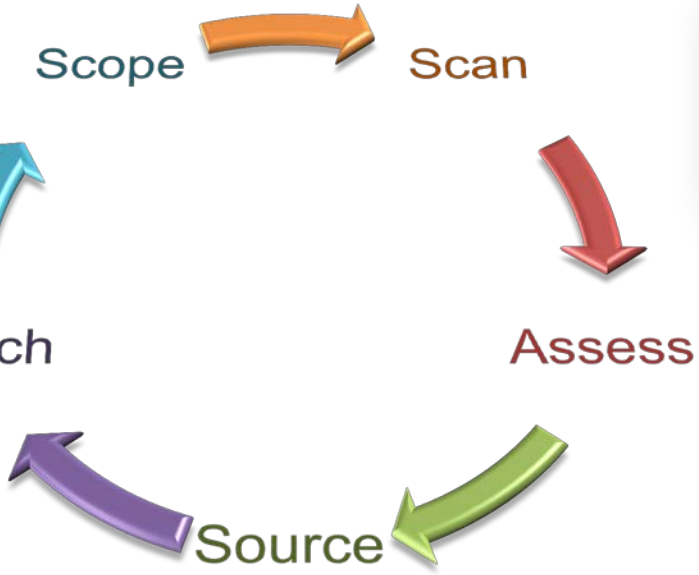
1. ***Study of the Role of Intermediaries in Support of Innovation*** *– Australia Department Industry, Tourism and Resources, April 2007*
2. ***Science & Technology Intermediary Services for SMEs: A Guide via Practices****, European Union, April 2008*

What We Do …

SCOPE:
Understand company's business, product and services; translate innovation objectives into specific IP and technology requirements, etc.

SCAN:
Search available technologies or expertise from local and overseas sources through IPI Network, technology portals, patent analysis, etc.





ASSESS:
Assess technologies, TRL and company's requirements, etc.

MATCH:
Introduce and facilitate discussion , site visits, technology evaluation, collaboration models, funding and others in order to facilitate agreements

SOURCE:
Contact technology providers, establish business model, e.g., licensing, collaboration, etc.

Organizations that IPI works with …

Local Tech Partners (IP Providers)

International Tech Partners

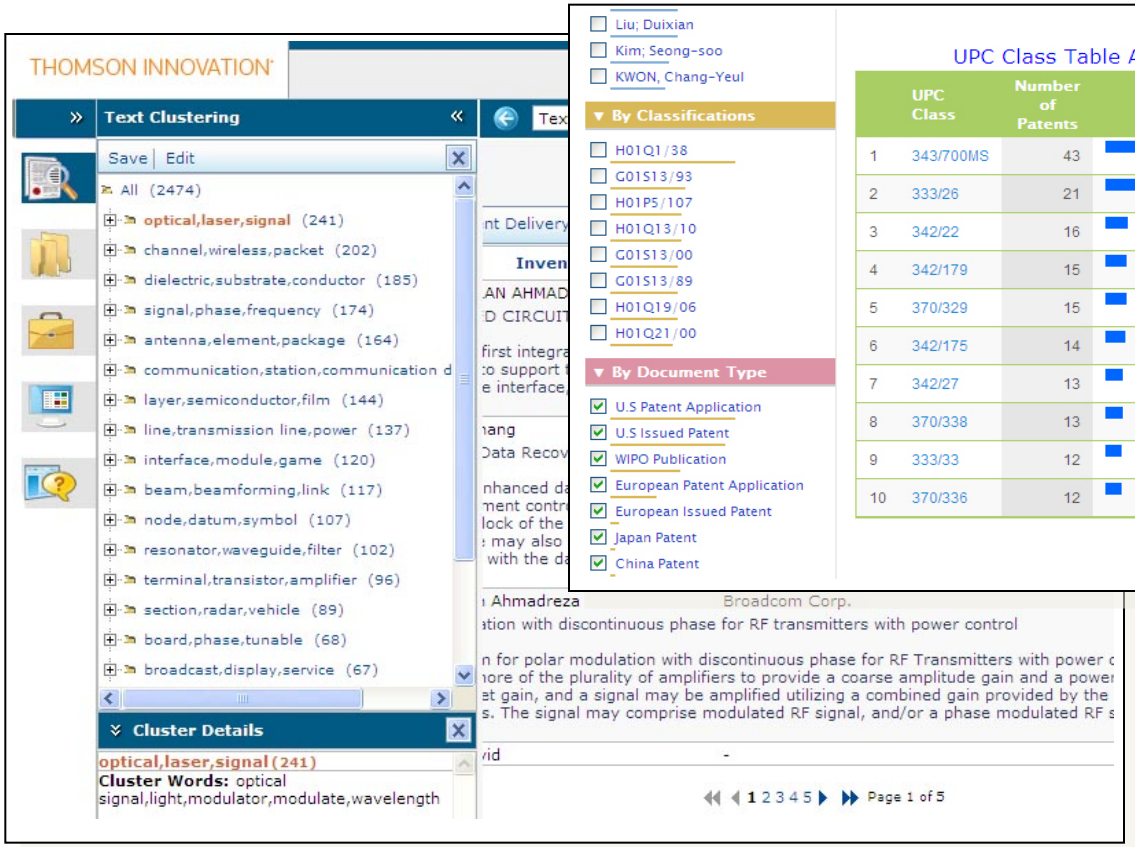
Government Agencies

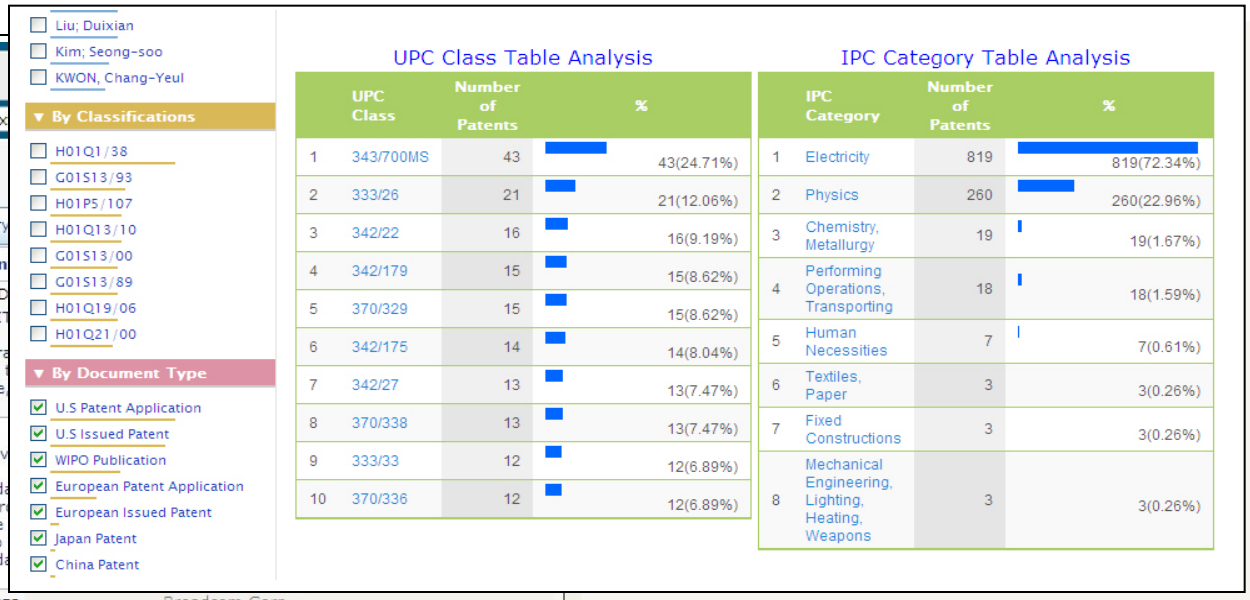
Trade Organizations

Use of Patent Information in GOV Agencies

- ☑ **Searching for Innovation Opportunities**
- ☑ **IP Clustering of Technology Partners**
- ☑ **Patent Analysis in Grant Submission**

Using Patent To Search for Innovation Opportunities



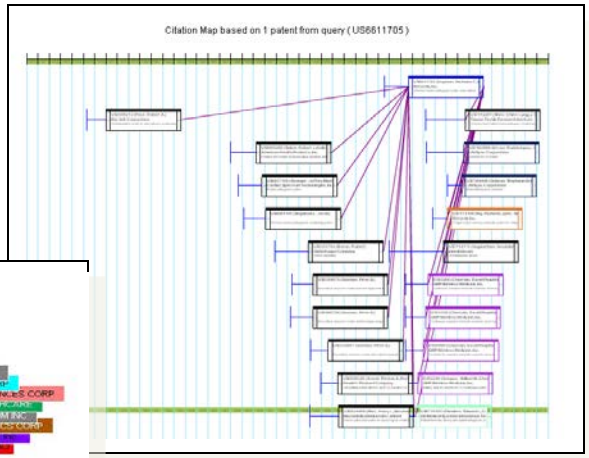


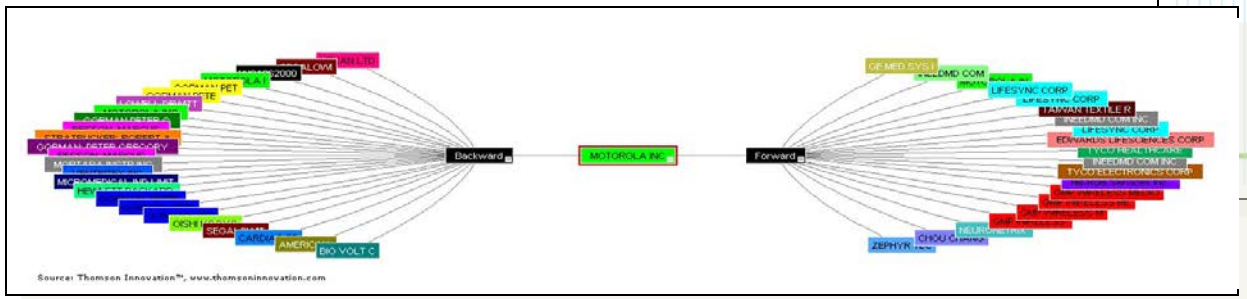
UPC Class Table Analysis

	UPC Class	Number of Patents	%
1	343/700MS	43	43(24.71%)
2	333/26	21	21(12.06%)
3	342/22	16	16(9.19%)
4	342/179	15	15(8.62%)
5	370/329	15	15(8.62%)
6	342/175	14	14(8.04%)
7	342/27	13	13(7.47%)
8	370/338	13	13(7.47%)
9	333/33	12	12(6.89%)
10	370/336	12	12(6.89%)

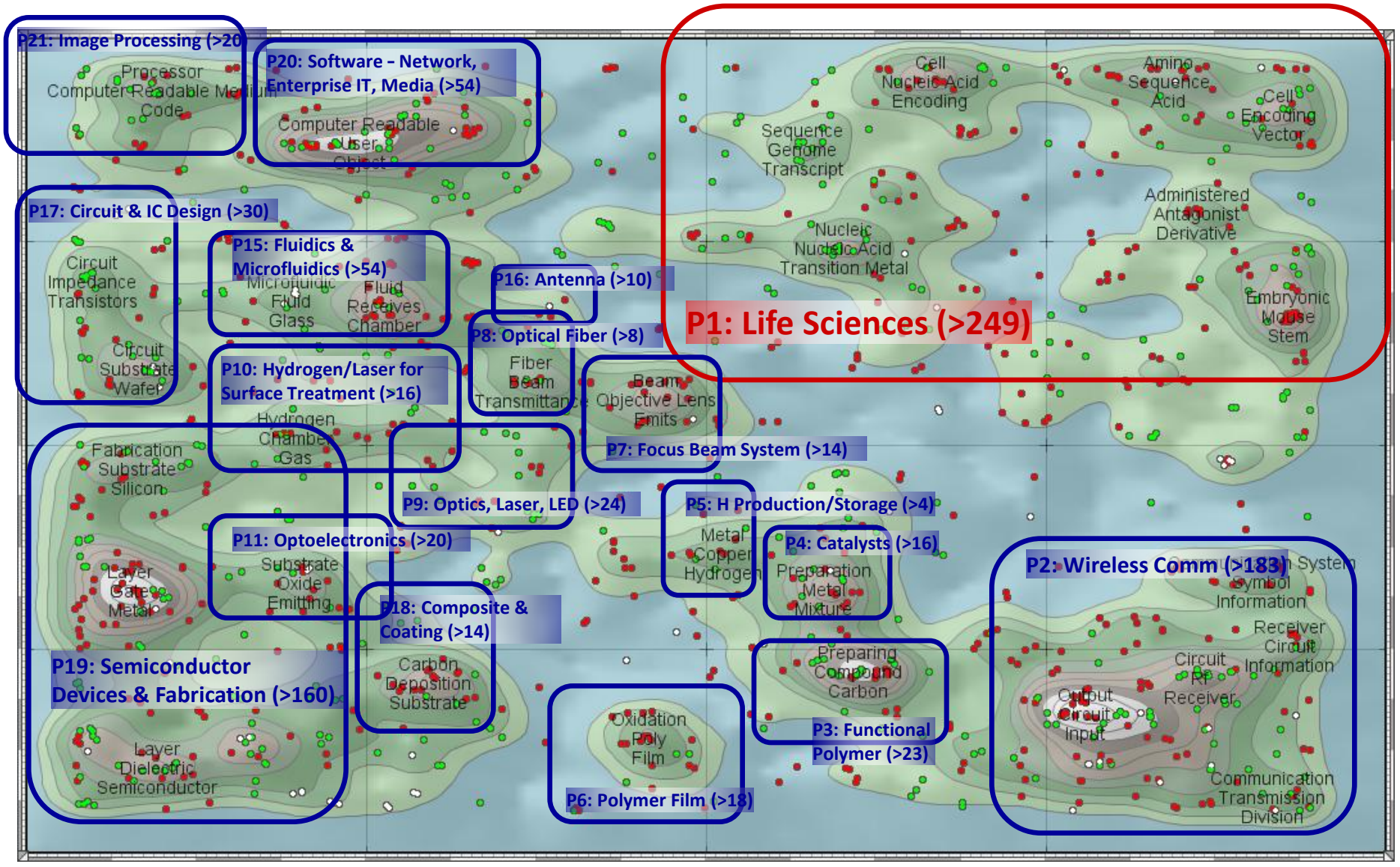
IPC Category Table Analysis

	IPC Category	Number of Patents	%
1	Electricity	819	819(72.34%)
2	Physics	260	260(22.96%)
3	Chemistry, Metallurgy	19	19(1.67%)
4	Performing Operations, Transporting	18	18(1.59%)
5	Human Necessities	7	7(0.61%)
6	Textiles, Paper	3	3(0.26%)
7	Fixed Constructions	3	3(0.26%)
8	Mechanical Engineering, Lighting, Heating, Weapons	3	3(0.26%)

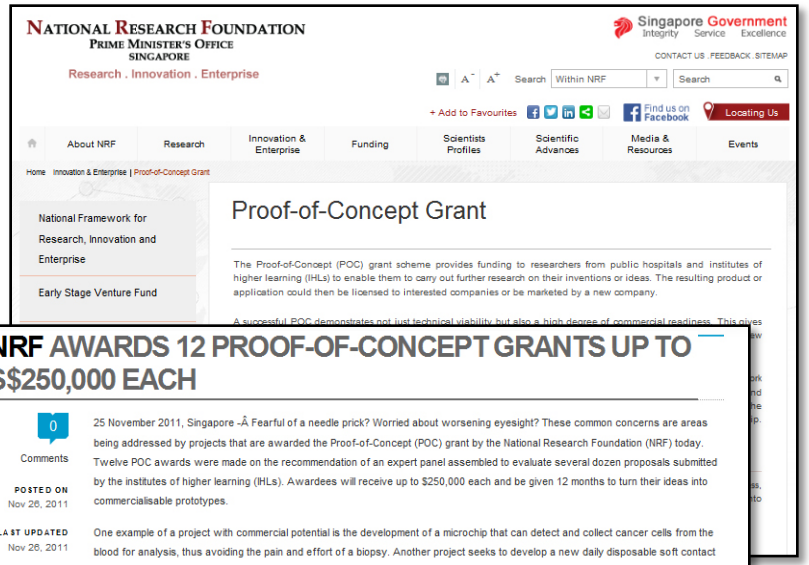


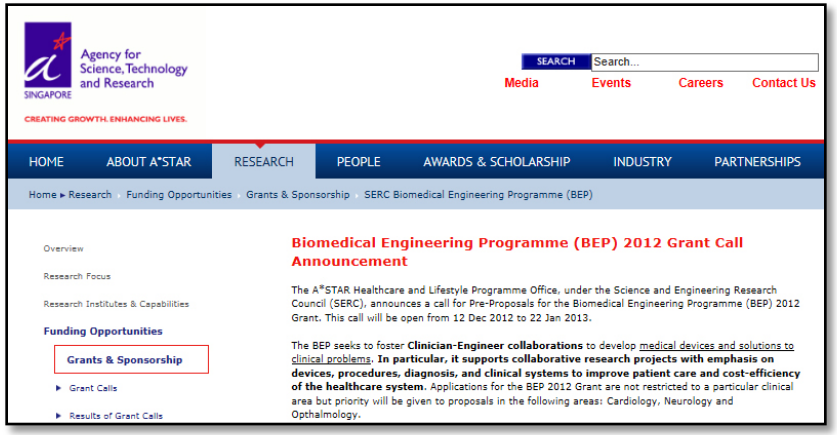


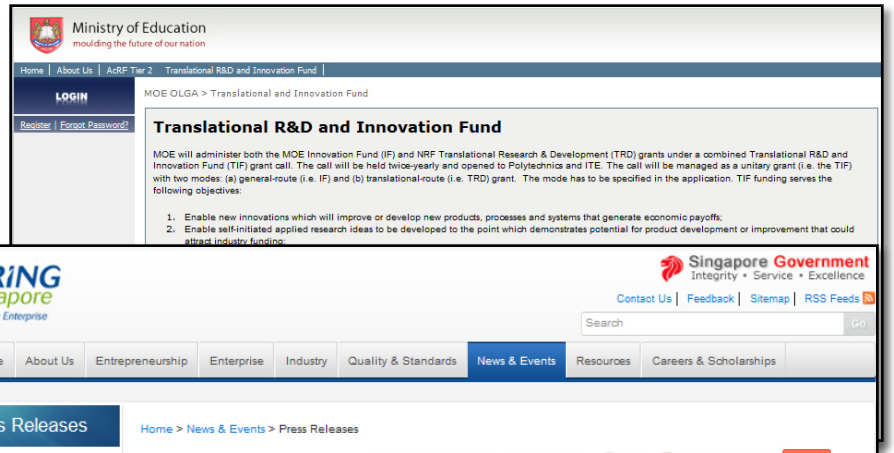
IP Clustering of Technology Partners

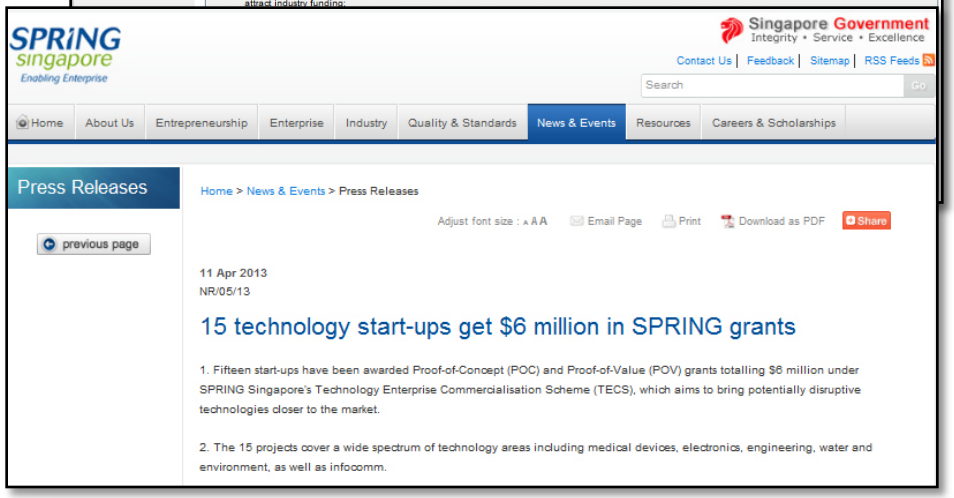


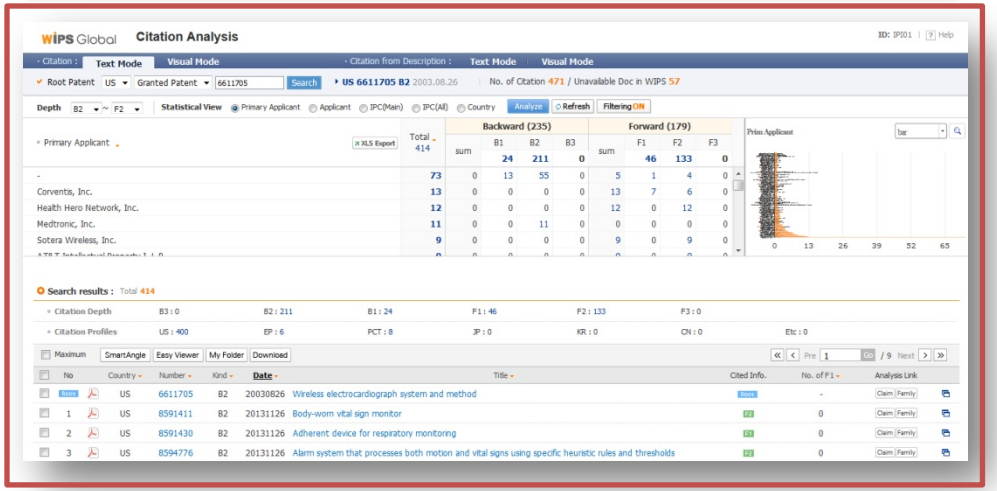
Patent Analysis in POC and POV Submission











Thank you for listening

ipi-singapore.org

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Singapore 138673

A Special Thanks …

Intellectual Property Office of Philippines (IP PHL)

and

World Intellectual Property Organization (WIPO)