



NAVIGATING CROWDED IP WATERS

REVIEW OF INNOVATION PROCESS AND IP INTELLIGENCE

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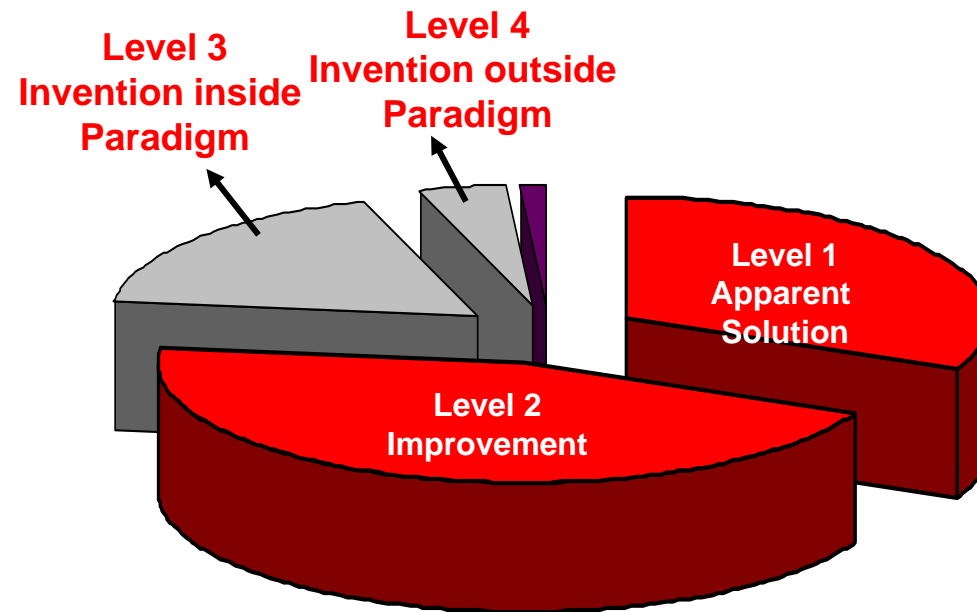
THOMSON REUTERS

Honeywell

Crowded IP necessitates “Out-of-the-box Thinking”

Levels of Invention Vs Patents distribution

- Level 1 – 32%
- Level 2 – 45%
- Level 3 – 18%
- Level 4 – 4%
- Level 5 – 1%

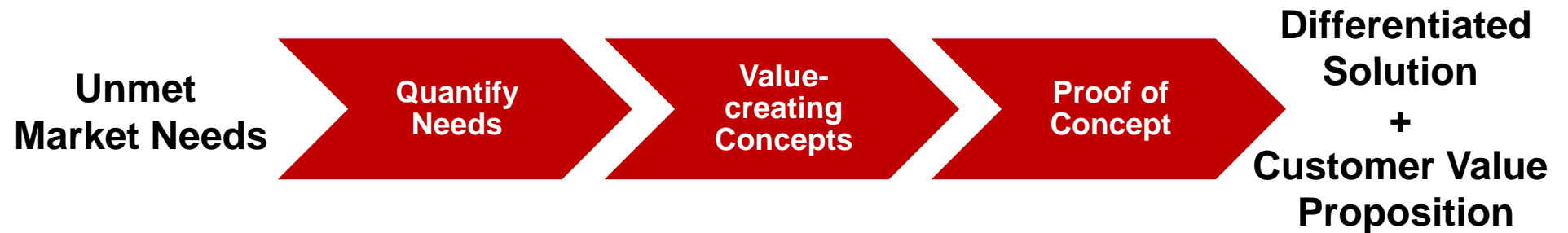


Innovation goes beyond “Out-of-the-box Thinking”

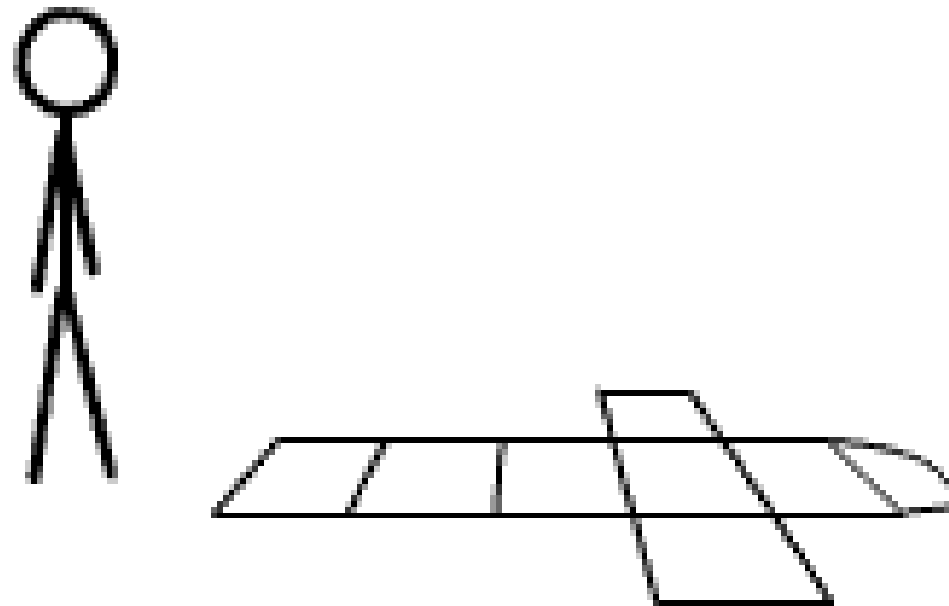
Innovation is about,

- Understanding Customer Pain Points
- Creating Value to Customer in New Ways
- Creating Insightful Idea
- Finding Path to Market
- Raising Entry Barrier
- Enabling Multi Generation Products

New Product Ideation



Innovation Barriers



Growing Ideas into Innovations

Empowers the User



Protectable



Scalable



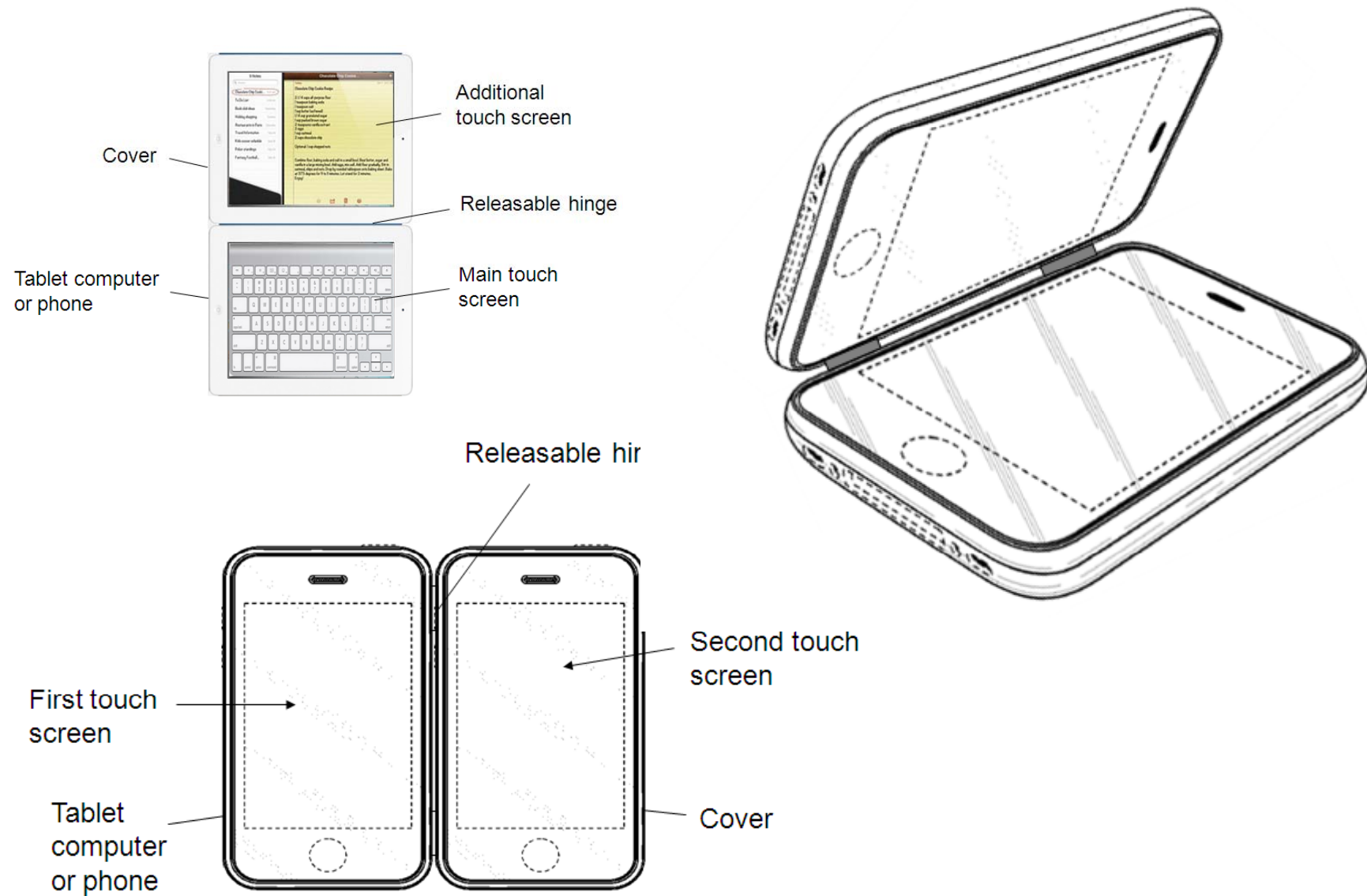
Aligned



Idea



OUR EXAMPLE FOR TODAY



How to Navigate in crowded IP waters ?

Navigating

=

Visualizing

+

Realizing

Visualizing the IP that we need

Understanding what drives IP

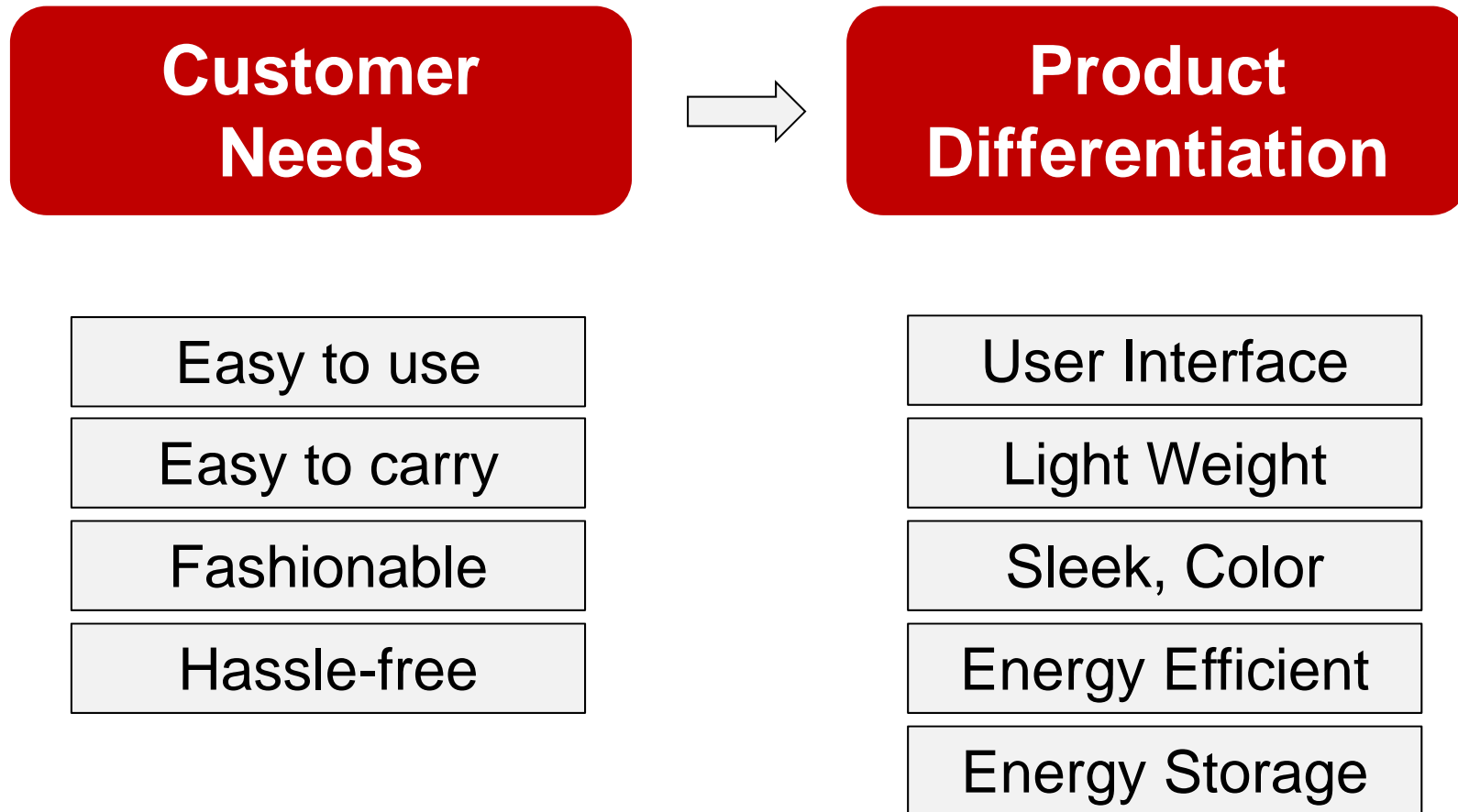
Customer Needs

Product Differentiation

Technology Drivers

IP Drivers

Translating the Whys to the Whats



Translating the Whats to the Hows

Product Differentiation

User Interface

Light Weight

Sleek, Color

Energy Efficient

Energy Storage



Technology Drivers

Intuitive UI

C Fiber composites

No bulky Fan

Local Energy Gen

Improved Battery

Heat Mgmt

Technology Landscape
Analysis

Visualizing IP

Translating the Hows to the Whats

Technology Drivers

Intuitive UI

C Fiber composites

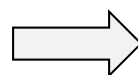
No bulky Fan

Local Energy Gen

Improved Battery

Heat Mgmt

Visualizing IP



IP Drivers

UI Design Patents

Material Composition

E Power Switching

E Conversion - Solar

E Conversion - TE

Battery materials

Battery Optimization Algo

Active Cooling Piezo Fans

Act Cooling Synthetic Jets

Patent Landscape
Analysis

Landscape Analysis – Technology / IP

Input – Key words, Seed patents

- Technology directions
- IP – Key Players & their tech approach
- Active inventors
- IP density maps
- New Concepts – Recent Applications

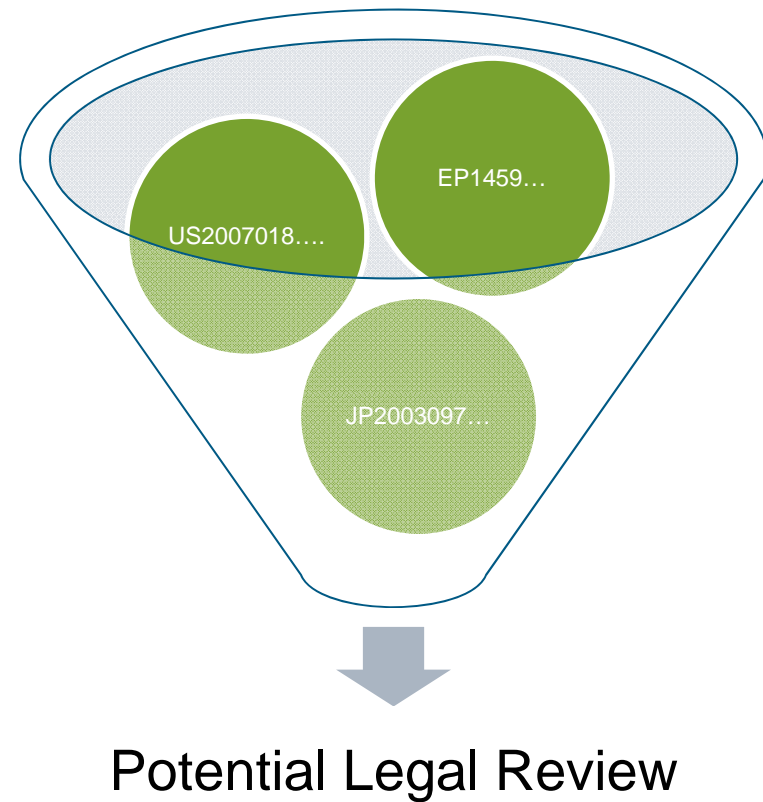
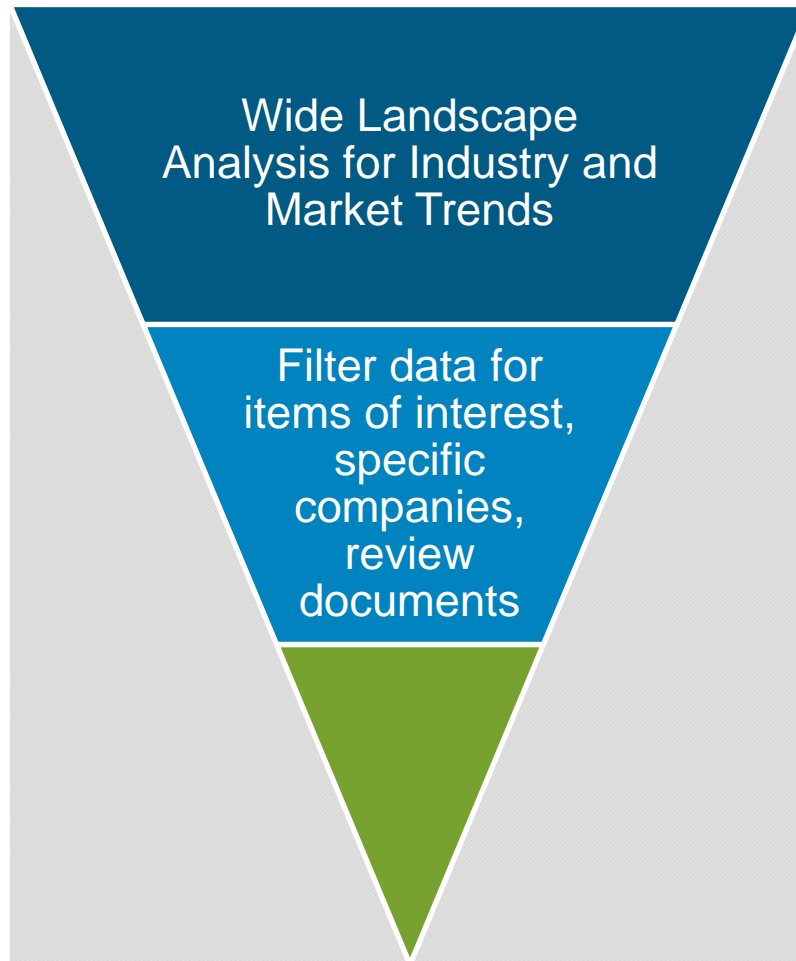
Next Steps:

- White Space Analysis
- Brainstorming focused on white spaces

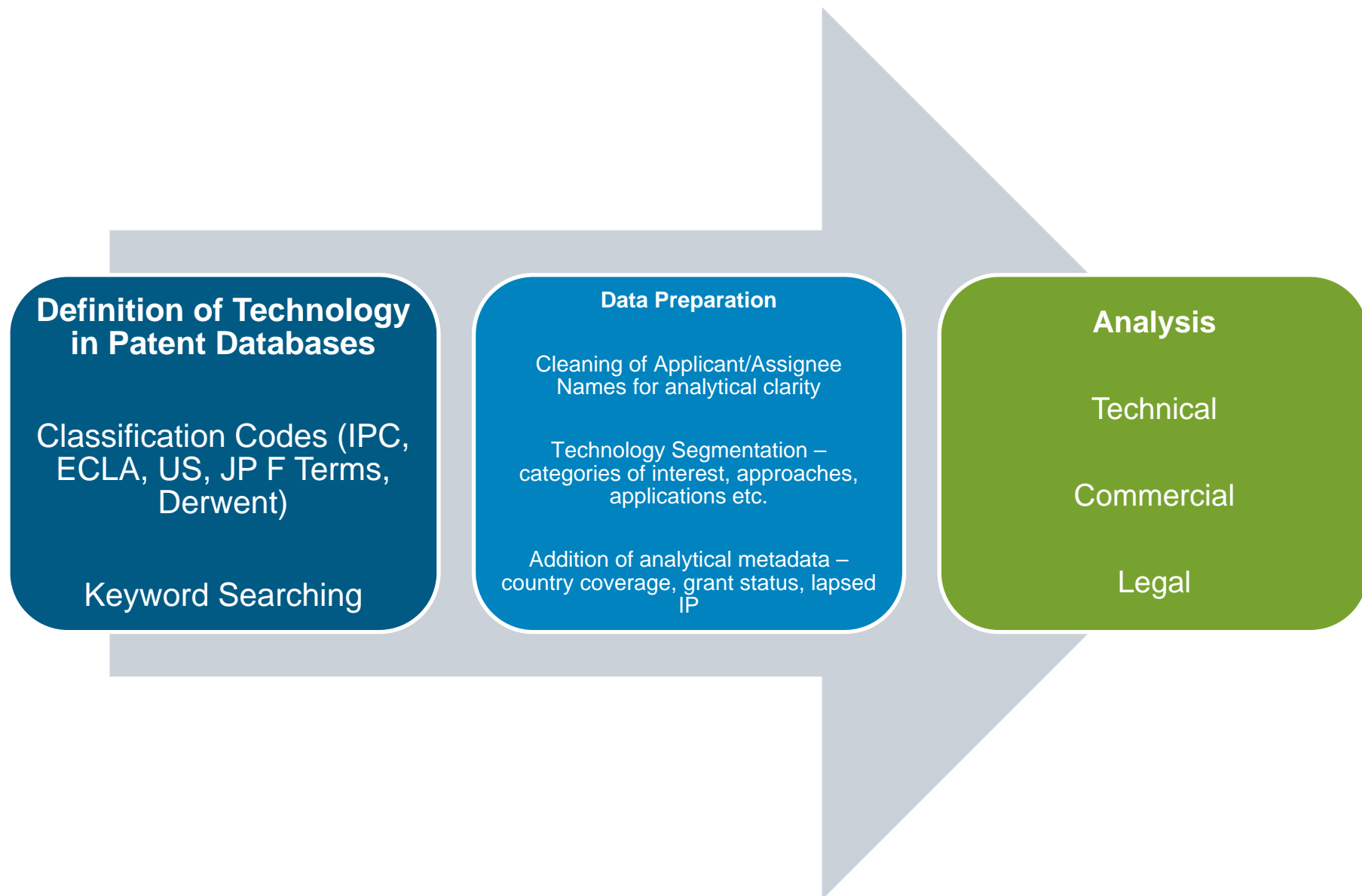
INTRODUCTION TO PATENT LANDSCAPING

- The creation of *commercially and legally interesting information* from large pools of patent data
- Can be:
 - Technically limited – i.e. technology landscaping
 - Patent applicant limited – i.e. competitive landscaping
- Output is designed to:
 - Answer technical and commercial questions
 - Who is doing what? What is growing in activity?
 - Create more powerful, more specific questions
 - What should we be worried about? Are any questions now moot or less important?
 - Prioritise actions
 - FTO opinion-seeking, legal review requirements, further technology definition

METHODOLOGY – FROM THE GENERAL TO THE SPECIFIC

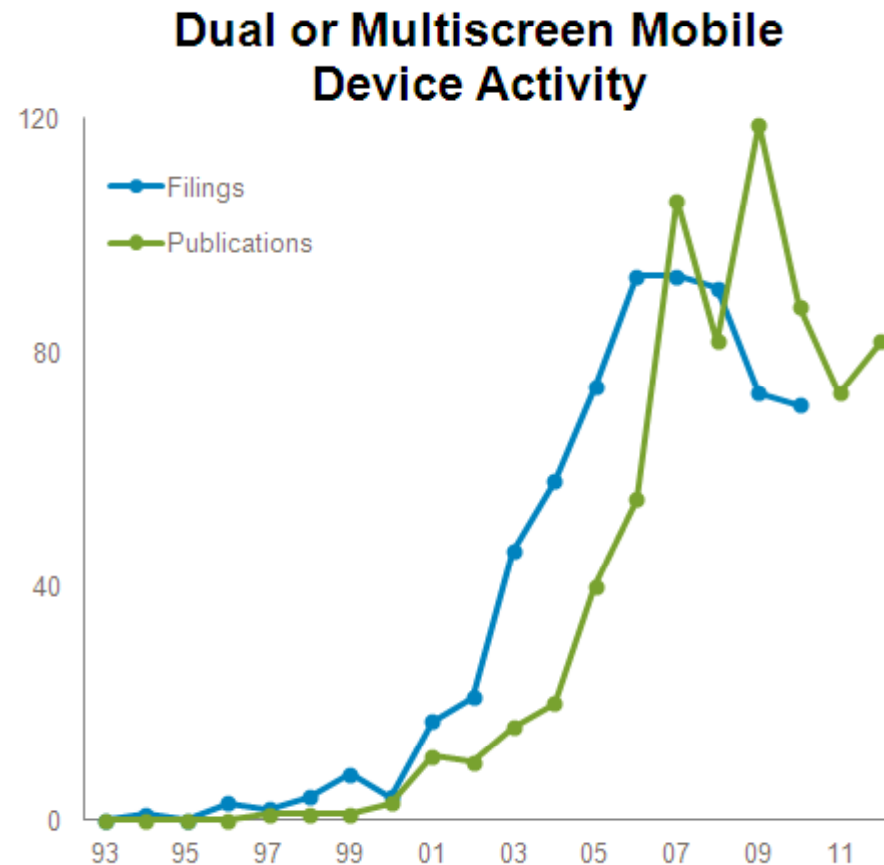


THE LANDSCAPE CREATION PROCESS



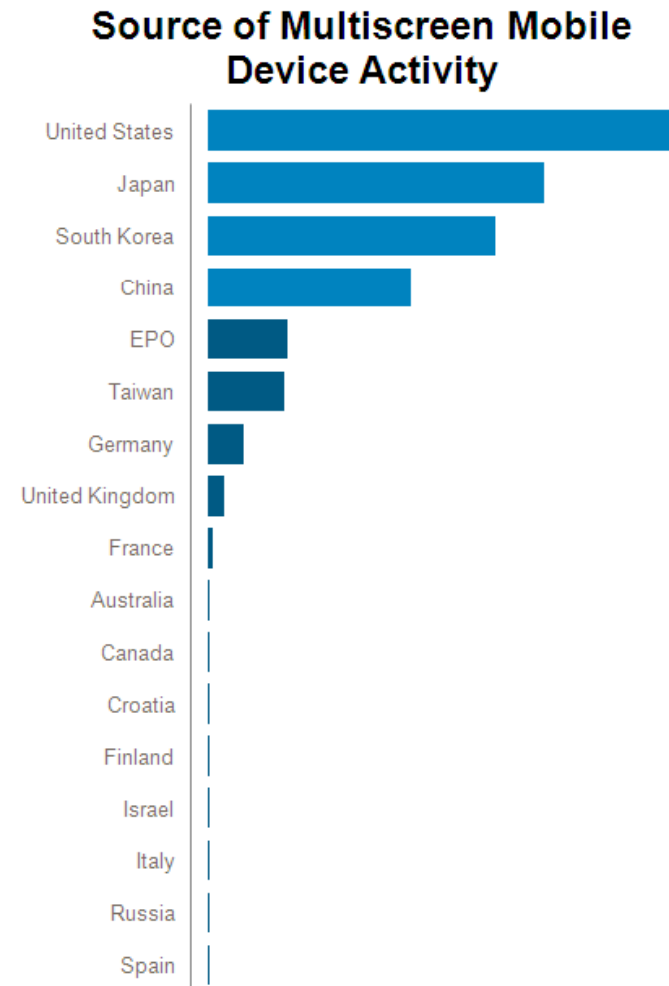
TIMELINES COMMUNICATE TECHNICAL MOOD

- Review of technology landscape timelines provide basic findings
 - Is the technology increasing or decreasing?
 - What changes in activity has the field undergone recently?
- While exhibiting exponential growth in patent activity from 2001 to 2005, growth in multidisplay patent filings has stalled, or even declined



IP IS LOCAL, GEOGRAPHY EQUALS MARKETS

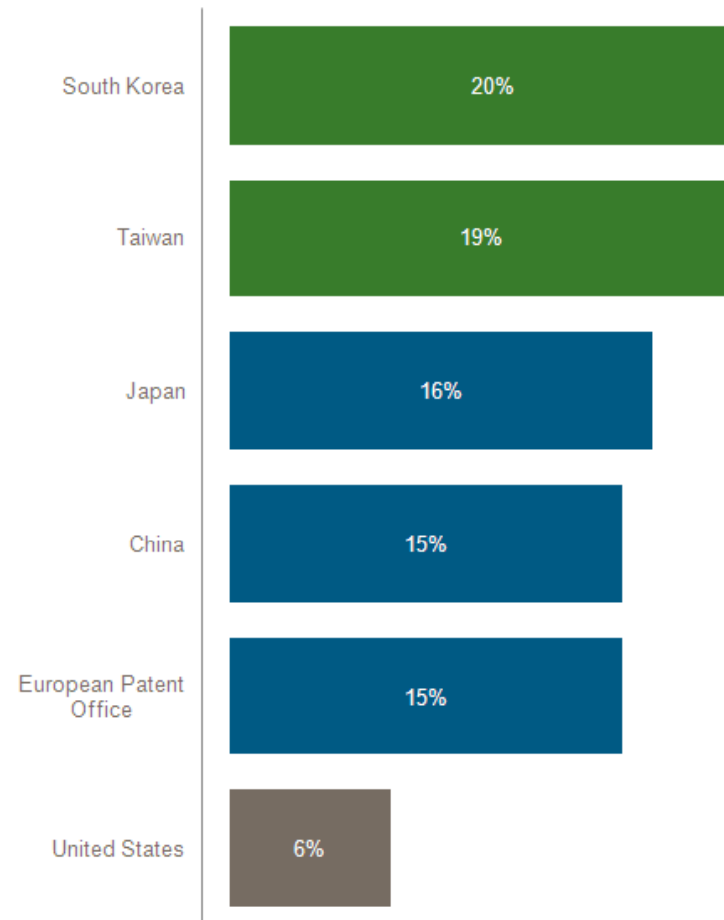
- Telecoms is global, but companies tend to address certain markets
- The source of patent activity informs on the nature of global IP activity
- Provides insight on the Far East, as well as more traditional markets
- The US is dominant, with major innovating entities based in Japan South Korea and China
- European activity is weak by comparison



THE WORLD IS CHANGING

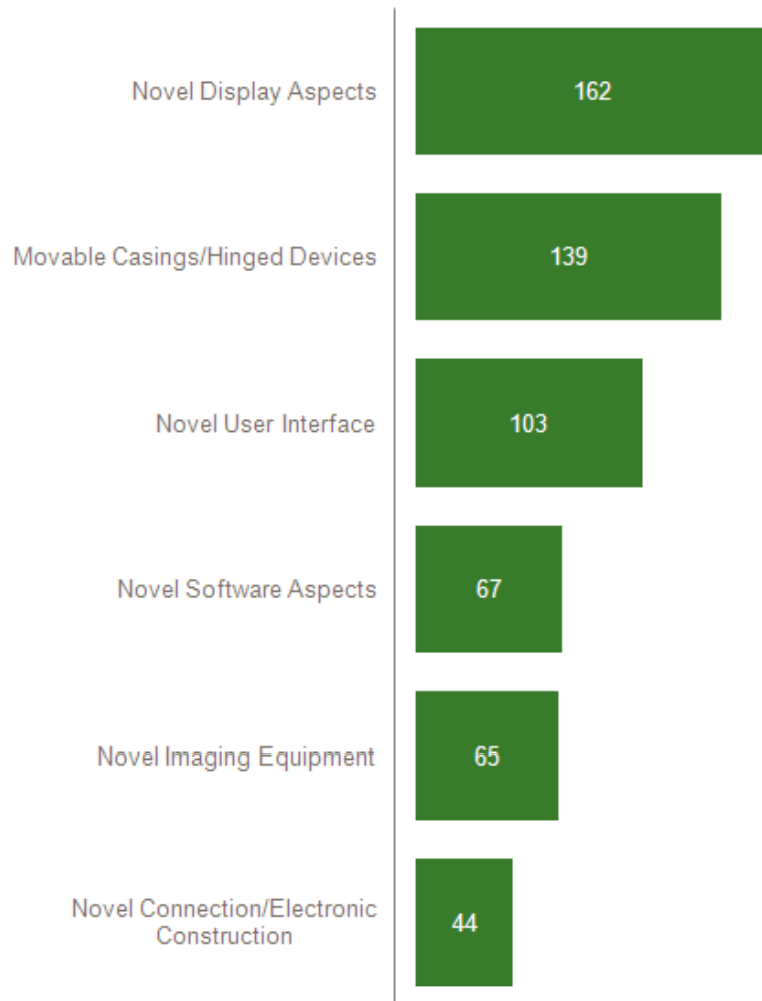
- Analysis of Innovation Sources provide intelligence on how fast this is happening in your space
- A review of changes in geographic output highlights markets exhibiting high growth
- Typical movement of technical innovation from western world to the Far East is evident here

Growth by Geographic Source
(2001-2009)



STRUCTURED DATA IS POWERFUL

Landscape by Technical Approach

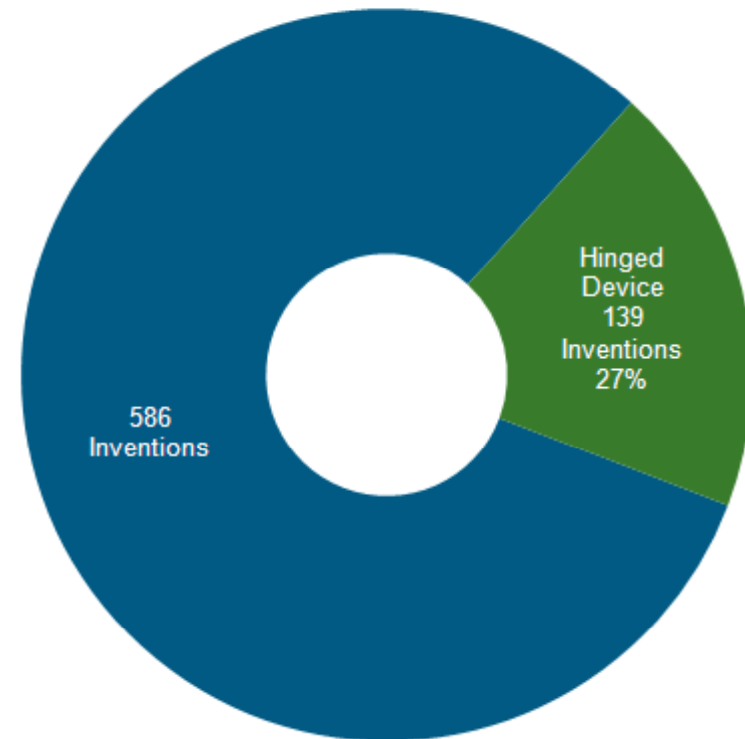


- Reviews of technical items within a landscape requires the creation of bespoke taxonomies
- Created from multiple sources (various patent classifications, natural language, sub-searching)
- Contextualise the landscape into your way of thinking
- Provide a powerful method of uncovering movements and changes in behaviour

OUR INTEREST AS PART OF THE WIDER PICTURE

- Hinged devices makes up only a quarter of the landscape
- While relevant technology evidently exists in the wider technology, this points towards a possible technical niche

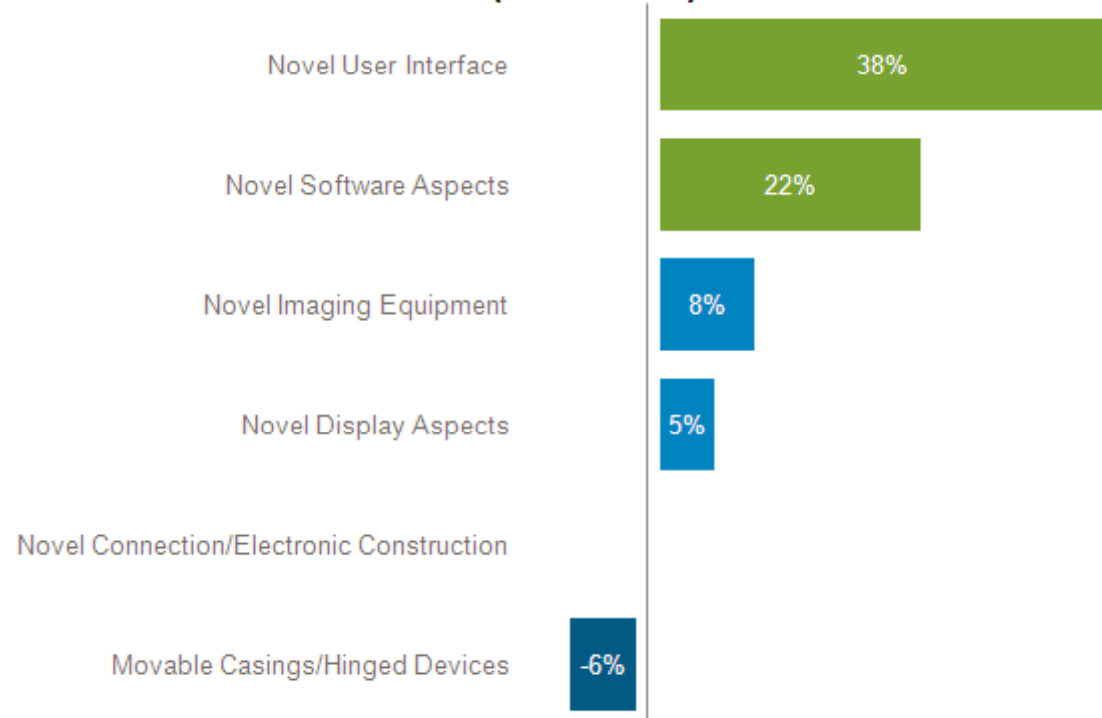
**Hinged Dual or Multiscreen
Devices vs Non-Hinged**



CHANGES IN TECHNOLOGY INFORM STRATEGY

- There is clear movement away from hardware and towards software implementations and user interface methods
- Our field of hinged multi-screen devices is in decline
 - Why? Is there a market, commercial or technical barrier? What have we not considered?
- Requirement for wide technical landscaping is clear – by focusing too early on the specific, the general conclusion is removed

Technology Trends within Landscape (2001-2010)



PATTERNS OF ACTIVITY LIE BENEATH THE HEADLINE

Summary View of Commercial Players
Sorted for Recency of Activity

Leading Entities	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	Total	US/EP Filings
LG							1		7	9	13	13	3	10	7	3	66	15
Samsung								1	2	4	13	15	12	4	4	3	58	42
Nokia	1										2	2				2	7	7
Sony Ericsson				1					2	3		5	9	3	4	1	28	21
AU Optronics									1	3	5	3	3	2	4	1	22	19
Foxconn											2				2	1	5	4
Sharp							1	12	2	4	4	2	3	1	1	1	31	16
Qualcomm										1		1			1	1	4	4
Research in Motion								1	1	1						1	4	4
Kyocera											2		3	3	2		10	4
Microsoft										1	2	1		3	2		9	9
Seiko Epson								4	5	4	7	6	3	2	1		32	10
NEC				1			2	2	1		2	2	2	1	1		14	7
AT&T												2	1	1	1		5	5
Apple												1	2		1		4	4
Motorola Mobility				1		2		1	1	1	1	1	3	1			12	10
Chimei Innolux									3	1	3		1	1			9	8
Toppoly Optoelectronics								1	4		1				1		7	6
IBM						1	1			1					1		4	4
HP	1					2	4				1	1	3				13	12
Springs Designs Inc												3	1				4	3
TPO Displays Corp									3				1				4	4
RITDisplay Corporation									3	1							4	4
SEL								4	2								6	6

- Entities you thought were your competitors may now be just an thing of the past
- Visualisation of time trends can immediately reveal smaller, more niche but rapidly patenting corporations in your space

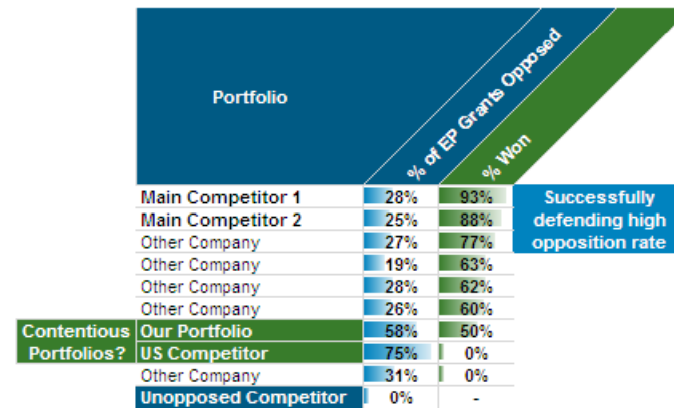
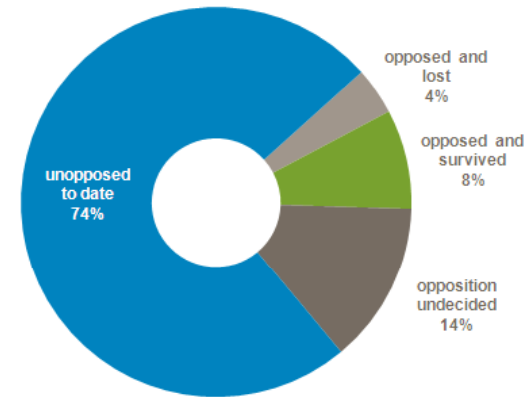
COMMERCIALISATION INTENT CAN BE DIVINED FROM INVESTMENT

- Some patents are filed in more countries than others
- Coverage provides an axis of monetary investment and therefore intent and confidence in a return
- Understanding who is more speculative and who is more committed sorts the wheat from the chaff

Leading Entities	Total	Filing Intensity
SEL	6	6.0
Motorola Mobility	12	3.9
NEC	14	3.9
Qualcomm	4	3.5
Toppoly Optoelectronics	7	3.3
Kyocera	10	3.3
Sony Ericsson	28	3.2
Samsung	58	3.1
Sharp	31	3.1
LG	66	3.0
Nokia	7	2.9
TPO Displays Corp	4	2.7
HP	13	2.7
Springs Designs Inc	4	2.7
Seiko Epson	32	2.6
Foxconn	5	2.3
IBM	4	2.3
Microsoft	9	2.1
Research in Motion	4	2.0
AU Optronics	22	1.8
Chimei Innolux	9	1.8
RITDisplay Corporation	4	1.8
Apple	4	1.5
AT&T	5	1.0

TRACKING CONTENTIOUSNESS AND IDENTIFYING THE SAVVY COMPETITOR

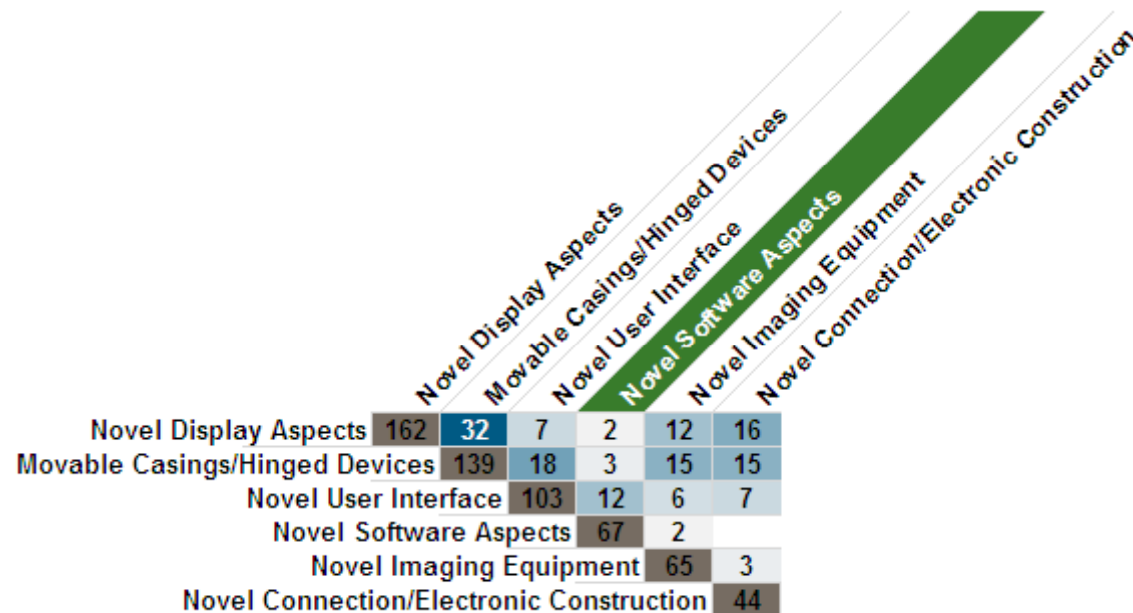
- Litigation is the “nuclear option”
- Tracking softer but still contentious processes such as European Oppositions can provide valuable information
- Tracking success of opposition proceedings provides intelligence on the “IP Savviness” of your competitors
- Tracking the level of opposition informs you of the potential within another’s portfolio

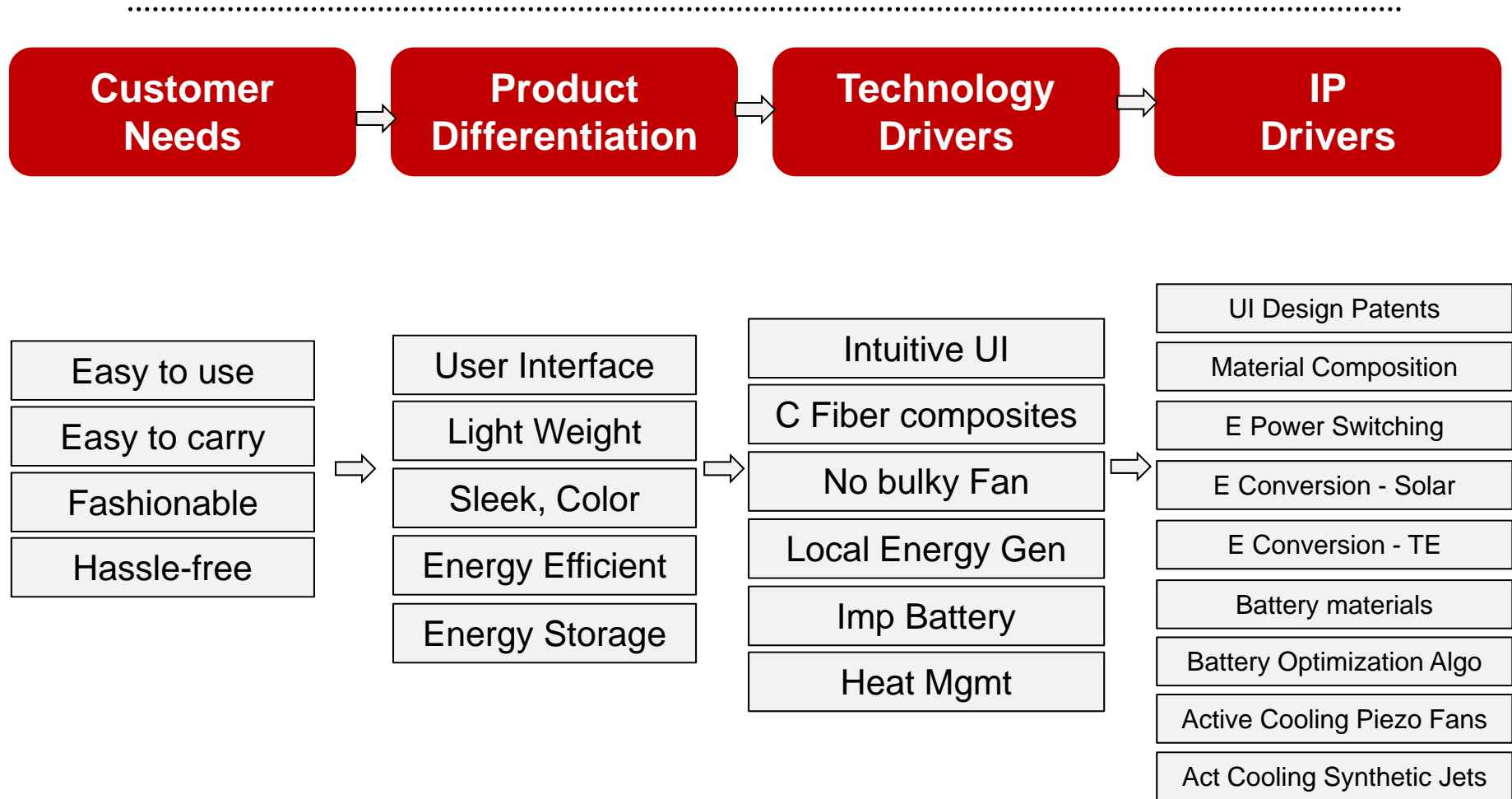


Opposing Entity	98	99	00	01	02	03	04	05	06	07	08	Total Oppositions Filed
Main Competitor 1	1	2	1	3	1		5	2	2	2	3	22
Main Competitor 2	1	3	4	1	4	3	6	5	6	3	2	38
Our Company		1			2		5	1	4	1	2	16
Other Company									1		2	3
Main Competitor 3 - Stopped Opposing?	1	3	1	6	6	5	7	5	5	1	1	41

NO INFORMATION IS SOMETIMES A MAJOR FINDING

- Finding “white space” is hard; but data visualisation can post signs on the road
- We know that software approaches are growing fast
- However, there is a specific technical gap surrounding software or content systems for hinged implementations
- There is another between software and connections





Visualizing IP

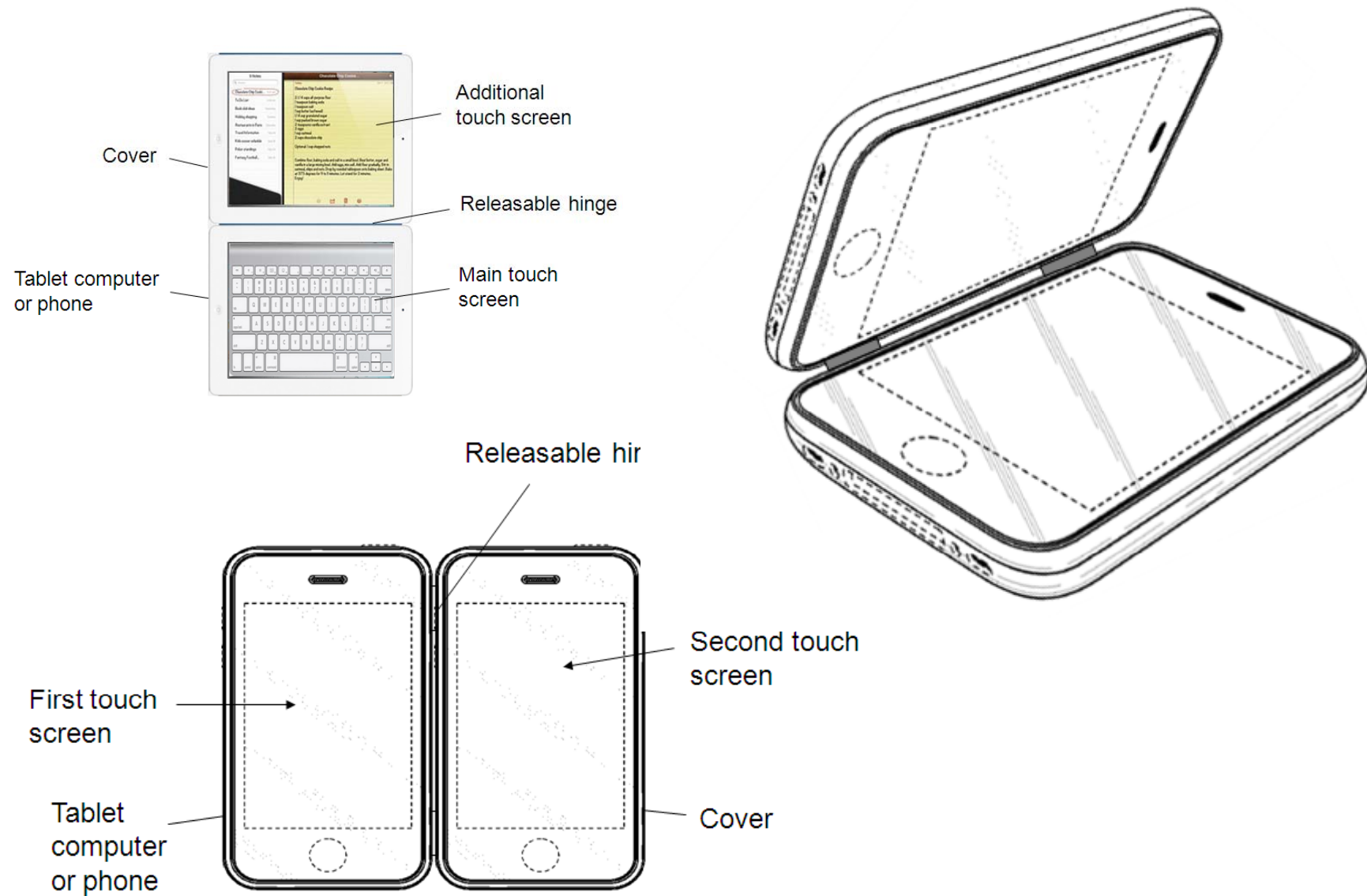
Realizing the IP that we need

New Product - Differentiation

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	Customer Needs	Differentiating Features	IP Status	Value Proposition to Customer

OUR INVENTION



IP Wish List

UI Design Patents
Material Composition
E Power Switching
E Conversion - Solar
E Conversion - TE
Battery materials
Battery Optimization Algo
Active Cooling Piezo Fans
Act Cooling Synthetic Jets

Prior Art Analysis

White Space Analysis

IP Opportunity

High
Low
High
Low
Low
Low
Medium
Low
Low

Realizing IP

Patenting Strategy

IP Opportunity

High	Invention # 1
Low	
High	Invention # 2
Low	
Low	
Low	
Medium	Invention # 3
Low	
Low	



Patentability Analysis



IP Strategy

File patents
File Patents
File Patents

Realizing IP

New Product Ideation

from incremental to disruptive Ideas

	Ideation Triggers	Ideas - Features
S	What can I substitute in my product ?	
C	What can I combine with my product ?	
A	What can I adapt from elsewhere and introduce in my product ?	
M	What do I need to maximize or minimize in my product ?	
P	What can I put to other use in my product ?	
E	What can I eliminate in my product ?	
R	What can I reverse in my product ?	

Patentability

Input: Key Concepts (4 – 5)

- System, Sub-system, Super system levels
- Search strategy
- Novelty & Utility
- Non-obviousness

Next Steps:

- List IP Concern areas
- Brainstorming for alternative concepts

Licensing Strategy

IP Opportunity

High	Patentable Concept # 1
Low	
High	Patentable Concept # 2
Low	
Low	
Low	
Medium	Patentable Concept # 3
Low	
Low	



FTO Analysis

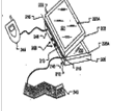
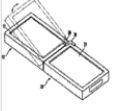
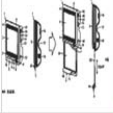


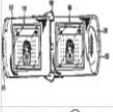
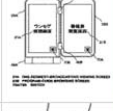
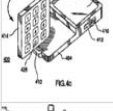
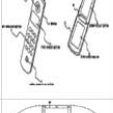
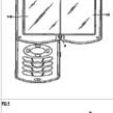
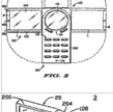

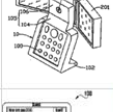
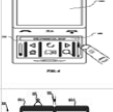
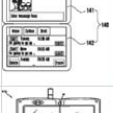
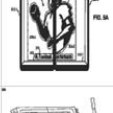
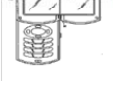



IP Strategy

License-in technology
License-in technology
License-in technology
License-in technology
License-in technology
License-in technology

Realizing IP

EXPENSIVE PATENTS PROVIDE A READING LIST

Patent Number	Entity	Front Page Image	Filing Intensity	Patent Number	Entity	Front Page Image	Filing Intensity
US20070120762A1	HP		5	US20090091512A1	Samsung		3
WO2006051669A1	Sharp		5	US20050052835A1	AU Optronics		2
WO2002044878A1	HP		4	US20060159443A1	Samsung		2
WO2010114007A1	NEC		4	EP1617630A1	Research in Motion		2
GB2328343A	NEC		3	US20080204356A1	Samsung		2
EP1432216A1	Motorola Mobility		3	WO2011117460A1	Nokia		2
US20060152433A1	Foxconn		3	EP2362292A1	Research in Motion		2
US20110193806A1	Samsung		3	WO2011057271A1	Qualcomm		2
US20080224949A1	Samsung		3	US20090061930A1	HP		1

- Individual patent documents can be ranked or shortlisted by:
 - Applicant
 - Result of relevancy review
 - Strategic nature/filing intensity
 - Strength measurements

Freedom to Operate / Practice

Input: Clearly articulated concepts + Relevant Patents

- Product – Patent Mapping
- Features – Claims mapping
- Who owns what IP?

Next Steps:

- Explore licensing-in options
- Brainstorming for “designing around”

IP Wish List

UI Design Patents
Material Composition
E Power Switching
E Conversion - Solar
E Conversion - TE
Battery materials
Battery Optimization Algo
Active Cooling Piezo Fans
Act Cooling Synthetic Jets

IP Opportunity

High
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High
Low
Low
Low
Medium
Low
Low

IP Strategy

File patents
License-in technology
File Patents
License-in technology
License-in technology
License-in technology
File Patents
License-in technology
License-in technology

Realizing IP

Navigating in crowded IP waters

Navigating

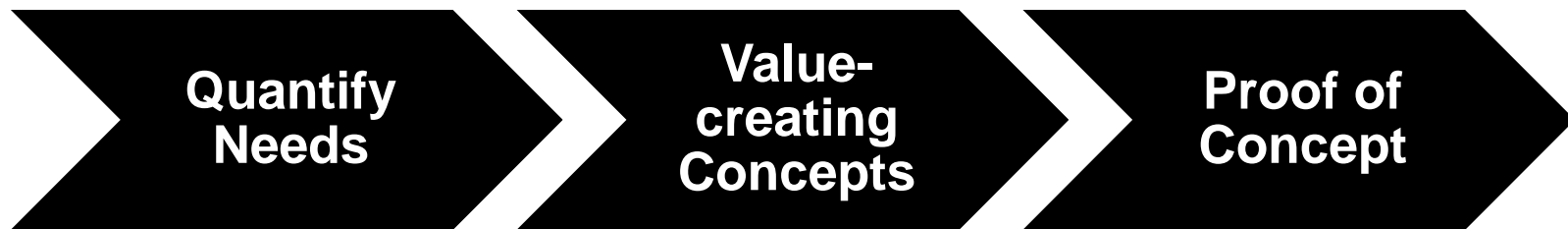
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Visualizing

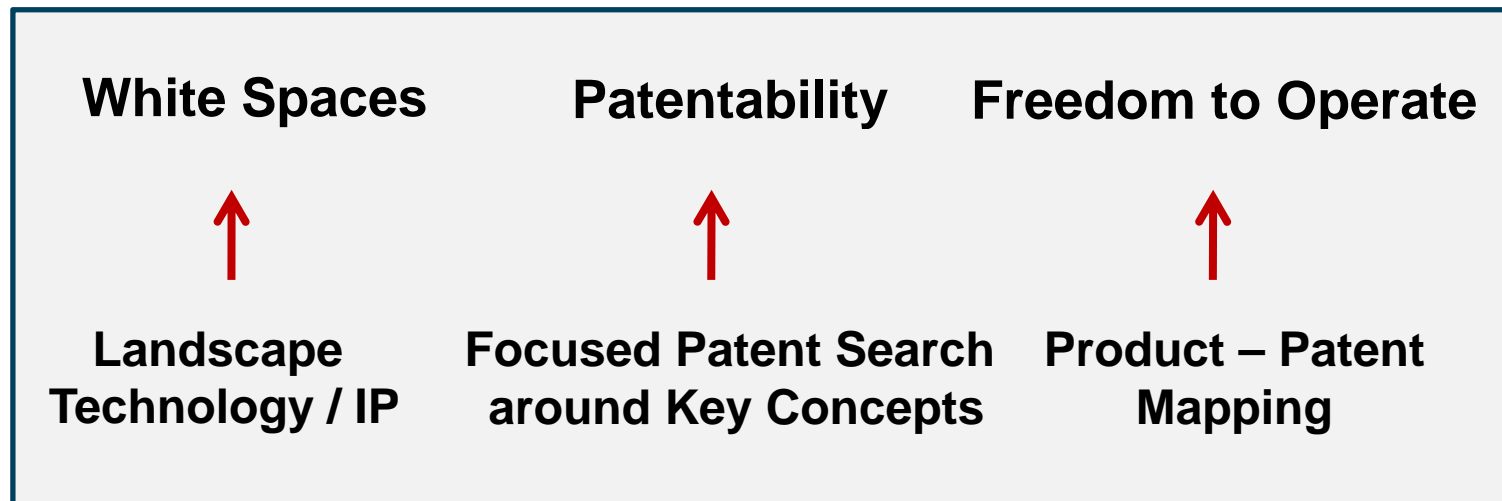
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Realizing

New Product Ideation

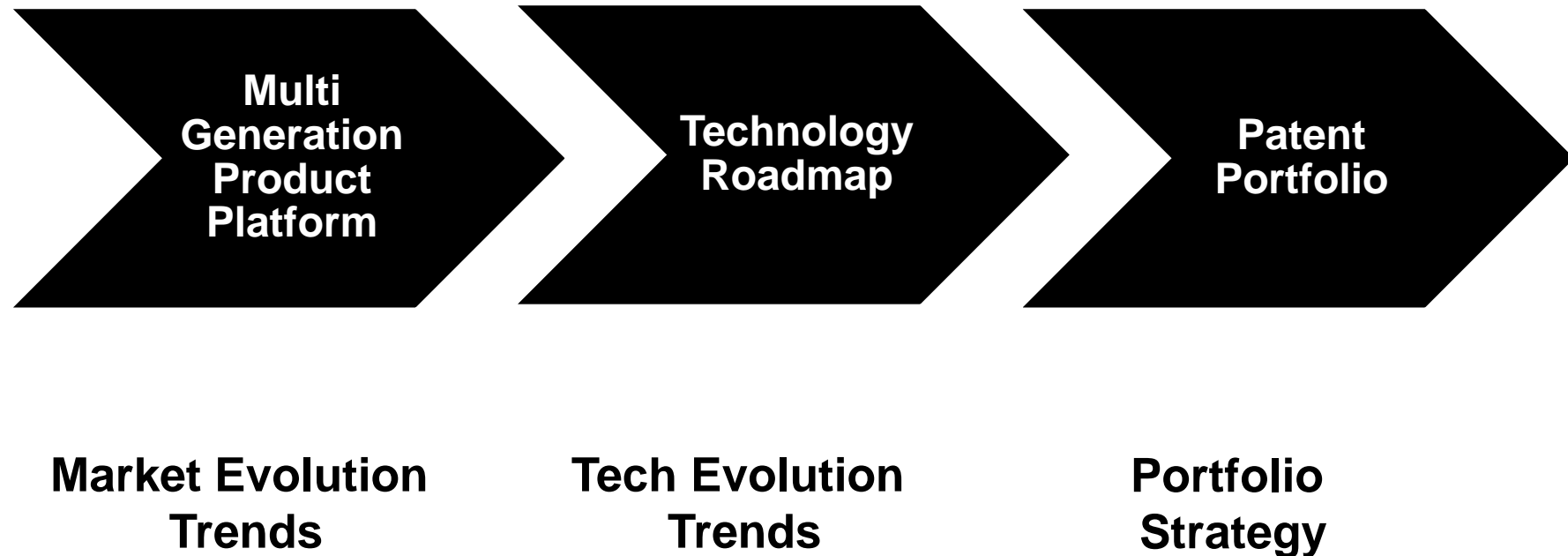


**Key IP
Inputs**



IP Strategy

Multi-Gen Product Platform



NEXT STEPS AND QUESTIONS

- The process doesn't stop here
 - What would you do next?
 - How does the process differ from client to client?
 - How does the process differ across different markets – emerging vs developed economies?
 - What are the effects of changing IP law?
 - America Invents Act