Patent Portfolios, IP Strategies for Spin-Offs

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Getting Value from Patent Portfolios
What was the reason of the sudden hype for 3D printing in 2015?

- Critical 3D printing patent expired between 2013 and 2015
- At this time, 3D printing technology was already more than 10 years old
- However, it was impossible for small companies to acquire licenses for critical patents from a large number of license holders
- There was no market place for a comprehensive license package
- So patent owners were not able to create a significant income from their patents
Have you watched a video in your web browser recently?

If yes, it is likely you have used the MPEG-4 compression standard. MPEG-4 is a video compression standard developed by a consortium of 32 companies.

The Complexity of the MPEG-4 Video Compression Standard:
• Spatial and temporal sampling
• Colour spaces
• Quality measurement
• Block-based motion estimation
• Motion compensation
• Discrete cosine transform (DCT)
• Predictive coding, variable-length coding
• Arithmetic coding
• Quantisation
• Zero encoding
• …
Can you imagine negotiating license agreements with each individual MPEG-4 contributor? MPEG-4 would have failed like 3D printing.

British Telecommunications plc  
KDDI Corporation  
Robert Bosch GmbH  
Calmare Therapeutics Incorporated  
JVCKENWOOD Corporation  
Samsung Electronics Co., Ltd.  
CableTelevision Laboratories, Inc.  
Koninklijke Philips N.V.  
SANYO Electric Co., Ltd.  
Canon Inc.  
LG Electronics Inc.  
Sharp Corporation
Microsoft Corporation
Siemens AG
Dolby International AB
Mitsubishi Electric Corporation
Sony Corporation
Dolby Laboratories Licensing Corporation
Nippon Telegraph and Telephone Corporation
Sun Patent Trust
Fujitsu Limited
Oki Electric Industry Co., Ltd.
Telenor ASA
GE Technology Development, Inc.
Orange SA
Toshiba Corporation
Google LLC
Panasonic Corporation
ZTE Corporation
Hitachi, Ltd.
Pantech Inc.
MPEG LA was founded to address the biggest challenge to adoption of the MPEG-2 codec: the efficient access to essential patents owned by many patent owners.

MPEG LA licenses patent pools covering essential patents required for use of the MPEG-2, MPEG-4, IEEE 1394, VC-1, ATSC, MVC, MPEG-2 Systems, AVC/H.264 and HEVC and DisplayPort standards.

Example: DisplayPort license which is USD 0.20 per DisplayPort product.
Hard Disks

1956
5 MB

2004
4 GB

2021
18 TB
Georg Papst had to sell the company his father had founded.
And he did what nobody understood: He bought back the entire patent portfolio.
Because he knew its value.
He then relentlessly requested licenses from all hard disk manufacturers who – without exception – needed to use the patented technology and enforced his right by all legal means.
What can we learn from these examples?

- A patent portfolio has a monetary value
- But it can only be monetized if there is a combined and single licensing business model
- Patent portfolios can be monetized through:
  - licensing
  - selling parts or the entire portfolio
  - equipping start-ups with valuable IP
• Nathan Myhrvold, founder of Intellectual Ventures, explains everything you need to know about patent portfolios.
• Today, Intellectual Ventures is the organisation with the largest patent portfolio in the world.
A patent portfolio is worth more than the sum of its patents

- Because of the large number of patents, a patent portfolio cannot circumvented
- Even if a number of patents expire, are declared invalid or become obsolete, a patent portfolio can keep its value when properly maintained
Averaging Risks

- Only very few patents are valuable
- We never know which patents will end up being big winners
- Insurance companies routinely deal with low probabilities of high-payout events
- Trying to sell individual patents is a waste of time
How to design patent portfolios?

- Choose a growth industry
- Patent portfolio should cover an entire value chain
- Develop a suitable business for the licenses
- Establish a licensing sales channel
Patent Portfolios are Financial Instruments

By investing in a patent portfolio its value can be increased through:

- The purchase of patents
- Development of in-house inventions
- The commissioning of contract inventions
- License agreements
Why have patent funds failed in Europe?

- They used professional patent valuation
- But they mainly relied on individual patents
- There was no portfolio strategy
Technology Transfer in Universities

- Technology transfer offices should think in terms of patent portfolios,
- identify gaps in the patent literature
- and pro-actively commission contract inventions
Towards an Innovation Economy

- SMEs should think in terms of patent portfolios as a source of income (contract invention)
- Universities should create value through strategically developing patent portfolios (commission inventions)
- We should seriously consider establishing a European patent fund
  - Protein synthesis
  - Trust architecture
  - Bee-keeping technologies
IP and Spin-Offs
- Many future founders delay their innovation activities, to avoid lengthy and expensive negotiations with TTOs
- Negotiations with Technology Transfer Offices
Software Patents vs. Computer-implemented inventions

Computer Implemented Inventions:
- Automation/ process control,
- Data and signal processing,
- Applied algorithms (AI, NN),
- Data storage/retrieval,
- Data communication,
- Distributed systems,
- Technical means for presentation of information,
- Security, e.g. data security,
- Computer implemented business methods.
Freedom to Operate
FREEDOM TO OPERATE

- Freedom to operate (FTO) is the ability to proceed with research, development and commercialization of a product,
- while fully accounting for any potential risks of infringing activity,
- i.e., whether a product can be made, used, sold, offered for sale, or exported,
- with a minimal risk of infringing the unlicensed intellectual property rights (IPR) or tangible property rights (TPR) of others.

FTO determination is practiced in three stages:
1. Gathering information about the invention to be searched and plans for using it (identifying information needs).
2. Searching the published patent literature to find potentially relevant patent documents (FTO search).
3. Analyzing the claim scope and legal status of patents identified in the FTO search (FTO analysis) to evaluate what patent rights exist that might impact the freedom to use the invention as planned.
Example of IPR-free Cloud Business Models

Image analysis services:

- Users send their images to be analysed and receive results online
- No object code can be accessed or re-engineered
- Data and code never leaves the secured server
- Company does not file patent applications

Keeping your algorithms secret does not guarantee freedom to operate.
Patent Strategies
HP has used the consumables business models for a while. But they got annoyed by third party manufacturers producing cheaper, compatible cartridges.

So what was HP's strategy with the "Officejet pro 8620"?

Add a function that nobody needs: Lock a cartridge to a particular printer. This can only be achieved by a small chip in each cartridge.

Yes, this is a patent-worthy invention:

1. Commercially applicable
2. New
3. Exceeding the state of the art, involving an innovative step

And there you have it: only HP can produce, market, ship and sell this cartridge.
Filing a patent in one afternoon:

We came up with a unique solution for a computer vision application in an extremely tight space.

One day before visiting a potential client to present this solution for the monitoring of a "smoking machine" we learned that a competitor may also visit the company and we were afraid that they learned about our solution or that the client commissioned our competitor with the development of a solution with our invention.

So we drafted and filed a patent in one afternoon!
I was working as a product manager in a company focusing on video-based solutions for counting persons.

One day I got a phone call: "We are a large organizer of trade fairs. Do you have a solution for counting the number of visitors in each trade fair hall?"

I worked out a solution that was pretty accurate with a sensor at each door and wrote a commercial offer.

After a while the client came back to me: Sorry, we don't want to know the number of visitors,. I we knew when our halls are overcrowded we would be legally obliged to evacuate them. So we prefer not to know.
Innovation barriers
Doing image analysis on images taken in adverse lighting conditions leads to random results. Responding to a client request I developed a solution using a laser scanner, rather than an image sensor. The reaction of the founder and CEO: No, we are a video company!
Patent literature is a treasure trove of ideas and inventions. Many engineers waste time and resources reinventing the wheel.
“Thank you for telling us about the patent we didn’t know we own.”

A company that asked me to support their development of a new drive technology for a handheld device did not know that they had a patent about a new drive technology.

“Thank you for telling us about the patent we didn’t know we own.”
Paying out bonuses for employees may have side effects:

- Your employees stop doing everything else but drafting patents

But the real problem starts when you cancel the bonus programme:

- No patents are written any more
Eliminate numerical quotas, including Management by Objectives.

W. Edwards Deming
Innovation theatre

How to spot Innovation Theatre:
- Motivational Posters
- The sales department has the monopoly for innovation
- Unsuitable processes
- Brainstorming
- "Design Thinking"
- Idea competitions
- ...

Wait, there is more:
- Process theatre
- Energy theatre
- Sustainability theatre
- “Agile” theatre
Culture eats strategy for breakfast.

Peter Drucker
Some random recommendations

- Develop an IP strategy!
- Use public research and innovation funding to cover your patent costs.
- Know your own IP!
- Make sure you have a current proof of freedom-to-operate (FTO).
- Develop a culture of innovation!
- Develop patent portfolios and licensing strategies.
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