Securing and Enforcing Intellectual Property Rights for IoT and IoS Innovations

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Overview

• Introduction to U.S. Intellectual Property Rights
  • What is Intellectual Property (IP)?
  • IP Rights and Forms of Protection

• Patenting and Enforcement of IoT and IoS Innovations
  • IoT Patent Statistics and Trends
  • Where can I enforce a U.S. Patent?
  • Inventors

• Implementing an IP Strategy (Example)
What is Intellectual Property (IP)?
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1. “property” – refers to tangible things (real/personal) with rights/interests owned by a person or entity – tangible assets

2. “intellectual property” – refers to creations of the mind for which a set of rights are recognized under the applicable laws – intangible assets
# Types of Intellectual Property

## Patents
- Process
- Device or System
- Improvement
- Composition of Matter

## Trademarks
- Brand
- Symbol

## Copyrights
- Creative Design
- Original Text
- Source code
- Artwork

## Trade Secrets
- Algorithm
- Formula
- Source code
IP Rights and Forms of Protection
Intellectual Property Provides Protection

• At their core, IP rights are the right to exclude others from doing something
  • e.g., making, selling, labelling, performing, etc.
What is a Patent?

- Legal document that protects ideas
- Granted to inventor and/or assignee
- Powerful form of protection
- Limited to particular region (e.g., the U.S. or Canada)
- Protects against independent development AND reverse engineering
Parts of a Patent

Background/Problem:
"Unfortunately, as known in the art, a 'high five' requires the mutual hand slapping of two participants .... As such, a solitary fan is unable to perform a 'high five' to express excitement during a televised sporting event."

Description: In operation, the lower arm portion 20 is pivotally displaced about the elbow joint 24, towards the horizontal surface 52, in response to the impact of a user's hand against the attached, simulated hand 12, and subsequently returned towards the first stop element 54 by the action of the torsional biasing spring 56.
Parts of a Patent

Claims:

1. An apparatus for simulating a "high five" comprising:
   a first, movable arm portion for simulating a forearm, said first arm portion having a simulated hand secured thereto;
   a second, immovable arm portion for simulating an upper arm....

wherein said first arm portion is adapted to be dislodged from against said stop arrangement, and pivotally displaced about said pivot member along said single plane, when said simulated hand is struck by a user, said biasing element subsequently biasing said first arm portion towards and against said stop arrangement, thereby reestablishing said predetermined alignment.
Patent Protection

- Requirements for patentability
  - Novelty
  - Utility (subject matter eligibility)
  - Non-obviousness
  - Disclosure

Requirements for Patentability

- Novelty
- Utility
- Non-obviousness
- Disclosure
Patent Protection

- **Forms of patent protection**
  2. **U.S. Design Patent**
  3. **PCT Application**
  4. **Ex-U.S. Application**
Patent Examples

- **Process**
  - U.S. 8,016,240 – method of deploying a satellite fleet, including use of a launch vehicle with multiple satellites in a payload

- **Device**
  - U.S. 6,394,395 – combination solar panel and planar array antenna for a satellite

- **Composition of Matter**
  - U.S. 6,689,474 – a resorcinol polyester chain member with a thermal stabilizer

- **System**
  - U.S. 5,633,644 – system for monitoring ship traffic with a plurality of earth-orbiting satellites and a data processing center in communication with the satellites

- **Method of Manufacture**
  - U.S. 6,037,032 – method of molding a carbon-foam heat sink to prevent overheating of satellite during cyclic orbits
Trade Secret Protection

- Protection for confidential business information
- Includes:
  - Formulas (e.g., Coke)
  - Patterns
  - Devices
  - Compilation of information
  - Algorithms (e.g., Google’s PageRank)
  - Source code
  - Customer lists
  - Business plans
  - Financial data
Trade Secret Protection

- Requirements:
  - (i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and
  - (ii) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.
Trade Secret Protection

- Trade secret rights *protect against*:
  1. Misappropriation
  2. Those who improperly derive
     (e.g., theft, bribery, misrepresentation, breach or inducement of a breach of a duty to maintain secrecy, or espionage through electronic or other means)

- Trade secret rights *do not protect against*:
  1. Reverse engineering
  2. Independent development
Trademark

- Identifies source or origin of goods/services
- Trademark rights are created through:
  - Good faith adoption and use
  - Benefits of registration
  - Country by country
- Difference between ™ and ®
Trademark

- Types of trademarks
  - Arbitrary
  - Fanciful
  - Suggestive
  - Descriptive
- Generic terms
Copyright

- Protects *expression* of ideas
- Copyright rights granted to author/employer

Includes:
- Label designs
- Pictorial, graphic, sculptural works
- Literary works
- Motion pictures, audiovisual works
- Sound recordings
- Derivative works
Copyright

- **Requirements:**
  1. Author created the work
  2. Established immediately from the time the work is created in fixed form

- Copyright protection provides **exclusive rights to:**
  - Reproduce the work
  - Prepare derivative works
  - Distribute copies of the work
  - Display the work
  - Perform the work
Patenting and Enforcement of IoT and IoS Innovations
Internet of Things Patents

- Almost 22,000 IoT patents were published between 2004-2013, with China, USA and Korea as the most common originating country
- More than 7,000 assignees and nearly 18,000 inventors
- Leading filers include LG, Samsung, Ericsson, Qualcomm, Sony, ZTE, Huawei, IBM, Microsoft

Internet of Things Patents – U.S.

Transaction of patent rights (e.g., sale) following a similar pattern

Larger companies have acquired hundreds of IoT patents

Internet of Things Patents – Patenting Obstacles

- Cannot patent “abstract ideas”
  - The “§ 101” issue
  - Field?
- U.S. Patent Office’s evolving position
  - New case law
  - New guidance to Patent Examiners

Source: LexInnova for WIPO, “Internet of Things – Patent Landscape Analysis”
Jurisdiction for Enforcement of U.S. Patents

35 U.S.C. §105:
(a) Any invention made, used or sold in outer space on a space object or component thereof under the jurisdiction or control of the United States shall be considered to be made, used or sold within the United States for the purposes of this title, except with respect to any space object or component thereof that is specifically identified and otherwise provided for by an international agreement to which the United States is a party, or with respect to any space object or component thereof that is carried on the registry of a foreign state in accordance with the Convention on Registration of Objects Launched into Outer Space.
Jurisdiction for Enforcement of U.S. Patents

35 U.S.C. §105 (cont’d):

(b) Any invention made, used or sold in outer space on a space object or component thereof that is carried on the registry of a foreign state in accordance with the Convention on Registration of Objects Launched into Outer Space, shall be considered to be made, used or sold within the United States for the purposes of this title if specifically so agreed in an international agreement between the United States and the state of registry.
Jurisdiction for Enforcement of U.S. Patents

- **NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282 (Fed.Cir.2005)**
  - “The use of a claimed system under section 271(a) is the place at which the system as a whole is put into service, i.e., the place where control of the system is exercised and beneficial use of the system obtained.”
  - [C]ustomers located within the United States controlled the transmission of the originated information and also benefited from such an exchange of information. Thus, the location of the Relay in Canada did not … preclude infringement of the asserted system claims in this case.
Who is an “inventor” for this patent?

- An inventor is a person who conceived the patented invention (i.e., device, method, etc.)
- Each inventor who generally contributes to the conception must apply for the patent jointly.
- Even if:
  1. they did not physically work together or at the same time,
  2. each did not make the same type or amount or contribution, and/or
  3. each did not make a contribution to the subject matter of every claim
Collaborators are not necessarily inventors…

- Working under the direction and control of an inventor and carrying out tasks primarily based on application of ordinary skill in the art will not establish joint inventorship.
  - One may not qualify as a joint inventor by merely assisting the actual inventor after conception of the claimed invention.

- This is important because a patent is invalid if more or less than the true inventors are named
Implementing an IP Strategy
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- Step 1 – Develop/implement IP policies/procedures
- Step 2 – Develop strategy for IP protection/FTO
- Step 3 – Secure IP rights/FTO clearances/opinions
- Step 4 – Negotiate/execute agreements/licenses
- Step 5 – Develop strategy for enforcement/defense

- Ongoing process
- Product/technology development lifecycle
Implementing an IP Strategy

IoT meets IoS Example:
Implementing an IP Strategy

Step 1 – Develop/implement IP policies/procedures
- Employment/IP agreements with employees
- Agreement with third parties/developers
- Confidentiality/non-disclosure agreements
- Record-keeping and identifying ideas, inventions, designs, etc.
- Keep all developments secret
Implementing an IP Strategy

- Step 2 – Develop strategy for IP protection
  - Consider idea, product, process, brand, name, design, logo, tagline, etc. and different forms of IP protection
  - Consider protecting product composition, process, equipment
    - Patent or trade secret
  - Consider protecting brand, name, packaging, logo, design
    - Trademark or copyright
Implementing an IP Strategy

- Step 3 – Secure IP rights/FTO clearances/opinions
  - Perform clearance/FTO searches and consider opinions re: product, process, equipment, brand, name, packaging, logo, design
  - Prepare and file applications for patent, trademark, copyright
  - Prepare schedule of IP assets, including trade secrets
Implementing an IP Strategy

- **Step 4 – Negotiate/execute agreements/licenses**
  - Confidentiality/non-disclosure agreements with TPs
  - Product/prototype evaluation agreements with TPs
  - IP licensing agreements
    - Marking requirements
    - Quality control
    - Indemnification/limitation of liability
  - Manufacturing/distribution/reseller agreements
  - Agreements with private label manufacturers
    - IP ownership and exclusivity
Implementing an IP Strategy

- Step 5 – Develop strategy for enforcement/defense
  - IP investigation
    - Infringement, validity, enforceability, unfair competition
  - Explore options for enforcement, defense, licensing, other business arrangements
  - Contact potential infringer/IP owner
  - Initiate litigation (D/C, ITC, PTO)
  - ADR options
Thank you!

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