Writing Strong Patent Applications in China

Andy Booth
Head of Patents
Dyson Technology Limited
My role

- Secure and maintain intellectual property rights for the IP created within the Dyson business

- Since 2010, used in over 60 infringement actions in China

- The “blacksmith” of the IP profession
PREPARE FOR LITIGATION

WHAT THIS MEANS FOR OUR BLACKSMITH

Know what attacks could be made against your patent

Understand what you can do – post grant – to counter those attacks

Prepare the application accordingly

EFFECTS:

Avoid all attacks that you could have reasonably foreseen

Maximise the chance that the knight will still have a weapon to use against the infringer
Grounds of attack that our blacksmith should take into account are:

- Lack of novelty or inventive step
- Unpatentable subject matter
- Insufficient description
- Claims not supported by the description
- Claims not clear and concise
- Claims lack essential features
- Claims do not define the invention in terms of its technical features

- All are objections that a European patent application could expect to attract during pre-grant examination
Writing patent applications - Tip Number 2

- START OFF AS IF YOU WERE WRITING A EUROPEAN PATENT APPLICATION

WHAT THIS MEANS FOR OUR BLACKSMITH

- Business as usual – it is what he is trained to do

- EFFECTS:
  - Aside for objections based on newly cited art, should receive no other post-grant objections that should trouble him
The Post Grant Attack - What can you do?

- Argue against the objections
- Combine existing claims (only with the first response)
- Delete claims
- Delete alternatives within a claim
- **NEW CLAIMS CANNOT BE ADDED**
- **CLAIMS CANNOT BE AMENDED TO INCLUDE FEATURES FROM THE DESCRIPTION**
DEPENDENT CLAIMS ARE KEY

WHAT THIS MEANS FOR OUR BLACKSMITH

- Work with the inventor to identify all viable fallback positions, including alternatives

- Recite them in respective dependent claims, and provide support in the description

EFFECTS:
- Likely to increase filing costs in view of excess claims fees
- But still a relatively small increase in comparison to the costs of litigation
Earlier Actions – What to Expect

- **PATENT APPLICATION** = Office Action
- **UTILITY MODEL** = Evaluation Report

What objections can be raised? – all of the same objections that could be raised in an **Invalidation Request**. Our blacksmith is most likely to see novelty and obviousness objections based on new prior art.

Those annoying objections:
- “those skilled in the art can easily think of providing FEATURE A without any creative labors, which belong to general technical means”;
- “those skilled in the art can easily design the form of FEATURE B according to practical requirements, without any creative labors, which belongs to a general choice and technical means”
Earlier Actions – What can you do?

- **Office Action** – address the issues raised by the Examiner. This may include:
  - Argue against the objections
  - Combine existing claims
  - Delete claims
  - Delete alternatives within a claim
  - Add a feature into Claim 1 from the description (but our blacksmith shouldn’t need to – see Tip 3)
  - **NEW CLAIMS CANNOT BE ADDED**

- **Evaluation Report** – ARGUE. NOTHING ELSE.

Can you make the Examiner change his mind?
GET YOUR ARGUMENTS IN FIRST

WHAT THIS MEANS FOR OUR BLACKSMITH

- In the Summary of Invention, provide an explanation of the advantages provided by each and every one of the claims

- In the Detailed Description, provide evidence – graphs, tables – which support the benefit of claimed parameters

- Be critical – remove anything that does not help you

EFFECTS:
- Can improve your chances of receiving a positive Evaluation Report / early allowance
A Formalities Examination report will identify defects in the patent/utility model application.

There are a few things that our blacksmith can do when preparing the application to avoid such a report.

- There are some “tricks” that our blacksmith will use to reduce the number of claims of a European patent application, which will not work for him in China.
Writing patent applications – A few more tips

- DEPENDENT CLAIMS SHOULD DEPEND FROM A SINGLE INDEPENDENT CLAIM ONLY
- NO “PREFERABLE” FEATURES IN ANY CLAIMS
- NO TERMS SUCH AS “APPROXIMATELY” OR “GENERALLY” IN ANY CLAIMS
- A MULTIPLE DEPENDENT CLAIM CANNOT DEPEND FROM ANOTHER MULTIPLE DEPENDENT CLAIM
BEAR ALL THIS IN MIND WHEN YOU PREPARE YOUR PRIORITY APPLICATION

WHAT THIS MEANS FOR OUR BLACKSMITH

• Most of his effort is put into preparing the priority application – when the invention has to be fully understood

• Addressing at least Tips 1 to 4 can be done then

• EFFECTS:
  • No issues with the priority claim
  • Inventors are still available – can be much harder to engage with them 12 months later
LEARN FROM FAILURES

WHAT THIS MEANS FOR OUR BLACKSMITH

- The blacksmith learns the most from chipped or broken swords. What could have been done better?

- Don’t just look at your own cases. Learn from others.

EFFECTS:

- Constant improvement to produce stronger patents
- Can just the sight of your sword scare people away?
THANK YOU!
Outline

• A broken sword – “little iBot case”
  • Overview
  • Patent Drafting
  • Patent Prosecution
  • Decisions of PRB and First instance Court
  • Decision of Second court
  • Summary
Shanghai Zhizhen sued Apple in June 2012, alleging Siri infringing “little iBot” patent

“little iBot” patent was invalidated by appeal court in 2015
Claim 1:
A chat robot system, at least comprising:

- A user;
- A chat robot having a communication module, a query server and a corresponding database, and a game server,

characterized in that the chat robot further has an artificial intelligence server with a certain artificial intelligence and a powerful information serving functionality and corresponding databases, the user chats with the chat robot via an instant messaging (IM) platform or a short message service (SMS) platform.
Claim 1 issues

- “user” defined in claim 1
- adds-on feature of “query server” and “game server” in independent claims
- vague terms such as “certain” and “powerful”

Specification issues

- Objects of the invention in a same paragraph
- Lack of details in description regarding “game server”
Patent Prosecution

1\textsuperscript{st} office action
- Examiner alleged inventive step over JP2000-339314
- Patentee argued that “query server” and “game server” are distinctive features over prior art and emphasized the technical problems solved by two servers

2\textsuperscript{nd} and 3\textsuperscript{rd} office action
- Examiner alleged claim 1 lack of essential features of “filter”
- Patentee first argued and then added “filter”
Patent Prosecution

- Claim 1:
  - A chat robot system, at least comprising:
    - a user; and
    - a chat robot having an artificial intelligence server with artificial intelligence and information serving functionality and corresponding databases, the chat robot further having a communication module, the user chats with the chat robot via an instant messaging (IM) platform or a short message service (SMS) platform, characterized in that the chat robot further has a query server and a corresponding database, and a game server, and the chat robot is configured with a filter for identifying whether a user language received from the communication module is a format language or a natural language, and transfers the user language to respective servers comprising the artificial intelligence server, the query server or the game server based on the identification result.
Patent Prosecution

IM or SMS
User

Game server

AI server

Chat module

Query module

Comm Module

Filter

Chat DB

Info DB

Robot server

Query server
PRB and First instance case

• **Insufficient disclosure**
  - Gaming functionality
  - how to distinguish between format language and natural language
  - how to expand chat database via network learning
  - how to achieve target searching and how to simulate human-like chat by searching the chat database

• **Lack of Clarity**
  Two modules handling natural language and format language send two kinds of results to three database, respectively

• **Lack of Support**
  Game sever receiving
PRB and First instance case

PRB and Beijing 1st intermediate court

• 1. Gaming functionality is an adds-on feature, not essential feature
• 2. Person Ordinary Skilled In The Art (POSITA) can understand that the chat robot system must perform language analysis first and then send the results to the game server
• 3. POSITA can understand how to distinguish between format language and natural language; how to expand chat database via network learning, how to achieve target searching and how to simulate human-like chat by searching the chat database
Second instance case

Beijing High Court

- Gaming functionality is not sufficiently disclosed
  - Query server and game server were identified distinctive features over prior arts during prosecution, therefore gaming functionality is an essential feature
  - Specification does not describe how the game server connects and interacts with other components of the chat robot
- Other features of concern are sufficiently disclosed
Second instance case

Beijing High Court
Q: Whether feature A is sufficient disclosed

Distinctive feature over prior Art?  

Indispensable feature for solving problem?

Yes

At least provide sufficient guidance to lead POSITA to obtain corresponding knowledge to implement the invention

No

POSITA can understand and implement

Yes

No
Summary

▪ Avoid describing technical problems to be solved by the invention in one paragraph in drafting
▪ More details for secondary features
▪ More structural features, less functional features
▪ Avoid identifying distinctive features solving different technical problems during prosecution
▪ Determining ability of POSITA during prosecution
THANKS AND HAPPY SWING

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Writing Strong Patents
- Enforcability Perspective
Outline

- Patent Portfolio Optimization
- Subject Matter Selection
- Clarity Issue and Enforceability
- Clarity Issue and Claim Construction
- Functional Features
Patent Portfolio Optimization

- Building Optimized Patent Portfolio with Full Spectrum of Patents

**Invention Patent**
- Structure
- Compound
- Method
- Use
  - 20 years
  - Substantial Examination

**Utility Model**
- Structure
- Shape
  - 10 years
  - Formal Check

**Design Patent**
- Design of Industrial Product
  - 10 years
  - Formal Check

Still a blind side for many multinational companies

Importance has been attached to Design after Apple v. Samsung
Patent Portfolio Optimization

Invention Patent

Utility Model
**Patent Portfolio Optimization**

**Valid Patents (Apr. 2015)**
- Utility Model: 2392006 (65%)
- Invention: 1270789 (35%)

More valid UMs than valid inventions

**Involvement in Infringement Lawsuits (2001-2013)**
- Invention: 37%
- Utility Model: 63%

**Involvement Ratio in different IP activities**

<table>
<thead>
<tr>
<th>Involvement</th>
<th>Invalidation</th>
<th>Patent Pledge</th>
<th>Licensing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utility Models</td>
<td>46.13%</td>
<td>54.7%</td>
<td>54.9%</td>
</tr>
<tr>
<td>Inventions</td>
<td>14.22%</td>
<td>41.4%</td>
<td>29.0%</td>
</tr>
<tr>
<td>Designs</td>
<td>39.65%</td>
<td>3.8%</td>
<td>16.1%</td>
</tr>
</tbody>
</table>

Table 1: Various types of patents utilized for litigation, pledge, and licensing.
Patent Portfolio Optimization

- **Successful Case: Dyson**
  - Invention
  - Utility Model
  - Design
  - Lawsuits based on patents covering Inventions, Utility Models and Designs in China

- **Case in contrast**
  - **Technique Owner**
    - Software Registration
    - Several invention patents
      - (Inspecting method)
    - No Utility Model at all
  - **Copy Cat**
    - Software Registration
    - 5 invention Patents
    - 10 Utility Models
      - (1 pending litigation)
Subject Matter Selection

- Choosing Subject Matters with Consideration of Potential Infringement

**Product Claims v Method Claims**
- Discovering infringement ---- Easier
- Evidence collection ---- Easier
- Infringement analysis ---- More Straightforward
- Establishing damages ---- Easier
Subject Matter Selection

- ‘Product’ selection for product claims
  - a whole product
  - a device comprising 2 or more interacting elements
  - an element carrying the whole technical solution
  - an element partially involving the invention

- Background
  China adopts different position in indirect infringement
  - No statute regulating indirect infringement in the current Patent Law of China;
  - Joint Infringement - Regulated by the Civil Law – Incomplete solution
  - Several ‘breakthrough’ case examples – addressed indirect infringement based on General Principles of the Civil Law.
Subject Matter Selection

**Conditions for Joint Infringement Ruling in China**

- **Joint-infringer** (although no direct infringing act) intentionally induces, encourages, aids or abets others to implement the patent
- **Direct infringement** shall been found and sued, the pre-requisite condition;
- Concerned product shall be a **patent-dedicated product**, rather than a common /general product.

If all the conditions were met, indirect infringer, i.e. components or elements provider, can be sued as joint-infringer together with the direct infringer.
Subject Matter Selection

- **Injection device**
  - Original provider
  - Hospital (purchaser and user)
  - Syringe (1) (Replaceable part)
  - Injection device
  - Supporting device (3)

  **What the infringer is selling**
  - Claiming
    - Injection device
    - Supporting device
    - No syringe

- **Wiper device**
  - Wiper blade
  - Wiper arm

  **What the infringer is selling**
  - Claiming
    - Wiper device
    - Coupling device involving both
    - No wiper arm
Bicycle (a Supreme Court guiding case)
Subject Matter: rear derailleur bracket (8)
Features of claim 1
features of the rear derailleur bracket per se;
adjoining features of the bicycle frame(50);
adjoining features of the rear derailleur(100)

Solutions
Subject Matter (in addition to the normal ones)
the replaceable element - most likely copied by potential infringer
Features
✓ indispensable features of the element
✓ involving features (features provided on the main device or the adjacent elements but having interaction with the indispensable features of the element)
– environmental features about usage
Clarity Issue and Enforceability

- **Clarity issue – jeopardize the enforceability**

  The whole infringement claim could be overruled if the protection scope of the claim cannot be determined due to unclear terms or unclear definition.

  **Supreme Guiding Case**

  Technical feature “the metal web is made of metal wire with **high magnetic permeability**” – not clear

  The range of “**high magnetic permeability**” cannot be determined.

  **Judgment: Overruling the whole infringement claim**

- Similar Expressions: large, great, small, low, best, etc.
- Solution: i) giving definition about the terminology in description
  ii) directly specifying the range in the claim
Clarity Issue and Claim Construction

- Consistency & Interpretation by Description

  Inconsistency of wording may result in problems in claims construction or in using the description to interpret the claim.

  **Supreme Court Guiding Case**

  ✓ Technical feature in Claim 1:
  the surface of the plastic film forming an uneven rough surface with a thickness of 0.04-0.09mm
  ✓ Disclosure in description:
  the plastic film has a thickness of 0.04mm, 0.07mm or 0.09mm
  ✓ Judgment:
  the two features have different meanings, therefore Claim 1 shall be interpreted literally, rather than be adjusted to the disclosure in the description.
Clarity Issue and Claim Construction

Clarity issue about ‘Substantially’ or ‘Approximately’

- ‘Substantially’ or ‘Approximately’ may cause clarity issue
- Doctrine of Equivalent – reasonable protection scope

Case Example
- Technical feature in Claim 1: the rotation plane of the traction sheave is in parallel with the adjacent wall of the cabin, the adjacent wall of the lift well, and a plane between the counterweight guiding rails
- Infringing Product: the rotation plane is not exactly in parallel with the walls and the plane, but inclined at substantially 4 degrees
- Prior art: the rotation plane is perpendicular to the walls and the plane
- Judgment: infringement based on Doctrine of Equivalent

Suggestions
- Using clear expression in the claim: in parallel with
- Giving a specific definition in the description
  ‘in parallel with’ means substantially parallel, i.e. there could be ±5 degrees angle.
Functional features and Claim Construction

- SPC Judicial Interpretation (2009)
  Functional features in the claim shall be interpreted as the specific embodiments as disclosed in the description and its equivalents

Case Example

- **Technical feature in Claim 1:**
  the coupling means are provided to have the inner space (230) kept in liquid-sealing status
  the coupling means - 30, 32, 34, 38, 46 (none is dispensable)

- **Infringing Product:**
  including the coupling means 30, 34, 38, 46,
  not including: 32

- **Description:**
  coupling means 32 is indispensable, otherwise liquid will leak into the inner space from the gap between the testing arm and the sleeve

- **Judgment:**
  SPC Judicial interpretation on functional features does apply
coupling means (30, 32, 34, 38, 46) having the inner space (230) kept in liquid seal status
Functional Features and Claim Construction

Functional features and Claim Construction

- **Case Example**
  Functional features in the claim shall be interpreted as the specific embodiments as disclosed in the description and its equivalents

  **Case Example**
  - **First Instance Judgment**
    neither literally infringe nor infringe on Doctrine of Equivalent
  - **Second Instance judgment**
    not literally infringe, but infringe on Doctrine of Equivalent
  - **Requesting retrial before SPC**
    Pending
Functional Features and Claim Construction

Suggestions

- Avoiding using functional definition or features unless the functional definition is the only way to define the invention

- Trying to find out the specific inventive means or features in comparison with the closest prior art

- Reformulating the claim by defining inventive means, rather than reciting the function itself,

- In the description, presenting as many embodiments as possible is always recommended
THANK YOU!

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