IP Analytics and decision support

Premnath V

Who's Speaking

Premnath Venugopalan

PhD, RTTP, FSTEM

Dr. Premnath, Director of Venture Center and Head of NCL Innovations, is a leader in technology transfer, IP commercialization, and venture creation. He has shaped national policies and established award-winning innovation management initiatives, fostering technology commercialization, startups, and deep-tech incubation across India through CSIR-NCL and Venture Center.

Affiliation

- Director, Venture Center, Pune

Quick intro to IP

- Trade secret: Not publicly disclosed. Information access controlled by CA/NDA.
- Patent: Public disclosure. Right to exclude others for 20 years.
- Industrial design
- Copyright
- Trademark
- Plant varieties
- Others (circuit layouts, geographical indications)

IP analytics and reports

- **Patentability assessment:** Is this patentable as per the law?
- **FTO/FTP:** Can I practice this knowhow freely in region X?
- **Patent landscape:** What all is being/has been patented by whom in this domain?
- **White space analysis:** Are there gaps in patent coverage in this topic?
- **Infringement assessment:** Is a technology infringing claims protected by patent set Y?
- **Citation analysis:** How often is a patent being cited and by whom? Is this patent "important"?
- **Competition assessment:** Who all are competing in this space and what is each party's strength/weakness?
- **State-of-art/ Prior art report:** What all has been done (all documents) on this topic and what is current leading edge of the technology?
- **Portfolio analysis:** Analysis of a set of patents around various axes (regional coverage, age, nature of claims, strength of claims, citation strength, industry where relevant, subject etc) with an emphasis on strategy
- **IP audit:** Audit of a set of patents with the goal of optimization of patent portfolio for cost-benefit including goals such as pruning patents, etc
- **Others**

FTO/FTP

- ***Technology developer*** needs to know if knowhow can be practiced freely if the developer wants to use the knowhow her/himself for manufacturing and sales.
- ***Licensee*** needs to know if knowhow can be practiced freely especially if he/she is giving assurances to the licensor.
- ***Licensor*** needs to confirm for him/herself that knowhow can indeed be practiced freely without anybody suing or the need to seek additional licenses. Value diminishes if additional licenses are required.
- ***Investor***'s assessment of value of knowhow depends on whether the knowhow has FTO or not.
- ***Funding agencies*** (ex: BIRAC) want to check FTO to ensure that the knowhow proposed can be practiced.

Patentability assessments

What do you check for?

- Is it novel?
- Is it non-obvious?
- Is it useful?
- Is not in the exclusions list in the Patent Law?

Best Practices:

- It takes efforts to understand, identify and outline the invention accurately
- Frame rough draft clauses before searching
- One can change draft claims after you get an initial assessment. Patentability assessments should be seen as guidance notes rather than make-or-break documents.
- Patentability assessments are not 100% fail proof

Caution

If your knowhow is patentable, does it mean it has FTO? No!

Multi-level dependency

Selected Decisions

Key decision points

The following are key decision points encountered by a TTO:

- Decisions on inventorship
- Decisions on ownership
- Decision to file IP in India
- Decision to file PCT or in foreign jurisdictions
- Decision on how much to invest on IP costs
- Decisions to maintain/ renew IP
- Decisions on how much to invest in marketing & lead generation
- Decision on deal structure and commercials
- Decisions on legal actions, notices, litigations

Decision to file IP

Should you file for IP or keep it a trade secret?

- Is IP important in your industry? Depends on time cycles, cost of R&D etc.
- Is the knowhow something you can easily hide? What Is the risk of disclosure/ reverse engineering/ competitor's patent filing?
- Is talking freely about it with investors/partners important to gain support/ credibility?

When should you file?

- Ideally, one files when the ***scope*** of the invention is clear and roadmap for generating data within a year is clear and predictable.
- In very competitive fields, filing early is critical.
- In not-so-competitive fields, filing can wait. But practically speaking, it is hard since one has to be able to speak freely with all stakeholders also.

File, prosecutions and costs

Government fees for filing patents is ***not very expensive***. The cheapest way for you to protect your inventions is to file it yourself. But of course, you have to invest time and efforts learning the mechanisms and best practices. Some countries have had a strong tradition of inventors filing their own patents.

Try to ***stage your decision points and costs*** into multiple steps. This can be done to get a better feel for data to support more investments, or raise money progressively. For example, one strategy is:

- *(Month 0) Provisional filing*
- *(Month 12) Complete specifications filing and PCT filing*
- *(Month 30) "National" phase filing (entering foreign filings)*

Rushing a grant process is not advantageous in all situations.

IP Due Diligence: Ownership and rights

Take efforts to secure/making predictable ownership rights via:

- Employment/ consulting contracts
- Co-development agreements
- Technology/ IP sale/ assignment agreements
- CDA/NDA
- Intentional formal public disclosures

Have clarity in exploitation rights via:

- Licensing agreements
- Option agreements
- MTA
- Partnership agreements for commercialization
- In-licensing agreements (ex: open source)

How industry partners will think when partnering you?

Unencumbered IP with ***clear/predictable decision making authority*** is always better. Clear and simple ownership is always preferable.

Define and limit scope in partnerships carefully. Keep it focused and not too broad/ fuzzy.

Ensure that you are ***continuously building value*** into your company. Projected earnings (profit) stream are the biggest determinant of valuations. Carefully assess how agreements affect your earning streams.

Agreements:

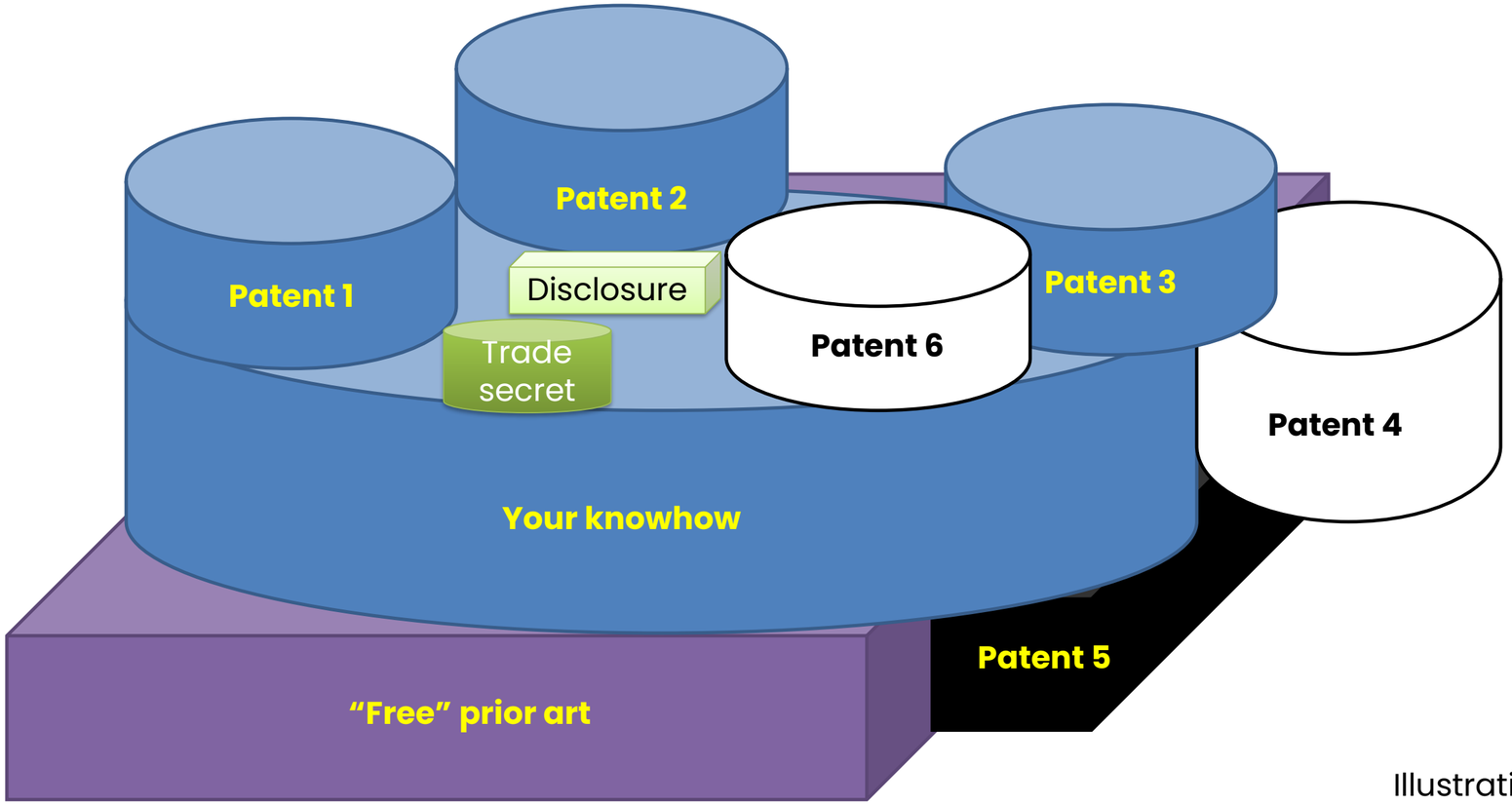
- Licensing
- Sale/assignment
- Strategic marketing partnerships
- Co-development of applications

Portfolio Planning

Portfolio Planning

Plan your portfolio:

- Different types of IPR: Every business has its own optimum “basket”
- Coverage in terms of scope: Compositions/ products, processes/ methods, manufactured product, methods of use/ applications etc , brand, software etc
- Regional coverage
- Strategic vs tactical
- Defense against the competition
- Portfolio for attacking the competition or getting attention of strategic partners



Patent strategy

Illustrations:
1. Portfolio planning (P1, P2, D, TS, P3)
2. FTO (P5)
3. Offensive filings (P6)
4. Tactical filings (P4)

Case Study : IP Analytics and Decision Support

Vidula Walimbe & Premnath V

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Affiliation

- Director, Venture Center, Pune

Who's Speaking

Vidula Walimbe

PhD, RTTP

Vidula has expertise in technology assessment, patent analytics, & innovation management. She has served as a single point of contact for several organizations, supporting IP strategy, technology transfer processes, & policy development. She has evaluated numerous technologies for their commercial readiness, market potential, innovation impact, & competitive landscape. She has played a key role in enabling spin-offs & strengthening institutional IP frameworks. With a PhD in Law, she brings a unique blend of legal and technical insight to advancing research commercialization and tech management.

Affiliation

- Associate Manager-Innovation Management, Venture Center

Learning Goals

This case study is designed to understand the following:

- Different IP analytical reports
- How a search is planned and data evaluation?
- How IP analytical reports can help organization/ institute to make informed strategic decisions?
- Questions that can be answered by different analytical reports
- Who needs to do which report at what stage?

Different IP analytical reports

Type of report	Question answered	When to do?
Patentability assessment	Is this patentable as per the law?	Writing a new Patent application
Freedom to operate	Can I practice this knowhow freely in region X?	Before launching a product in market
Patent Landscape	What all is being/has been patented by whom in this domain?	At ideation stage
Infringement assessment	Is a technology infringing claims protected by patent set Y?	Performed when a company is aware of a specific patent and is contemplating launching a similar product.
Citation analysis	How often is a patent being cited and by whom? Is this patent "important"?	Performed to understand the impact and significance of a patent, identify potential competitors, and assess the evolution of a technology field
Competition assessment	Who all are competing in this space and what is each party's strength/weakness?	From ideation to market entry
State-of-art report	What all has been done (and protected) on this topic and what is current leading edge of the technology?	Early in the innovation process or as soon as a potential invention is identified
IP due diligence	Verify ownership, assess validity, identify risks and evaluate enforceability	Before making any significant financial decisions involving intellectual property, such as mergers and acquisitions
Other reports	Portfolio management, white scape analysis etc	----

Case Study 1
Patentability assessment

How IP analytical reports will help in decision making?

Case study 1: Patentability assessment report

Disclosed invention: An enzyme preparation for prophylaxis of infections caused by fungi, in particular oomycetes, and bacterial infections in crop and ornamental plants -an aqueous solution of a single serine protease derived from Nocardiopsis sp., and - one or more adhesive agents and/or one or more wetting agents and/or one or more rain stabilizers and/or one or more UV stabilizers -pH ranging from 4.0 to 8.0, a concentration ranging from 0.001% to 1%.

	Search strings
Keywords	Enzyme preparation, bacteriolytic enzyme, prophylaxis , treatment composition, pathogenic, Adjuvants, preservatives or sterilants, adhesives, Infection, fungal, bacterial, lysis of pathogenic fungi, bactericidal or fungicidal, microbial contamination, serine protease, serine protease variants, subtilisin variants, proteolytic activity, proteinases
Search query	Enzyme OR ((bacteri*) W (enzyme?)) AND (treatment? OR prophylaxis) AND (Bacteric* OR fungic* OR pathogen*) AND ((serine W (protease? OR variants?)) OR (subtilisin W variant?) OR (proteol* W activity) OR (proteinas*))
Classification Codes	A01P 1/00 , A01P 3/00, A01N 37/46, A01N 63/00, A01N 63/02
Results retrieved	PL:10,NPL: 20
Relevant results	PL:4 (D1: JPS5473182A , D2: : CN103461383A, D3:WO2012151480A2, D4:WO2009052344A2)

How IP analytical reports will help in decision making?

Case study 1 : Patentability assessment report : Result set

Enzyme composition comprising serine protease, glucanase and adjuvant materials such as stabilizer, surfactants etc.	an enzyme composition comprising serine protease along with other enzyme or adjunct materials	**D1, D2, D3, D4**
Enzyme composition derived from the genera Trichoderma and Bacillus for the prophylaxis and therapy of mycoses in fish and invertebrates	Use of proteolytic enzyme, papain for inhibiting fungal or bacterial growth	**D5, D6**

Patentability assessment report: Opinion & Summary

- **Novelty** : The subject matter lacks novelty w.r.t D1-D4
- **Non-obviousness**: it would have been obvious for a person skilled in the art to arrive at the alleged invention by combining the disclosures of D1-D6 and common general knowledge regarding specifying particular amount/wt% of the components using routine experimentation
- **Non patentable subject mater**: Claims pertains to a substance obtained by a mere admixture resulting only in the aggregation of the properties of the components and without having any demonstrated synergistic effect; hence not allowable u/s 3(e) of The Patents Act, 1970

Case Study 2
Freedom to operate

How IP analytical reports will help in decision making?

Case study 2: Freedom to operate report

Scope of the search:
1. The pen contains **valves that automatically close** when the writing point of the pen points upwards, so that no more ink is fed to the ball point.
2. The **pen has a lamp** arranged on it, in order to enable writing in the dark.
3. Question been answered: Can technology be practiced in the US without infringing active patents in the US?

	Search strings
Keywords	ball-point pen, ink reservoir, feeding means, valves, close, automatically, point up, light, lighting, lamp, illumination, illuminating
Databases	Free databases/ paid databases
IPC Codes	B43K7/00 – ball-point pens B43K5/00 - pens with ink reservoirs in holders B43K5/18V1 - arrangements for feeding the ink to the nibs by use of valves B43K5/18V1B3 - automatically closing when the writing point points upwards B43K29/10 - combinations of writing implements with illuminating devices
	Search strings
Keywords	ball-point pen, ink reservoir, feeding means, valves, close, automatically, point up, light, lighting, lamp, illumination, illuminating

How IP analytical reports will help in decision making?

Case study 2 : Freedom to operate report

Results set : The following documents are considered to be relevant. They are categorized according to the codes:
1= Documents of particular interest
2= Documents of possible relevance

Table 1 : Technology elements
Question : Does the Tech Elements presented in the document Dx have any commonality to the Tech Elements proposed in the Target Technology?

Patent no./ Technical feature	Valves that close	Pen with light	Patent status
D1: US5868512	1	1	Granted and active
D2: US5067838	1	2	In process
D3: US7241022	2	2	Granted and active
D4: US7101103	1	1	In process
D5: US5405208	1	2	Granted and active

How IP analytical reports will help in decision making?

FTO report: Opinion & Summary

- The search revealed a number of documents which could be of particular interest to study and analyze further. These documents are labeled “1”. These documents disclose ball point pens with light and valves. These are the technical features of the proposed invention listed under technical features
- Other documents which are possibly relevant are also included for further analysis. These documents, which are labeled “2” in the list below, mainly relate to writing instruments other than ball-point pens, which disclose one of the previously mentioned technical features
- For detailed comparison of the target technology vs D1 and D4, more detailed analysis will be needed which may not be within the scope of this analysis.

Conclusions:

The target technology probably has FTO in the US provided the technology elements can be shown to be different compared especially to D1 and D4.

Case Study 3
Landscape report

How IP analytical reports will help in decision making?

Case study 3: Patent Landscape report

A. Information from client	
Client request	Patent landscape report on “Shampoo Compositions Comprising Gel Networks”
Key questions to be answered	• How are the technology trends? • What are the leading markets to the formulation? • What are the primary technologies and secondary technologies? • What are the technologies in which top companies are focussing on? • Which markets are favored by top players? • Is there any assignee collaboration?
Search instructions	• The claim(s) and the example should contain gel network • Components: Fatty alcohol (especially stearyl alcohol and cetyl alcohol), and anionic surfactant or cationic surfactant
B. Methodology of search	
Relevant keywords	Hair preparation, hair rinses, Gel network, gel matrix, cetyl alcohol, stearyl alcohol, anionic surfactant, shampoo, hair
Classification codes of Subject matter	A61Q-005/02 , A61Q-005/12, C11D, C08L, A61K, A61P
Databases used	Free patent office databases: Patentscope, Espace.net, USPTO, Google patent search etc
Search query	((Gel Near1 (network OR matrix)) AND (shampoo OR rinse OR (hair NEAR wash)) AND ((cetyl OR stearyl) NEAR 1 alcohol) AND (surfactant)) filtering results for (A61Q-005 OR A61Q-005 OR C11D OR C08L OR A61K OR A61P)

How IP analytical reports will help in decision making?

Patent Landscape: Opinion & Summary

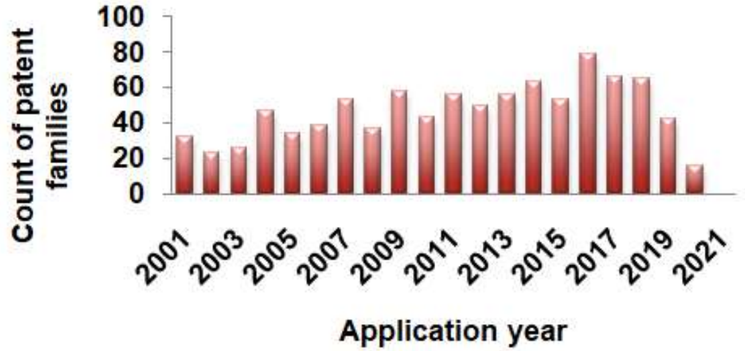
Analysis and bucketing of result set

Patent Number	Title	Abstract	Claim 1	Personal care Category	Claim focus	Gel network composition	Gel network claimed	Shampoo composition (Claimed)	Focus of Invention	Assignee	Inventor	Priority Date	Date of Publication	IPC Classes
WO2003101416A1	Shampoo containing a gel network	The compositions of the present invention relate to improved shampoo compositions having from	1. A shampoo composition comprising: a) from about 5 to about 50 weight percent of a	Hair care	Composition/ Process/ MOT/Method of use	1) Fatty alcohol. Mixtures of cetyl and stearyl alcohol (20:80 to 80:20) preferred	A shampoo composition comprising at least about 0.05 weight percent of a fatty alcohol gel network (Claim 1) wherein said fatty alcohol gel network is formed using a cationic	1) Detersive surfactant (5-50% by weight): Anionic (5-50% preferably from about 8-30%, more	Hair cleansing shampoo containing a fatty alcohol gel network and method of use	PROCTER AND GAMBLE	ALLAN ROYCE DOUGLAS ; CRISTINE RICCI NICOLE ; LEE WELLS ROBERT ; NICOLE CRISTINE RICCI ; WELLS ROBERT	4/6/2002	11/12/2003	A61K8/00 ; A61K8/02 ; A61K8/04 ; A61K8/34 ; A61K8/40 ; A61K8/41 ; A61K8/44 ; A61K8/46 ;
US20180038023A1	Personal care compositions substantially free of sulfated surfactants and	A personal care composition substantially free of sulfated surfactants includes a	1. A personal care composition comprising: a dispersed gel network comprising:	Hair care and other personal care composition	Composition/Process/Method of use	1) Fatty alcohols (1-10%) 2) Gel matrix surfactant: anionic surfactants, cationic surfactants,	A personal care composition comprising: a dispersed gel network comprising: about 0.05% or more, by weight of the personal care composition, of one or more	1) A dispersed gel network (5-30% by weight of personal care formulation)	Personal care compositions with dispersed gel network phase, free of sulfated	PROCTER AND GAMBLE	HUTTON HOWARD ; HUTTON II HOWARD DAVID	10/10/2016	12/4/2018	A61K8/04 ; A61K8/34 ; A61K8/44 ; A61K8/46 ; A61K8/60 ; A61Q5/02
WO2017096155A1	Composition for hair frizz reduction	The present invention is directed a shampoo composition for hair frizz reduction comprising	1. A shampoo composition for hair frizz reduction comprising: from 0.1% to 20% of a	Hair care	Composition / MOT	1) High melting point fatty compounds (0.1% to 20%): 2) A cationic surfactant	A shampoo composition according to any proceeding claims wherein the shampoo composition further comprise a gel matrix comprising:	1) A moisture control material or mixture of moisture control materials (0.1-20%)	Shampoo composition for hair frizz reduction	PROCTER AND GAMBLE	MARSH JENNIFER MARY ; PUNYANI SUPRIYA ; SONG BRIAN XIAOQING ; YANG TIFFANY TIEN YUN	4/12/2015	8/6/2017	A61K8/34 ; A61K8/36 ; A61K8/37 ; A61K8/41 ; A61K8/67 ; A61Q5/02 ; A61Q5/06
US20160175210A1	Method of inhibiting copper deposition on hair	A method of inhibiting copper deposition on hair and facilitating the removal of copper	1. A method of inhibiting copper deposition on hair on hair comprising the steps of	Hair care	Composition/ MOT	1) Fatty alcohol (0.1-20%, 0.5-14% more alternatively 1-10% alternatively 6-8%);	A conditioner gel matrix comprising (i) from 0.1% to about 20% of one or more high melting point fatty compound, by weight of the conditioner gel matrix	1) Detersive surfactants: Anionic, amphoteric and Zwitterionic detersive surfactants	Hair composition inhibiting copper deposition on hair and facilitating the removal of	PROCTER AND GAMBLE ; NOXELL CORP	GRAHAM NEIL MCKELVEY ; JENNIFER MARY MARSH ; MARSH JENNIFER MARY ; MCKELVEY GRAHAM NEIL	17/12/2014	23/6/2016	A61K8/02 ; A61K8/04 ; A61K8/22 ; A61K8/34 ; A61K8/36 ; A61K8/362 ; A61K8/37 ; A61K8/41 ;
US9642788B2	Shampoo Composition Comprising Gel Matrix and Histidine	A shampoo composition having from about 0.025% to about 0.25% histidine, by weight of the	1. A shampoo composition comprising: a. from about 0.05% to about 0.2% histidine, by	Hair care	Composition/MOT	1) One or more fatty alcohols (0.1-20%) 2) one or more gel matrix surfactants (0.1-10%)	A gel matrix comprising: i. from about 0.1% to about 20% of one or more fatty alcohols, by weight of the gel matrix;	1) Histidine (0.025-0.25%); zwitterionic or uncharged, adequate copper removal	A shampoo composition that inhibits copper deposition onto hair.	PROCTER AND GAMBLE	CASEY PATRICK KELLY ; HOWARD DAVID HUTTON II ; HUTTON HOWARD DAVID ; HUTTON HOWARD DAVID II ;	25/4/2014	9/5/2017	A61K8/04 ; A61K8/34 ; A61K8/365 ; A61K8/42 ; A61K8/44 ; A61K8/46 ; A61K8/49 ; A61Q5/00 ;
US20130039875A1	Shampoo containing a dendritic macromolecule and a gel network	A hair care composition comprising: i) a cleaning phase comprising a cleansing anionic	1. A shampoo composition comprising: i) a cleaning phase comprising a cleansing	Hair care	Composition/ Method of manufacture	1) Fatty material 2) Anionic surfactant: alkyl group with from 16 to 30 carbons	An aqueous conditioning gel network having no overall charge or is anionic, the gel network comprising: (a) fatty material selected from the group	1) A cleansing anionic surfactant 2) An aqueous conditioning gel network	A hair care composition particularly shampoo comprising dendritic macromolecules with	MURRAY ANDREW MALCOLM ; UNILEVER HINDUSTAN ; PHAM THUY ANH ; UNILEVER PLC ;	PHAM THUY ANH ; MURRAY ANDREW MALCOLM	26/3/2010	14/2/2013	A61K8/34 ; A61K8/36 ; A61K8/37 ; A61K8/40 ; A61K8/41 ; A61K8/42 ; A61K8/44 ; A61K8/46 ;
US20180030705A1	Shampoo Compositions Comprising a Chelant	Described herein is a shampoo composition and methods of using the same, the shampoo	1. A shampoo composition comprising: (a) from about 0.005% to about 5% of one or more	Hair care	Composition/ method of use/MOT	1) Fatty alcohol 2) Surfactant (Claim 13)	The shampoo composition of claim 1, further comprising a gel network, wherein the gel network comprises a fatty alcohol and a surfactant (Claim 13)	1) A copper chelant (0.005% to about 5%) - MW 75-400, 100-350, 125-325, 140-300 e.g.,	Improved shampoo compositions which inhibit copper depositing and removal from hair	PROCTER AND GAMBLE	MARSH, Jennifer Mary [Kelly, Casey Patrick] Smit, Mark Robert	30/6/2016	4/1/2018	A61K8/41; A61K8/44; A61K8/46; A61Q5/00; A61Q5/02
EP2960021A1	Hair care compositions comprising polyelectrolyte complexes for durable benefits	Disclosed herein is an aqueous hair care composition capable of providing durable	1. An aqueous hair care composition capable of providing durable non-permanent hair	Hair care	Composition/Method of use/ process of preparation	1) Anionic polymer (A): 0.01 wt. % to about 20 wt. % with molecular weight (1,000,000,000-	An aqueous hair care composition comprising a polyelectrolyte complex having a gel matrix structure or a mixture of gel matrix and mycrogel formed by electrostatic attraction	1) Mixture of gel matrix (Avg particle size more than 15 microns) and mycrogel (Avg particle size	Rinse-off or leave-in type of aqueous hair care composition containing polyelectrolyte complexes	ISP INVESTMENT	ZHOU, Yan [RIGOLETTO, Raymond B.] FOLTS, Linda C.] OU, Xin] COLACO, Allwyn	15/3/2013	10/8/2016	A61K8/02; A61K8/04; A61K8/81; A61Q5/02; A61Q5/06; A61Q5/12

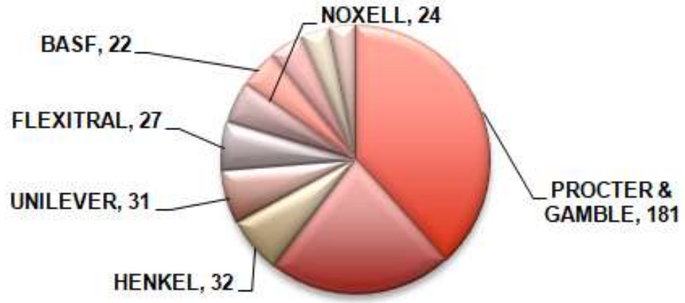
How IP analytical reports will help in decision making?

Patent Landscape: Opinion & Summary

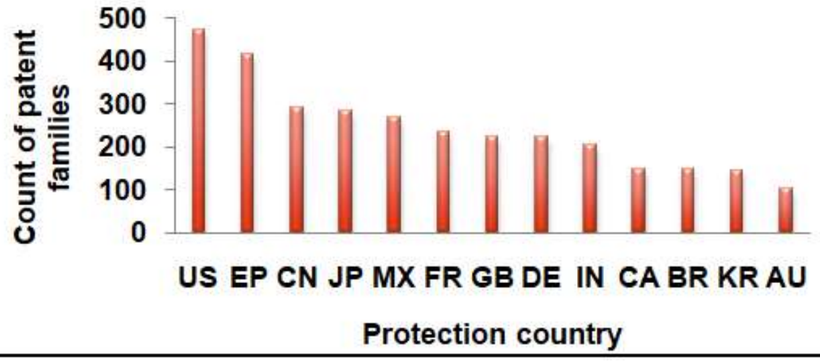
How are the technology trends?



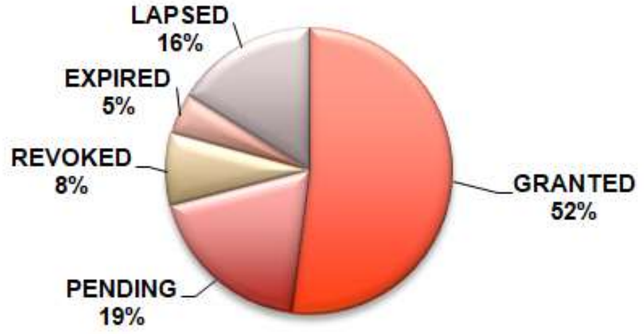
Who are the top players in the market?



What are the leading markets to the formulation?



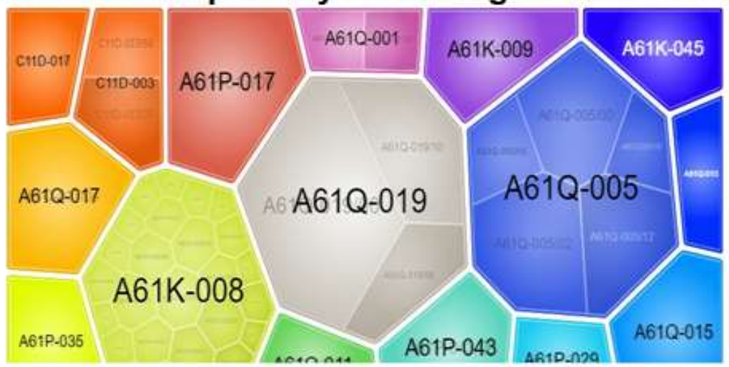
What is the legal status of patents in area?



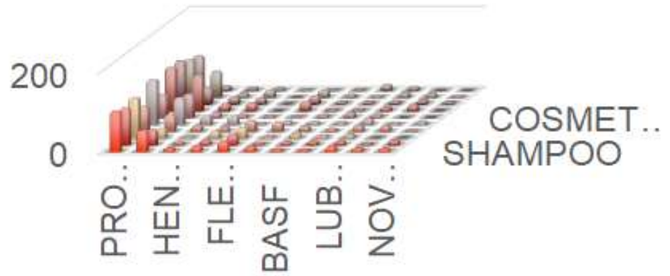
How IP analytical reports will help in decision making?

Patent Landscape: Opinion & Summary

What are the primary technologies and secondary



What are the technologies in which top companies are focussing on?



Which markets are favoured by top players?

Is there any assignee collaboration?

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

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