

VOICE OF CUSTOMER (VOC)

Secondary Research Support Services



*Technical experts powered by sophisticated AI/ML
and Deep Web tools to extract unique insights*

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This document is confidential and intended solely for the information of the client to whom it is addressed

ABOUT SCITECH PATENT ART

- Established in 2002...one of India's leading technology intelligence firms for more than 17 years
- Maintaining confidentiality is core to our business
- Serve Fortune 500, universities and law firms
- 95+ advanced degree scientists and technologists



Our Difference

Human experts powered by data engineering & AI / ML tools

Client advantages: Cost, Turnaround Time & Quality

TEAM BACKGROUND: R&D, IP & COMMERCIALIZATION



Dr. Srin Achanta

Founder & Managing Director

- ◆ 25+ years in technology commercialization
- ◆ Technology & business strategy expertise
- ◆ Past affiliations: P&G, Booz & Co., Honeywell



Ms. Linda Perucca

Representative, USA

- ◆ 25+ years in R&D and Quality
- ◆ Knowledge Management & Training
- ◆ Past affiliations: Mondelez International



Mr. Hitoshi Yoshino

Representative, Japan

- ◆ 25+ years in technology transfer / licensing
- ◆ Large JP network – universities, companies, etc.
- ◆ Past affiliations: BTG, QED, JPO



Mrs. Uma Parameswaran

Executive Advisor

- ◆ 25+ years in R&D, Indian patent agent
- ◆ 12 years in technology analytics
- ◆ Past affiliation: R&D team lead at ACC, Mumbai



Mrs. Harita Achanta

Director

- ◆ 15+ years in engineering and IP analytics
- ◆ U.S. patent agent
- ◆ Past affiliations: Convergys, Sherwin Williams



Mr. Mark Kline

Consultant, USA

- ◆ 35+ years in research and open innovation
- ◆ Over 125 patents
- ◆ Patent strategy, patent prosecutions, patent litigations and training for inventors

VOC – OUR DIFFERENCE

- Extensive knowledge of databases and data sources
- Deep Web crawling, Big Data and machine learning analytics

**DATA ENGINEERING
&
AI/ML ANALYTICS**

**TECHNOLOGY
DEPTH**

- 95+ analysts in various technical disciplines
- Over 100,000 technical documents (patents, publications, websites,...) analyzed every month

**INNOVATION
SUPPORT**

- Over 17 years experience in supporting innovation teams
- Managers equipped to quickly turn a query into specific deliverables



OUR DATA SOURCES

PATENTS / TECHNICAL LITERATURE

- Derwent Innovation
- Questel Orbit
- PatBase
- PACER
- STN*
 - WPIX, CA, MARPAT, REGISTRY, IMS PATENT, ADISINSIGHT, EMBASE etc.
- Web of Science
- ScienceDirect
- Google Scholar, IEEE, PubMed, and other direct journal sources

BUSINESS NEWS / OTHERS

- Intel
- Factiva
- Dun & Bradstreet
- Pitchbook*
- Crunchbase
- SPA's proprietary Deep Web crawling techniques (company websites, trade journals, product brochures, annual reports, industry news sites, etc.)

** Not included as part of standard costs. Extra costs may be incurred*

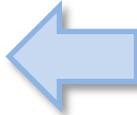
VOC – SERVICE EXAMPLES

Custom Services Tailored To Client Needs

CLIENT NEED

A

In-depth customer/supplier profiling to understand emerging needs and business direction in specific areas of relevance



B

Problem – solution analysis to understand what problems are in focus and what solutions are under consideration and “Build a moat”



C

Customer and supplier alerts / summaries to highlight activity in areas of specific interest



D

Consolidated tracking of customer / supplier activity in a globally accessible, cloud-based portal



SPA SERVICES

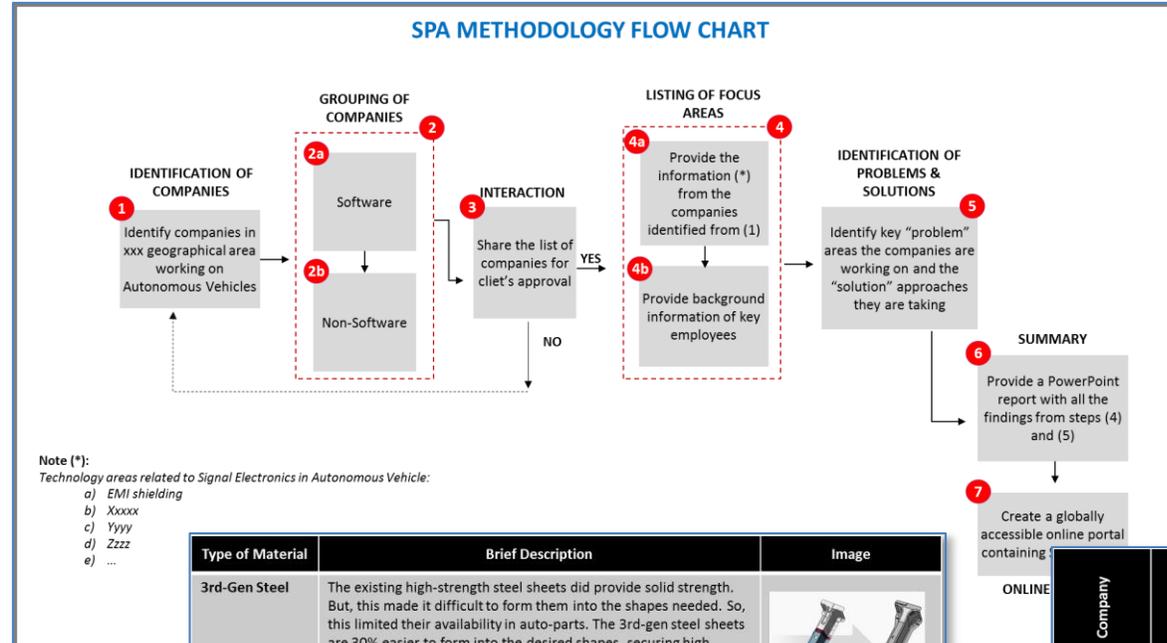
Deep-web crawl to extract insights from various sources (websites, trade journals, patents, etc.) with specific focus on technologies/applications of interest to the client

Analyze key problems disclosed in patents, technical literature, trade journals and summarize solution approaches. Use this approach to “Build a moat” around key IP

Customized news service with AI/ML filters to extract relevant information and one-page summaries to keep information flow succinct.

Search, extract and maintain an active portal with key customer/supplier developments, for innovation teams to collaborate, and provide management updates on a regular basis

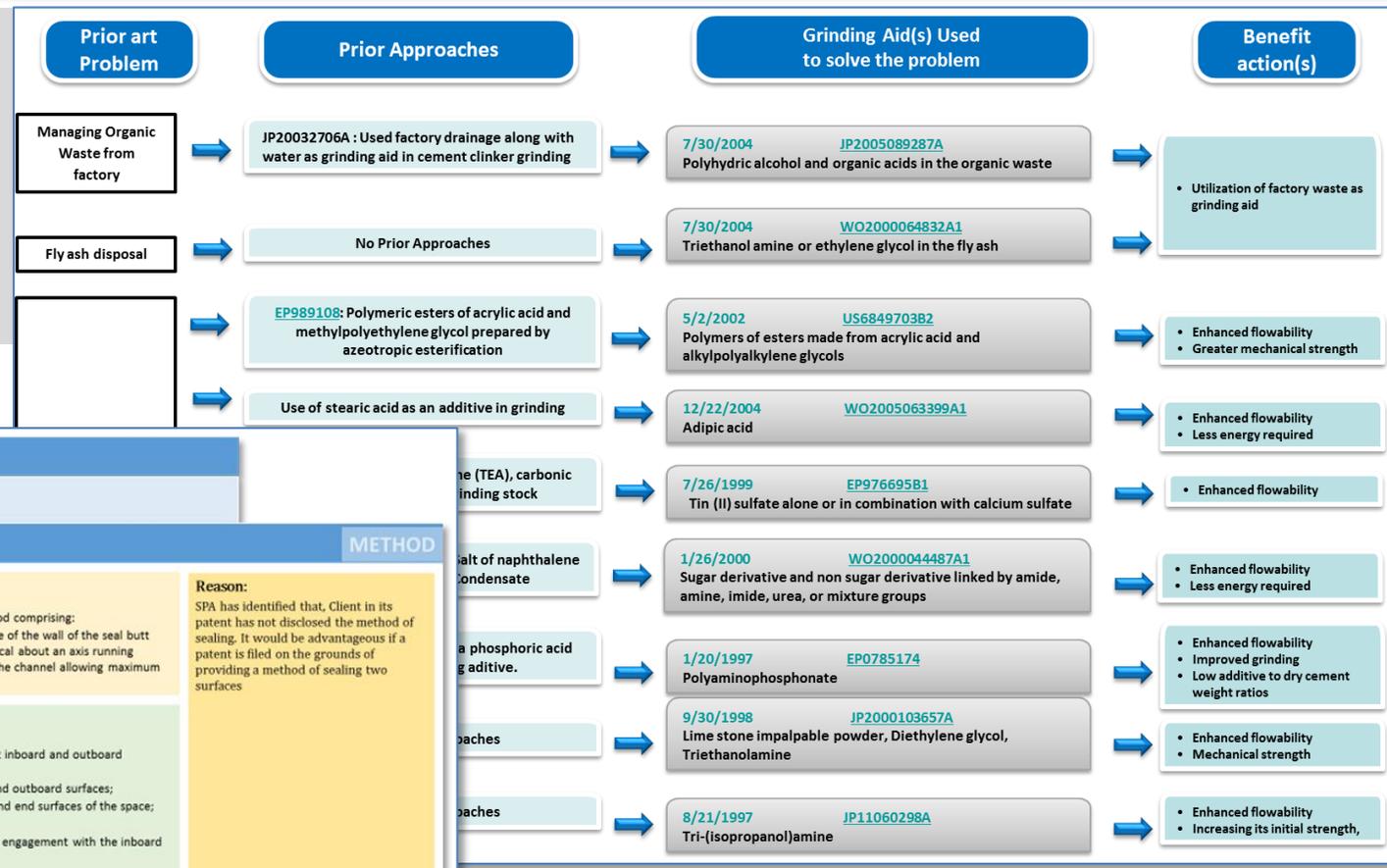
- ✓ Client is a large, global leader in material science and technology
- ✓ Client innovation team was interested in in-depth profiling of customers in the area of signal-electronics as applied to autonomous vehicles
- ✓ Client team wanted to understand
 - What companies exist in Silicon Valley area that are working in this space?
 - What problems are they working on, which are relevant to client's capabilities in materials?
 - Which staff at the customer site had the most relevant expertise?
 - Global tracker to track the latest developments at these customers on a regular basis



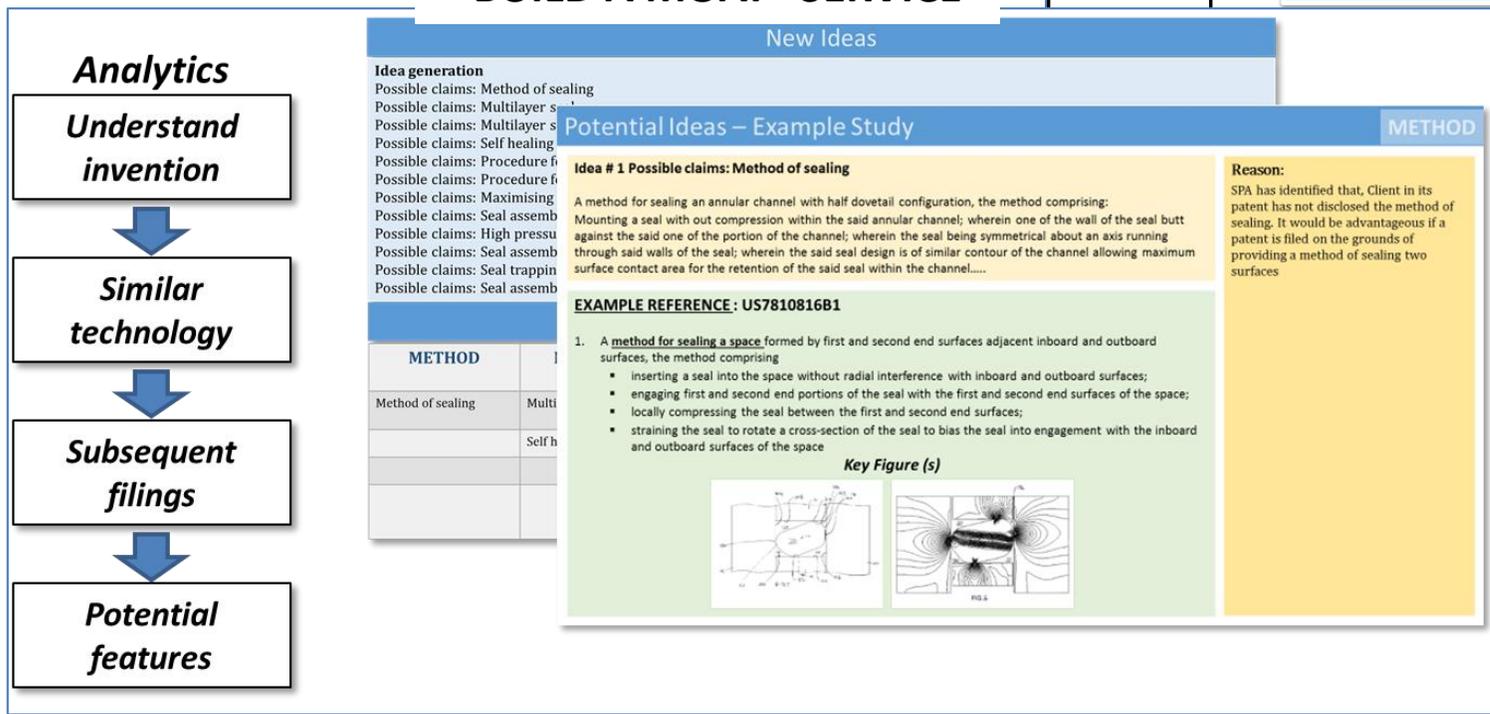
Type of Material	Brief Description	Image
3rd-Gen Steel	The existing high-strength steel sheets did provide solid strength. But, this made it difficult to form them into the shapes needed. So, this limited their availability in auto-parts. The 3rd-gen steel sheets are 30% easier to form into the desired shapes, securing high strength and ease of forming at the same time. Hyundai Motor Group has been utilizing these 3rd-gen steel sheets in next-generation auto-part development projects whenever there was a chance to make parts lighter, stronger, and more integrated.	
Aluminum	To reduce the weight of the vehicles, Hyundai are trying to use more aluminum in body and suspension parts. In order to enhance the formability of exterior body panel, Hyundai are developing new aluminum with superior formability than conventional aluminum. And, to reduce the weight of suspension parts, Hyundai are developing high-quality casting methods to ensure superior quality competitiveness.	
CFRP	CFRP, or carbon fiber reinforced plastics, is a high-strength fiber plastic material that weighs only 1/4 of steel, while five times stronger. This new material weighs only half of steel and 2/3 of aluminum. And, by applying the HP-RTM method, Hyundai are developing various parts including roofs and hoods.	
Next-gen Power Semiconductor Materials	The next-generation power semiconductors, which are mainly composed of SiC and GaN materials, have enhanced performance regarding voltages, currents, and operation temperature. This, in turn, enhances the power efficiency and fuel efficiency.	

Company	Software (S)/ hardware (H)	EMI shielding	XXXX	XXXX	YYYY	YYYYY	ZZZZ
BAIC Motor	H, S	✓	✓	✓	✓	✓	✓
BAIDU USA	H, S	X	✓	✓	X	X	✓
BMW Group Technology	H, S	X	✓	✓	✓	✓	✓
Byton	H, S	X	✓	✓	X	✓	✓
Cruise	H, S	X	X	X	X	X	✓
Daimler/Mercedes-Benz	H, S	X	✓	✓	✓	X	✓
Faraday Future	H, S	✓	✓	✓	✓	✓	✓
Ford Motor Company	H, S	✓	✓	✓	X	X	✓
GAC Motors	H, S	X	✓	✓	✓	✓	✓
General Motors	H, S	X	✓	✓	✓	✓	✓
Honda	H, S	X	✓	✓	✓	✓	✓
Hyundai	H, S	X	✓	✓	✓	✓	✓

- ✓ Client need: To understand what problems customers / industry is focused on and what are the solution approaches under consideration. Use this information to “Build a moat” around their core patents
- ✓ Data sources: Technical literature, patents, trade journal articles, web-sites

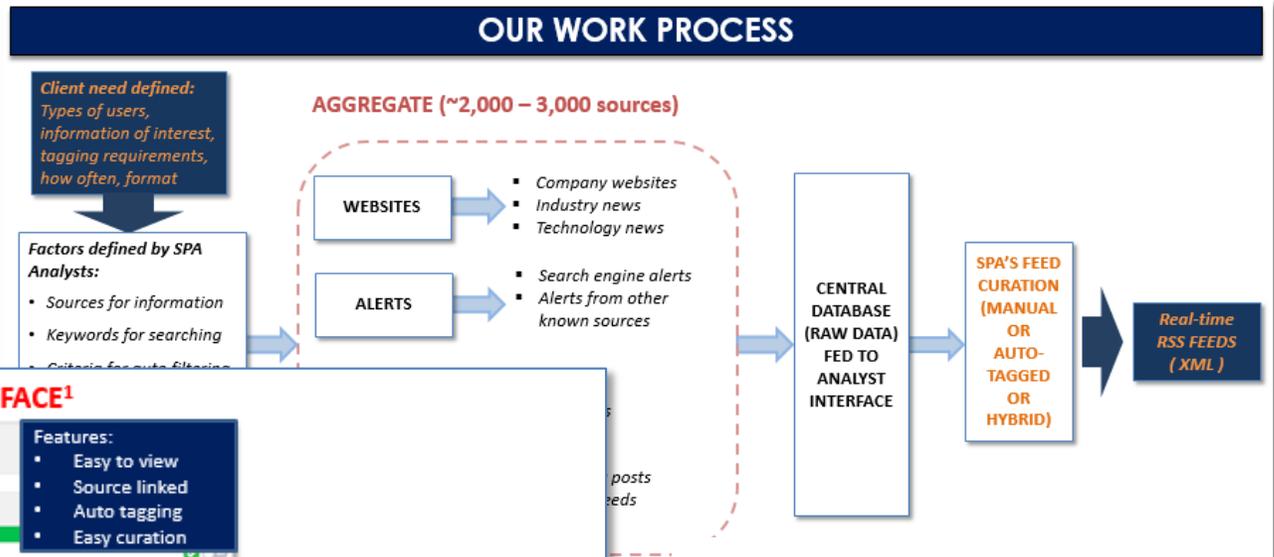


“BUILD A MOAT” SERVICE



- ✓ Client need: Custom tagged news alert on specific technologies and companies from web & Twitter data
- ✓ Data sources: Deep web crawl + Twitter data
- ✓ Analytics: ML-based tagging, analyst curation

OUR WORK PROCESS



Client need defined: Specific companies and technologies to be monitored daily

FEED AGGREGATOR USER INTERFACE¹

Features:

- Easy to view
- Source linked
- Auto tagging
- Easy curation

- Partial List of Sources (SPA identified)**
- <http://www.foodnavigator.com>
 - <http://feeds.feedburner.com>
 - <https://www.foodbusinessnews.net>
 - <http://www.foodbev.com>
 - <http://www.fooddive.com>
 - <http://www.foodprocessing.com>
 - <http://www.bakeryandsnacks.com>
 - <http://www.bevindustry.com>
 - <http://www.candyindustry.com>
 - <http://www.confessionarynews.com>
 - <http://www.efsa.europa.eu>
 - <http://www.food-business-review.com>
 - <http://www.just-food.com>
 - <http://www.milkbusiness.com>
 - <http://www.nutritioninsight.com>
 - ...and many more

DATA ENGINEERING
To extract structured data at regular time intervals

- 1) Interface available for client use if needed
- 2) Format is customizable based on client need

RELEVANT NEWS FEED IN XML

```
<?xml version="1.0" encoding="UTF-8" ?>
<rss version="2.0" ?>
  <channel ?>
    <title>Cereals partners with Change4Life to help parents make more informed breakfast choices</title>
    <description>Cereals today announced a partnership with Change4Life's latest campaign, 'Be a Breakfast Hero' to help parents make more informed breakfast choices. The campaign is part of a wider effort to help parents make healthier choices for their children's diet. Cereals is proud to be a partner in this important initiative. For more information, visit www.change4life.co.uk</description>
    <source_url>https://www.google.com/url?rct=j&sc=us&url=https://www.change4life.co.uk/news/cereals-partners-with-change4life-to-help-parents-make-more-informed-breakfast-choices/&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3Achange4life.co.uk%2FCereals%2FNews%2F&utm_content=feedburner</source_url>
    <author>Cereals</author>
    <date>2019-05-02 20:35:37</date>
    <categories>Strategic Themes-General Business News/categories</categories>
  </channel>
  <item ?>
    <title>Ceregrow</title>
    <description>Ceregrow - Nutrient dense cereal packed with nourishment of milk</description>
    <source_url>https://www.google.com/url?rct=j&sc=us&url=https://www.lybrate.com/news/2019-05-02/2019-05-02-17:55:24/&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3Achange4life.co.uk%2FCereals%2FNews%2F&utm_content=feedburner</source_url>
    <author>Ceregrow</author>
    <date>2019-05-02 17:55:24</date>
    <categories>Flavor Product Category-Snacks,Strategic Themes-Health & well-being,Strategic Themes-Functional Ingredients/categories</categories>
  </item>
</rss>
```

- Fields in XML**
- Title
 - Abstract
 - Link
 - Author
 - Date
 - Categories

ONE PAGE SUMMARIES

Application number: YYYY
Registration number: Abandoned
Corresponding family: CN, DE are alive

SYSTEM
AD Autonomous or semi-autonomous vehicle, where the vehicle control system employs differential braking

FAILURE
STEERING MALEFUNCTION
Failure of vehicle steering control
EVENT: An audible warning will be sent to the driver of host vehicle

SOLUTION
DIFFERENTIAL BRAKING
If the vehicle steering fails during automatic vehicle steering, the host vehicle is made to steer along the optimal path by using differential braking.

ACTION PLAN
EXTRAPOLATION
Enhanced collision avoidance for a vehicle

Claims:
1. A method for providing collision avoidance in a host vehicle, said method comprising: determining that a collision between an object and the host vehicle is imminent; determining an optimal path for the host vehicle to travel along to avoid the object if the collision is imminent; providing automatic vehicle steering to cause the host vehicle to follow the optimal path; determining that the vehicle steering has failed during the automatic vehicle steering; and causing the host vehicle to steer along the optimal path by using differential braking if the vehicle steering has failed.

Enhanced collision avoidance (ECA) system
provides audible warning to the driver of the host vehicle to avoid collision with target vehicle.

Differential braking process (S0) based on the braking force command

FIGURE 3

52 - If braking force command is > 0 or < 0
54 - Whether left side/ right side vehicle braking based on above value
56 - whether front wheel or rear wheel braking (based on the weight distribution of the vehicle)
58 - Converts the brake force command to a brake cylinder pressure command
60 - Checks whether brake cylinder pressure > anti-lock braking (ABS) limit
62 - If above command fails, brake pressure command is implemented

Differential braking : braking force command that selectively provides braking to wheels
ECA: Enhanced collision avoidance

CASE STUDY D GLOBAL PORTAL FOR TRACKING CUSTOMERS & SUPPLIERS

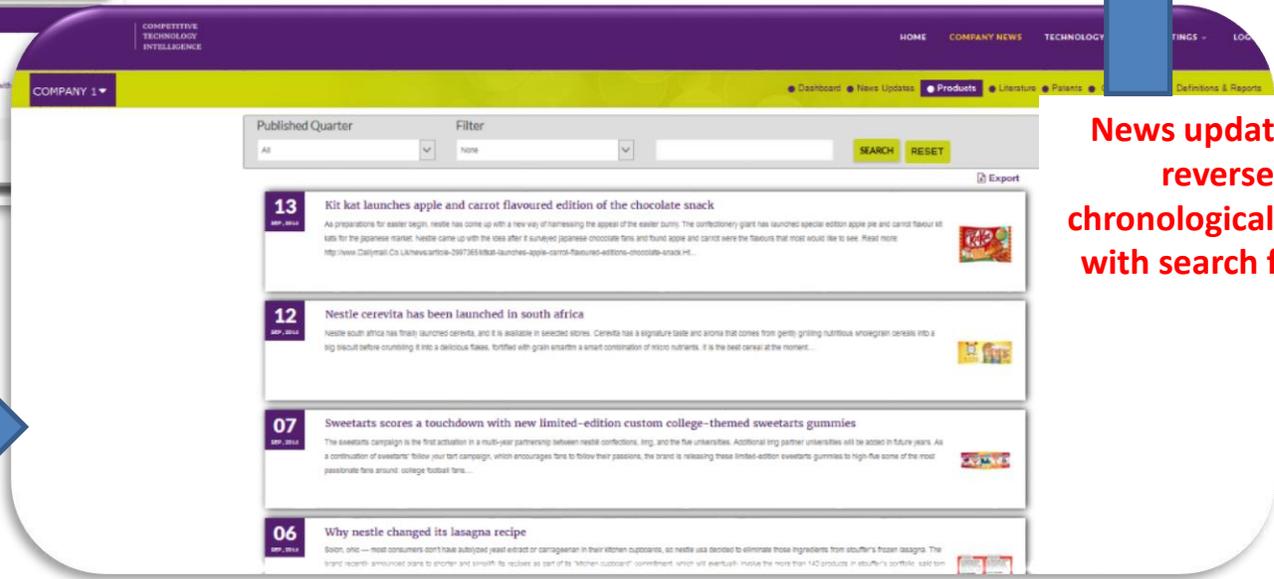
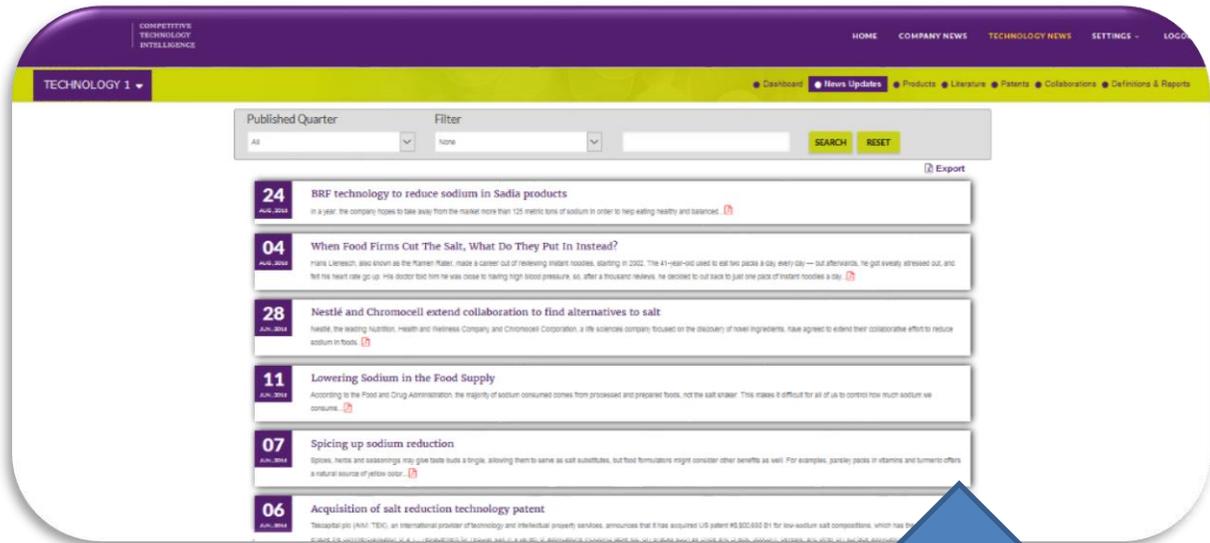
✓ Client need: Global cloud-based portal to track customers / suppliers, while allowing innovation teams to share and collaborate with the collected information



Multi-level categorization

Drill-down charts & graphs

New product launches with images, specifications, etc.



News updates in reverse chronological order with search filters