

CASE STUDY

Development roadmap of novel image sensing technologies for a major chip-making equipment supplier

The Client is a top global semiconductor equipment supplier that develops and manufactures machines for the production of integrated circuits.



The Challenge:

The Client came to PreScouter to produce a development roadmap of potential companies and suppliers of commercialized image sensing technologies that can be used for metrology applications.

The challenge of this engagement was to cover a broad research area while diving deep into specific technologies, which required the team to do in-depth primary research on several technology fronts. The Client was interested in finding ways to produce new technologies for metrology applications such as developing a calibration instrument of extremely high sensitivity beyond anything that already existed.



Methodology:

PreScouter performed parallel research to study the commercial products and technologies under development in the following areas:

- Commercial image sensors and companies manufacturing them
- Technologies that are currently in use or under development
- In-depth research on specific companies and technologies of high interest to the Client



Methodology (cont):

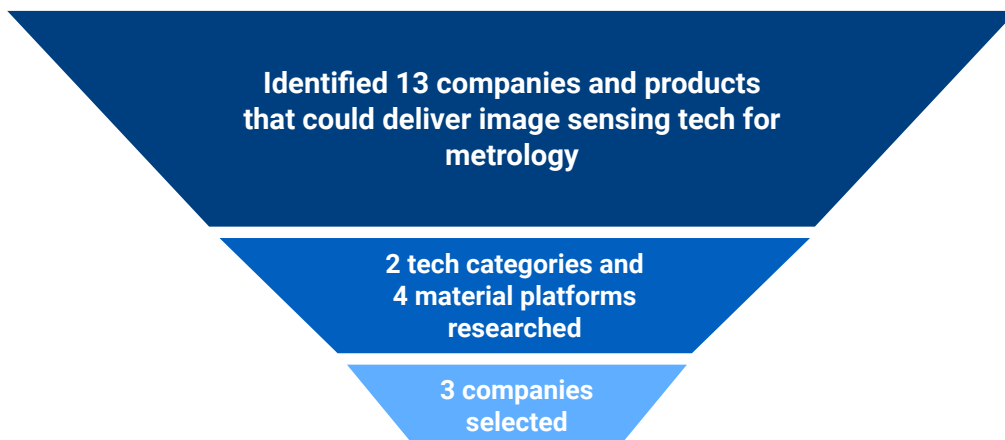
First, PreScouter identified potential products and companies of interest by looking into commercial products and major players and startups in the industry. The PreScouter team then used these identified targets to create a technology landscape of suppliers that might help develop the Client's desired solution. Relevant targets were explored by looking at their IPs and existing products, as well as through direct outreach to their technical staff. In addition, PreScouter engaged Subject Matter Experts (SMEs) to understand technology differentiators and determine if the Client's end goal was feasible, given the existing technologies.

Simultaneously, the PreScouter team researched literature and patents to identify the technologies under development and map the trending of next-generation technologies.



Results:

PreScouter provided a total of **5 deliverables** to the Client, including **4 Intelligence Briefs** and **1 Summary Report**. The PreScouter team identified a total of **13 companies and products**, summarizing their findings in a table containing key parameters such as sensing wavelength, working temperature, applications, and limitations. The Client selected **3 candidates** from among these, and the PreScouter team studied them in depth, including looking at their assigned patents and product lines. The results are summarized in the schematic funnel below.





Results (cont):

In conducting the literature research, PreScouter shortlisted and thoroughly researched **2 technology categories** and **4 material platforms** from a broad list. For these selected technologies, the team summarized potential opportunities and limitations (band gap, cutoff wavelength, quantum efficiency, etc.).

For the Summary Report, the following **4 topics** were covered:

- Listing of the most promising commercial products and their technical parameters
- Overview of technologies that extend operating wavelength span and coating techniques
- Literature study of material platforms and their fundamental limits
- Technical development roadmap for achieving the project goal

In the end, PreScouter recommended a strategy that brought together existing products from players operating in separate markets to create a solution that could match all of the Client's requirements.



Impact of PreScouter work

PreScouter helped the Client quickly develop a technical roadmap in image sensing technology, obtain the necessary data to support R&D decisions, and design a development path for a novel imaging system.

Clients Rely On Prescouter For

✓ COMPETITIVE INTELLIGENCE

✓ TECHNOLOGY & PATENT LANDSCAPING

✓ TECHNOLOGY ROADMAPING

✓ MARKET RESEARCH & ANALYSIS

✓ TRENDS MAPPING

✓ REVIEW BEST PRACTICES

✓ PATENT COMMERCIALIZATION STRATEGY

✓ DATA ANALYSIS & RECOMMENDATIONS

✓ ACQUIRE NON-PUBLIC INFORMATION

✓ SUPPLIER OUTREACH & ANALYSIS

✓ CONSULT WITH INDUSTRY SUBJECT MATTER EXPERTS

✓ INTERVIEWING COMPANIES & EXPERTS



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