Ingenious Brain

Case Study

How We Designed a Winning Supplier Entry Strategy for a Global Client

Objective

A renowned semiconductor industry supplier partnered with IeB to evaluate potential customers and define an effective supplier entry strategy across targeted accounts. The engagement aimed to help the client understand customer-specific supplier selection criteria, procurement dynamics, and positioning requirements to enable successful pitching and long-term collaboration.

Our Strategic Approach

To define the proper supplier entry and pitching strategy, IeB deployed an account-centric framework integrating customer intelligence, process mapping, and entry-strategy design. This framework was executed across four focused workstreams to move from customer insight to entry action:

Customer & Process Mapping

Analyzed key customer accounts to understand their manufacturing processes, material usage patterns, qualification requirements, and decision-making structures. This helped identify where the client's offerings best aligned with operational needs.

Material & Supplier Landscape Assessment

Evaluated materials currently in use and mapped incumbent suppliers across each account. IeB assessed supplier density, switching barriers, and dependency risks to uncover opportunities for differentiated entry.

Supplier Selection Criteria Analysis

Assessed customer-specific criteria such as cost competitiveness, technical performance, supply reliability, localization mandates, and sustainability expectations to shape tailored pitching strategies

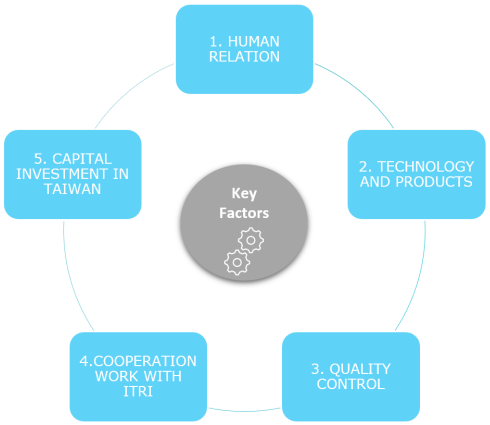
Entry Strategy & Localization Planning

Developed account-specific entry strategies, including collaboration models, pilot engagement pathways, and localization approaches. IeB also outlined options for establishing a local presence to meet regulatory and customer mandates.

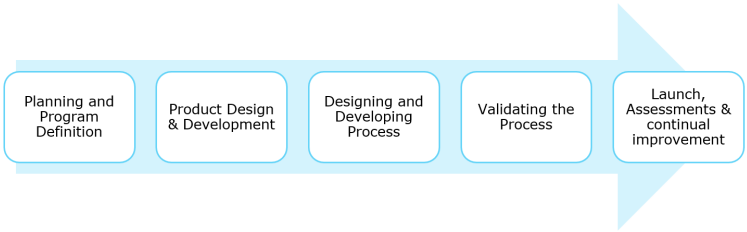
Snippets

Selection Criteria

Semiconductor Manufacturers' key factors



Advanced Product Quality Planning Methodology



Evaluation and Selecting Materials used in Advanced Process

List of Materials used by Semiconductor Manufacturers

Photoresist Materials Segment

Two distinct photoresists are utilized in semiconductor fabrication during photolithography. They are termed **positive and negative photoresists**. **Positive photoresists** are compounds that become **more absorbent after being exposed to radiation**. A **photoactive chemical, substrate resins, natural carrier solvents, stabilizers, polymerization blockers, viscosity control chemicals, dyes, and plasticizers** are all included in these photoresists. **Negative photoresists** are material coatings that crosslink and **become intractable in developing fluids when exposed to radiation**. These photoresists are made up of **photosensitive chemicals, non-photosensitive chemicals, and carrier fluids.**

Process	Key Materials	Novel Materials
Cleaning, Etching & Photo lithography	1% solution of either Sodium Carbonate Monohydrate (Na2CO3.H2O), or Potassium Carbonate (K2CO3)	
	Alkali Soluble Resin	
	Sodium phosphate & metasilicate	
	Buffered NaOH or KOH	
	Hydroxystyrene with acrylate	
		Methacrylate
	Mixture of acrylate and methacrylate	
	Polyhydroxy styrene-co-methacrylate	
	N-camphor sulfonyloxynaphthalimide	
	N-pentafluoro phenylsulfonyloxynaphthalimide	
		Silicone-polyether block copolymer
	N-sulfonyloxynaphthnalimide	
	polyhydroxystyrene -cotbutylacrylate	
	Novolac-based mid-Ultraviolet (MUV)	
	Poly(4-hydroxystyrene) - based deep UV (DUV)	
	Polyisoprene	
		QDs and a photosensitive nano-silica acrylate ceramer
	Novalac resin (synthesized from novolac-based epoxy resins and low molecular weight amines such as ethylenediamine and diethylenetriamine)	
	Azides	
	Poly alkyl aldehyde	
		Novalac resin (propylene glycol monomethyl ether acetate, and the auxiliary solvent includes dimethyl-2-methylglutarate and ethyl beta-ethoxy propionate)
	Polymethacrylate	
	Isoprene	
	Tetramethylammonium hydroxide	
	Non Tetramethylammonium hydroxide	
	Acetoxystyrene Monomer (ASM)	
		High Compositional Uniformity (HCU) polymers
	Poly(p-acetoxy)styrene (PAS) polymers	
	Poly Hydroxystyrene (PHS) Polymer	
	Multifunctional Acrylate	
	Epoxy-based polymer	
	Off-stoichiometry thiolenes (OSTE) polymer	
		Hydrogen Silsesquioxane (HSQ)
	Compatible with unfilled Polypropylene	
	Hydroxylactone	
	High-density polyethylene	
	EPDM	
		PTFE

Semiconductor Manufacturers Standard Process

Advanced Product Quality Planning Methodology

1 Planning and Program Definition	2 Product Design and Development	3 Designing and Developing the Process	4 Validating the Process	5 Launch, Assessments, and Continual Improvement
• Product design • Reliability • Quality goals	• Design review and verification • Defined material specifications • Established control plans for product prototype creation	• Process flow configuration • Operational process quality specifications • Finishing and packaging requirements	• Performing production trial runs • Testing product output to confirm the effectiveness of the deployed manufacturing approach	• Improved manufacturing process through reduction in process variations • Improved quality of product delivery and customer service

Evaluation and Selecting Materials used in Advanced Process by AMAC*

Analyst's View

- TSMC established a new **high-k/metal gate qualification methodology, advanced failure analysis and new materials evaluation process**.
- TSMC's technology development life cycle control, developed using the **APQP (Advanced Product Quality Planning) methodology**, is a systematic approach to define concurrent development disciplines and multi-functional coordination. It is coupled, clear release criteria and deliverables to create a "process release specification."
- Potential new suppliers were required to **pass an assessment for verification of their compliance with TSMC's conflict minerals policy before formally becoming TSMC's eligible suppliers**.
- To prevent non-compliant Covered Minerals from being incorporated into TSMC products and services, TSMC established **an information technology-driven control point, or gating mechanism, in the early stages of new supplier engagement.**
- Potential new suppliers of materials must provide the supporting documentation required in **"New Material Evaluation System", such as a report on Covered Minerals present in their products, a completed Dashboard and signed representations (if applicable).**
- TSMC then reviews these documents to assess any potential conflict minerals compliance risks and will approve the supplier or new material only when a **potential supplier has demonstrated its commitment to complying with TSMC's conflict minerals compliance program.**

*Note: * Advanced Materials Analytic Center*

Source: TSMC

Impact

This comprehensive analysis turned customer insights into clear, actionable market entry decisions by:

- Prioritizing high-potential customer accounts and mapping best-fit process or material clusters based on usage & supplier density.
- Accelerating customer onboarding through targeted entry and collaboration strategies aligned to account needs.
- Establishing a local presence using differentiated approaches tailored to customer and regulatory requirements.

Conclusion

Through detailed customer and supplier assessment, IeB enabled the client to sharpen its customer targeting, refine its pitching strategy, and confidently enter priority accounts. The engagement provided a practical roadmap for supplier entry, positioning the client for sustainable growth through deeper customer collaboration and localized market presence.

Ingenious e-Brain

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