

## White Paper



### Globalization of Product Development

How High-Tech Companies are Disaggregating and Globalizing their Product Development Lifecycle

Part II: Right Product, Right Time

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High-tech companies achieve success not only when they bring their products to market quickly—but also when they create and develop the right products at the right time, that are well aligned with customer needs. In Part One of this paper, we discussed the reasons why many leading companies have extended their R&D capabilities beyond company walls in the form of global sourcing: an increased ability to adapt, be flexible, and meet speed-to-market imperatives.

However, global sourcing is no silver bullet, and companies have experienced mixed results in their attempts to leverage global R&D partners. Through our research, Infosys has identified several key characteristics that predict a company's ability to successfully leverage global sourcing partners for new product development (NPD) and new product introduction (NPI) activities. Here, we discuss these characteristics, and also present the most significant parameters to consider when defining a global sourcing operating model.

#### The Global Product Stewardship Solution from Infosys

Building upon our extensive experience working with companies at the leading edge of global sourcing adoption, Infosys has developed the Global Product Stewardship Solution. Leveraging this solution, Infosys works with OEMs that partner closely with one or more outsourcers—outsourcers who are explicitly concerned with the product's overall success in the marketplace, not just on design and engineering milestones. The Global Product Stewardship Solution offers an opportunity to leverage the outsourcing partners' expertise at almost every stage in the product lifecycle.

Organizational Maturity Model	Level 1	Level 2	Level 3
Key players engaged within OEM organization	Product engineering team only (Team Leaders, Project Managers) Executive sponsor: VP-Product Engg	Product Engineering, Marketing & Sales (Team Leaders, Project Managers, Product Managers, Sales Team leads) Executive sponsor: VP-Product Engg, VP-Sales, Head-Marketing	Product Engineering, Marketing & Sales (Team Leaders, Project Managers, Product Managers, Sales Team leads)  Executive sponsor: Corporate ownership (C-level) in addition to functional sponsors VP-Product Engg, VP-Sales, Head-Marketing
Change readiness	Teams feel threatened, desire to ring-fence and limit partner involvement driven by “selfpreservation”.	Co-existence on specific product areas. Some instances of collaboration— typically in choke-point/ bottleneck areas within the Design & Engineering efforts or with respect to customer deployments and/ or support	Collaboration for mutual benefit driven by aligned objectives to achieve product success (revenue, growth, profitability, market share)
Current levels of Remote Global Working (RGW)	Highly localized team. Only contract manufacturing and design firm are significant external entities in different geographies	Some involvement across different functions, business units and geographies from within organization as well as external entities. Mostly manual working (conference calls, meetings etc.)	Significant institutionalization of cross-border working (best capabilities/ best location combinations determine participation and ownership of specific work products).  Institutionalization accompanied by aggressive use of best practices, collaboration tools, design workbench, etc.
IP Leverage and Protection/ IP management in global context (RGW)	Improve generation, capture, and reuse of IP internally. IP Protection by non-sharing/ non-exposure with outside entities	Protection by “piecemeal” approach. Individual entities only see IP relevant to own piece of work.	Comprehensive “layered” protection through contractual controls, access management and built-in IP safeguards (e.g. encryption)
Information management & security	Closed environment	Controlled environment with localized measures for information security enforcement at open/ access points	Controlled environment with enterprise measures for information security enforcement at open/ access points. Platform for collaboration enables auditing and remedial action

## Operationalizing Global Sourcing: Assessing organizational maturity and readiness

Several key risks of globalization exist: geopolitical risk, country-specific risk, and investment risk. Because these are well documented, this paper addresses only those risks specific to the product development & engineering functions.

For example, consider IP leverage and protection. Every day, companies pursue new ways to better generate, capture, and reuse intellectual property and product knowledge; one solution is to seek global sourcing vendors. While organizations may initially be apprehensive of a potential vendor's ability to protect their IP, Infosys observes that—by obtaining a better understanding of standard global sourcing processes and procedures—their fears are assuaged. Global sourcing partners understand the criticality of protecting and safeguarding their clients' intellectual property. The most mature vendors use appropriate legal, technological, and physical measures to ensure their clients' IP is not lost, stolen, or misused; for example, they designate separate seating areas with restricted physical access, and regulate the movement of magnetic media within and outside of the premises. Additionally, vendor employees sign non-disclosure agreements (NDAs) with their clients, and confidentiality agreements with their employers.

Another risk involves managing the increased complexity and global spread of work. As clients gain experience in remote global working (RGW), they can optimally distribute work to best capability/best location combinations for specific work products. When accompanied by the aggressive use of best practices and collaboration tools—tools which enable organizations to manage far-flung design teams and leverage the benefits of a 24/7 design cycle—this distribution of work accelerates time-to-market and consequently increases competitive advantage. Managed well, this risk can be turned into a strategic advantage.

### Infosys Product Stewardship Case Study

The client is a world leader in digital media design and gaming industry, with broadcast professionals as key customers. For a professional VDR (Video Disk Recorder) product that was slated for end-of-life, the client was looking to rejuvenate the product with new feature-functionality to create an extension. Infosys conceptualized and designed an end-to-end re-engineering solution that would put the rejuvenated product at the forefront of the market. Infosys set up an overall vendor program management effort and staffed the teams to conduct the system design, design for manufacturability, test programs, and jigs. The scope of the effort was spread over 2 locations, 4 vendors, 17 engineers, and 1376 tasks.

The client realized the following key benefits:

- Infosys rationalized broadcast streams from 12 to 5
- The program brought product savings of an 8x multiple on BOM costs with a 2-4% variance in release schedule
- Met the concept & design goals with a 3% variance in schedule

Infosys was able to establish an interface early in the product life cycle with Product Marketing, which helped in the conceptualization and early-stage design. The product was successfully demonstrated at NAB (National Association of Broadcasters), and the scalability & host of features put the VDR Product far ahead of competition.

## Operationalizing Global Sourcing: Key parameters of Operating Model

Infosys observes that the global sourcing operating model evolves across five characteristics: scope of ownership and responsibility; pricing model; risk sharing; IP contributions; and partner-driven product operations leverage for OEM.

Consider, for example, scope of ownership and responsibility. In the early stages of a global sourcing operating model, the outsourcing vendor's responsibility and scope is typically limited to well defined components or software modules, and might only focus on development and testing services. In many cases, the initial client/vendor relationship may revolve around incremental releases of mature products. As the OEM gains confidence in its outsourcing vendor's capabilities, it then expands the scope of responsibility to include assembly/sub-assembly level components, with the vendor providing a project-based managed services model. At the highest level of maturity, the outsourcing partner can assume responsibility for developing entire modules or products as part of an overall product line design and engineering program. The scope of responsibility can include program management and collaborating with in-house product management teams (and, potentially, other outsourcing partners such as manufacturing) to bring together the end-to-end development of an entire product.

Another example is the evolution of pricing and risk-sharing models. Early on, the outsourcing vendor may provide resources on a 'staff augmentation' basis, and develop pricing around a time and materials model. As the relationship evolves, and the vendor begins bearing increasing responsibility for the design and development of components and assemblies, the pricing begins to shift to a 'fixed price' model for an agreed set of deliverables, based on mutually estimated efforts. Depending on the vendor's level of technology-specific capabilities, the extent to which it contributes to IP, and the level of risk it assumes, there may also be royalty or revenue-sharing arrangements with the OEM .

Infosys observes that companies will experience several stages of maturity as they globalize their product development lifecycles—evolving their operating models and achieving increasingly closer collaboration with their global sourcing partners. Companies at the leading edge of this transition are evolving from a cost-driven, transaction-oriented approach to a value-driven, program-oriented approach focused on product-market goals rather than only on deliverables and SLAs.

Operating Model Characteristics	Level 1	Level 2	Level 3
Scope of ownership & responsibility	Very defined, individual components outsourced to specific partners; done opportunistically at a transaction-level, so there is no responsibility outside of contracted delivery of code or component	Specific components consolidated to specific partners at logical assembly/sub-assembly levels—still split between hardware and software; done at a program-level, so responsibility includes schedule adherence based on knowledge of dependencies within overall Design & Engineering program	Partnering for entire modules or products, outsourcing virtually every aspect of development. Goals aligned to overall product success in the marketplace. Typically, there is a split of responsibilities between hardware and software; however, one partner takes responsibility for overall product program management along with system integration
Pricing model	Rate times hour based on skill-set requirements and estimated duration of involvement. No other payments are made	Rate times hour based on skill-set requirements with some sharing of product success payoffs	Fixed recurring costs based on mutually estimated efforts along with royalties on key components/code base
Risk sharing	None. OEM bears entire risk	Some risk-sharing through SLAs on output timeliness and quality	Significant risk-sharing through revenue upside.
IP contributions	Code/component design deliverable becomes IP of the OEM	Code/ component design deliverable becomes IP of the OEM	Most of code/component design deliverable becomes IP of the OEM; key components remain partner IP for royalty model to operate

Operating Model Characteristics	Level 1	Level 2	Level 3
Partner-driven product operations leverage for OEM	Software or hardware engineering processes only	PLM systems and processes + software and/or hardware	R&D management processes (stagegate etc)PLM systems and processes + software and/or hardware

## Concluding Remarks

Global sourcing in product development and innovation is an inevitable next stage for any company facing business pressures on basic R&D, product design cycles and new product introduction and commercialization. As development lifecycles shrink, and consumer demand continues to rise for more innovation and increased feature-functionality at a lower price point, global sourcing offers an increasingly attractive proposition for addressing these challenges.

In response, companies are disaggregating their product development value chains and relocating design teams based on best capability, best location combinations. They will experience several stages of maturity as they globalize their product development lifecycles, evolving their operating models and achieving increasingly collaborative relationships with their global sourcing partners. Companies at the leading edge of this transition are evolving from a cost-driven, transaction-oriented approach to a valuedriven, program-oriented approach focused on product-market goals rather than only on deliverables and SLAs.

As a result of such globalization, high-tech companies will reap tremendous benefits that go beyond simple cost reduction to include re-charging their innovation cycle and tapping into new streams of revenue. The ability to adapt to new market conditions, take advantage of opportunities that globalization creates, and effectively address accompanying challenges will determine the long-term winners and losers in high-tech companies.

For more than 25 years, Infosys has been a pioneer in product design and co-development in different models across multiple geographies. Leveraging extensive experience and research, Infosys creates customized solutions for companies requiring a roadmap for globalizing both their internal and external product innovation cycles—and also works in partnership in the design & development functions. While globalization offers huge potential, only companies that view globalization through a strategic lens—and execute accordingly—will capitalize on that potential. Infosys offers superior capabilities in assisting companies to leverage global partnerships that will drive product innovation and will deliver the right product to their customer at the right time, while optimizing new product development operations and controlling costs.

## About the Authors

Anil Bhatia,

*Senior Principal, Strategic Global Sourcing Group*

Anil is responsible for business development related to strategic outsourcing arrangements. He works with key clients in several industries -- high-tech, manufacturing, transportation, and media and entertainment. In this role, Anil works to guide the direction of the client's global sourcing initiative by designing the roadmap and business case, improving sourcing effectiveness, and implementing the sourcing strategy. Anil often works with senior client executives to identify and deploy sourcing strategies that provide maximum business value and best fit to the client's future direction, readiness, and risk profile.

At Infosys, Anil also provides critical inputs to the solutions team for the development of a portfolio of solutions related to outsourcing strategy, work globalization, and sourcing governance and implementation.

Prior to joining Infosys, Anil spent several years as a management consultant with EDS and A.T. Kearney, Inc. In his 17 years of consulting and industry experience, Anil has executed business transformation engagements with an emphasis on aligning business and IT strategies. He has developed an expertise in strategic global sourcing, IT strategy, and business process improvement.

Romit Dey,

*Associate Vice President, Industry Solutions Consulting (High-tech & Manufacturing)*

Romit co-heads the Industry Solutions Consulting practice for the High-tech & Manufacturing business unit at Infosys. Throughout his 13 years of consulting and industry experience in India and the US, he has been focused on Product Innovation, Customer Operations, and their intersection points. Over the years, he has engaged high-tech clients in enterprise software, telecom OEMs, high-tech contract manufacturing and consumer electronics. He has also worked on product portfolio strategy and marketing for global majors within the Pharmaceuticals industry.

Romit has been with Infosys for the past six years and has held corporate roles in new business areas (business consulting and industry solutions). While at Infosys he has advised start-up companies in Silicon Valley on product definition and offshoring strategy. Within his current portfolio, he leads a team focused on solutions in Lean Product Management and Product Lifecycle Management. Over the last year, he led research initiatives in collaboration with the ESCA on Integrated Product Management and Globalization of Product Innovation.

Prior to Infosys, Romit was a Principal Consultant in the Performance Improvement practice of PwC Consulting in the Americas geography. While at PwC, his most significant client relationship was with one of the world's largest electronics companies. While at PwC, Romit led strategic initiatives driving corporate change and operations improvement initiatives through technology deployments.



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### About Infosys

Many of the world's most successful organizations rely on Infosys to deliver measurable business value. Infosys provides business consulting, technology, engineering and outsourcing services to help clients in over 30 countries build tomorrow's enterprise.

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