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Globalization of Product Development: The Inevitable Next Stage

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

Part I: Trends, Drivers, and Benefits

- Anil Bhatia and Romit Dey

Global sourcing has become a disruptive force in high-technology manufacturing—causing dramatic shifts in how and where product components and capabilities are sourced, and where work gets done. In recent years, high-technology companies have faced mounting business pressures on basic R&D and product development operations, due to increasing consumer demand for innovative, feature-rich products accompanied by shrinking product lifecycles and declining price points. Global sourcing offers an increasingly attractive proposition for addressing these pressures, and globalization of product development is the inevitable next stage to enhance the competitiveness of high-technology companies in a globalizing world.

High-technology companies are adopting global sourcing principles in their product development operations by disaggregating their product development value chains, and relocating design teams based on best capability, best location combinations. 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 their product-market goals.

As a result of such globalization, these 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 the accompanying challenges will determine the long-term winners and losers in high-technology companies.

This paper explores the impact of global sourcing on the product development (R&D) operations of high-tech companies. Part One examines the trends, drivers, and benefits of adopting global sourcing in product development; Part Two investigates how companies are executing their global sourcing strategies by evolving their organizational capabilities.



Reduce product development cycle-time, improve time-to-market

Maximize value obtained from investments in product development

Accelerate the innovation cycle, and enhance ability to innovate

Manage the cost of product operations, for both new and mature product lines

Increase the success rate of new products, through improved fit with market needs

Figure 1 Key Imperatives for High-Tech Product Development

Product Development Key Imperatives

The high-technology industry is in flux. Companies are facing tremendous pressure to innovate and create new products at an accelerated pace, while dealing with declining price points and shrinking profitability windows. These trends are primarily driven by:

- Rapid assimilation of technology into everyday life
- Increasing consumer demand for new technologies and specialized products
- Heightened competition from players in low-cost locations
- Emergence of new business models to develop and market products

This pressure translates into several key business imperatives for product development, engineering, and marketing executives (see Figure 1).

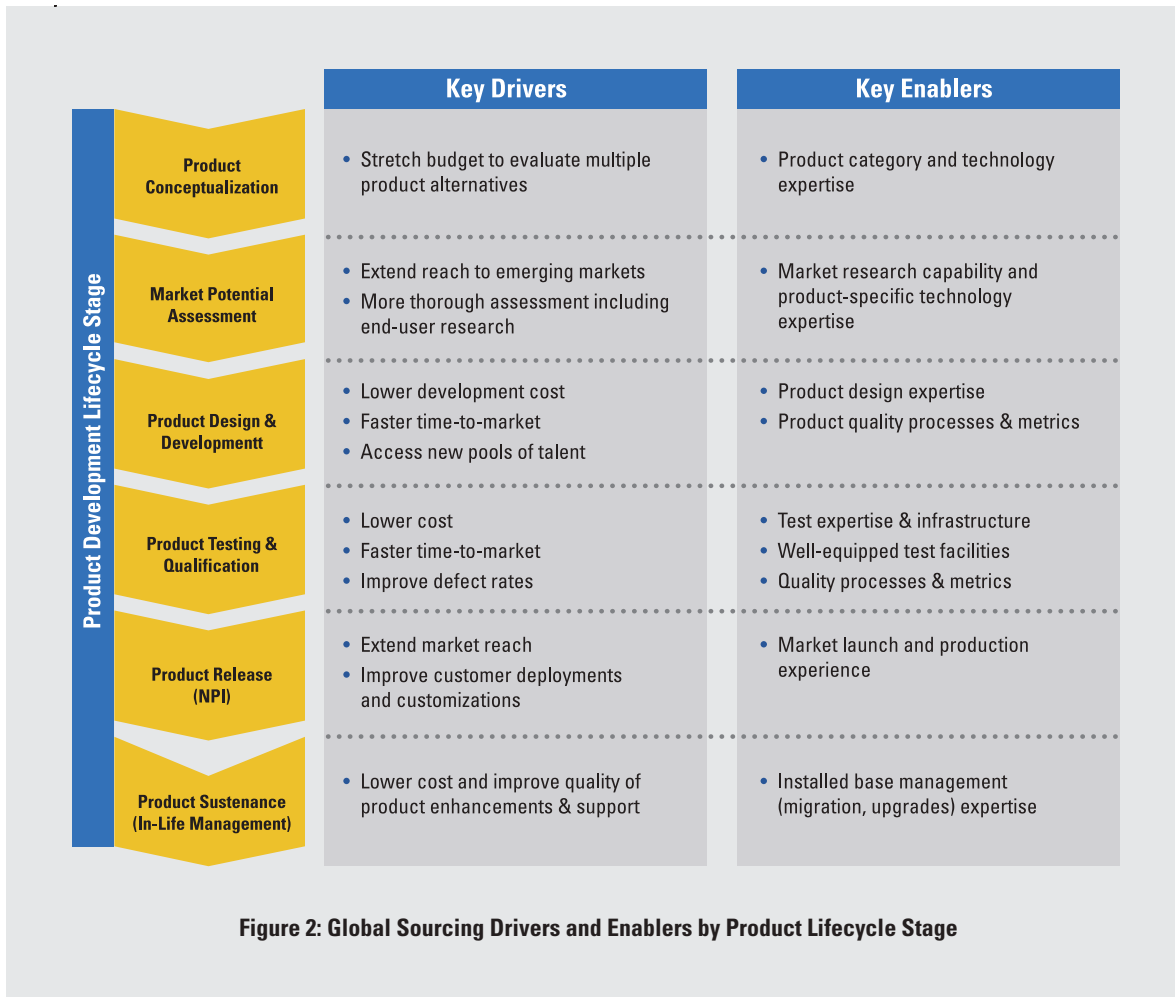
In order to meet these business imperatives, high-tech companies must contend with several key challenges in managing their product conceptualization, design, and development programs across multiple, global locations:

- **Developing product platforms:** Evolving towards product “platforms” that can form the basis for multiple product lines while fueling innovation with partners

- **Developing solutions concurrently with products:** Re-focusing product groups from being exclusively “product-centric” to being “product- and solution-centric”
- **Effectively leveraging intellectual property (IP):** Effectively identifying, capturing, protecting, and using IP from internal and external sources; maximizing re-use and re-deployment of existing artifacts
- **Managing product development costs:** Managing the costs and complexities of far flung product development operations, both within and outside company borders

Leveraging Global Sourcing to Address Product Development Imperatives

In order to address these imperatives, and their accompanying challenges, product development executives are increasingly turning to global sourcing as an attractive means to relieve some of the mounting pressures. Just as they did with manufacturing operations, high-tech companies are disaggregating their product development value chains, and moving discrete modules of work to global locations where the work is best performed based on factors such as skill set, competencies, cost, co-location of design with manufacturing, and locating closer to the customer.



Disaggregation of the Product Development Lifecycle (PDLC)

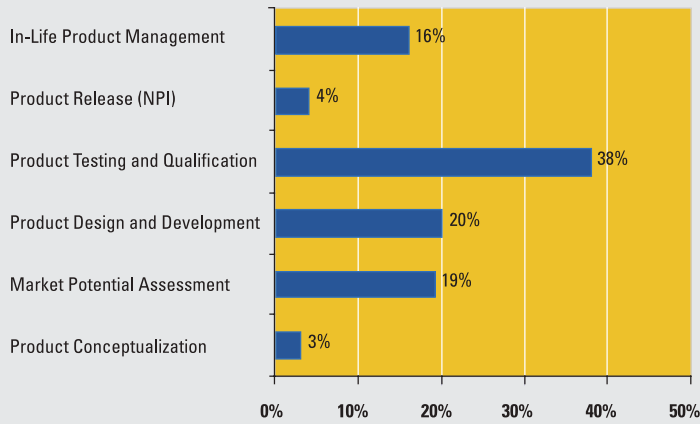
Infosys experience indicates that companies are disaggregating product development activities along the PDLC stages (see Figure 2). As companies analyze which activities can be globally sourced—which capabilities are suitable for outsourcing versus which should be built in-house—they are making decisions about what to outsource, where, to whom, and at what pace. Infosys observes a greater willingness on the part of high-tech companies to source specific aspects of product design and development from specialized partners around the world.

Our research finds that global sourcing adoption is the highest in product testing and qualification (see Figure 3). This is a relatively low-risk but high-cost area, and companies often use it to “test the waters” in outsourcing.

The next three highest areas of global sourcing adoption include product design and development, market potential assessment, and in-life product management. This adoption is being driven by rapidly improving supplier capability in core development and release management; cost reduction benefits; and access to new pools of talent.

We have also identified another emerging trend: companies are leveraging certain outsourcing partners for more sophisticated engineering and design work in some cases handing off virtually every aspect of product development to key vendors. This is particularly true when a vendor demonstrates deep capabilities in a specific area of software or hardware technology, and when these capabilities may enhance the product’s success as measured by performance, feature-set, and the price-value equation.

Which of the following PLM activities have you considered or are reconsidering outsourcing the most?



(Source: Infosys Industry Solutions Research, ESCA Forum, 2005)

Figure 3: Trends in Global Sourcing Adoption within New Product Development

Global Sourcing Stages of Maturity

Although high-tech companies are leveraging global sourcing across many stages of the product lifecycle, most companies cannot immediately engage in—or realize benefits across—all of these stages. Infosys observes a growing

maturity that allows a company to leverage global sourcing in product development progressively, with some visionary companies accelerating to a stage at which they transfer all responsibility for sustaining an existing customer base to a particular outsourcing partner (typically, this occurs with existing mature product lines).

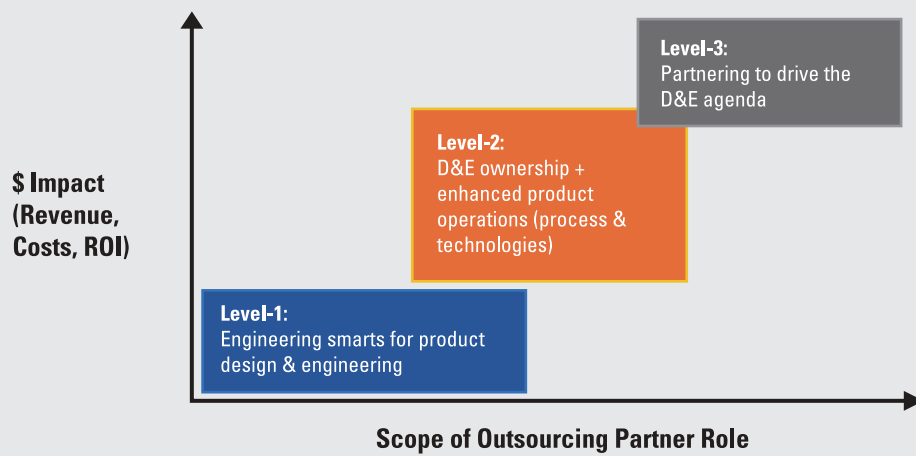
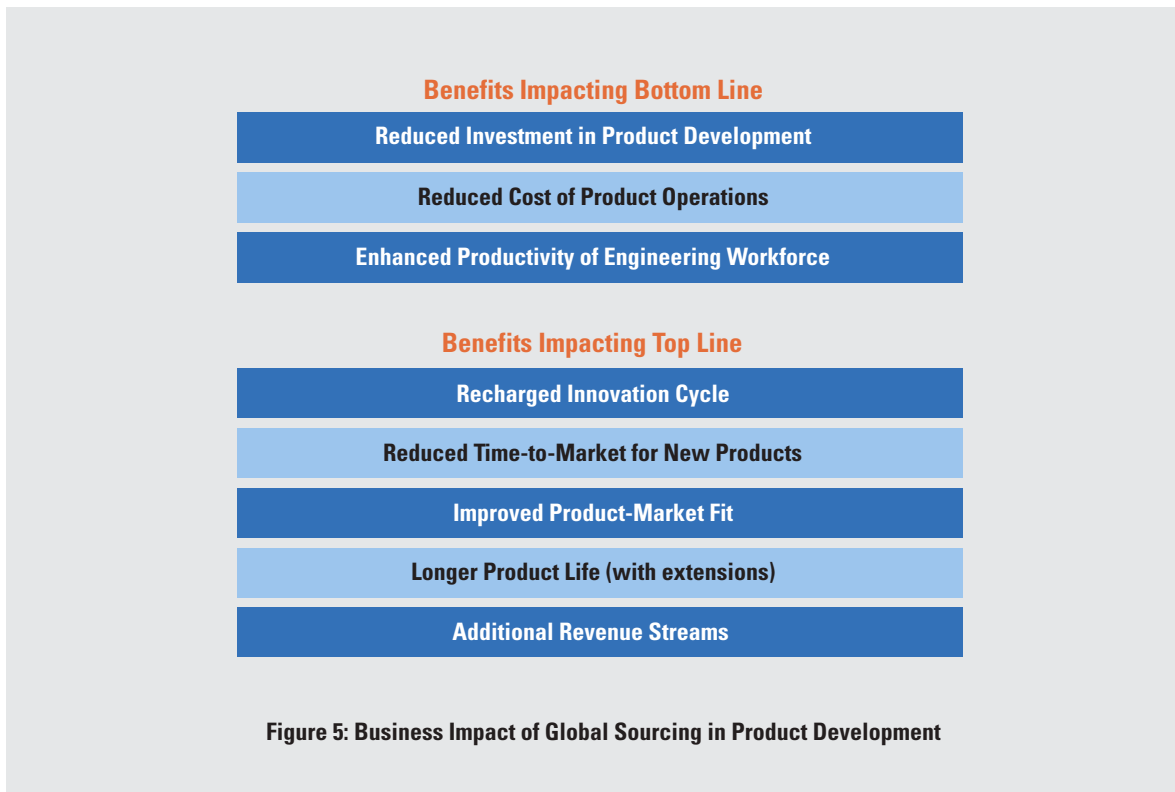


Figure 4: Global Sourcing Stages of Maturity for High-Tech Design & Engineering



Companies will go through several stages of maturity (see Figure 4) as they globalize their product development lifecycles, evolving their operating models and achieving increasingly closer collaborative relationships with their global sourcing partners. Those 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 solely on deliverables and SLAs.

Business Impact of Global Sourcing in Product Development

Companies can realize tremendous business benefits as they leverage the range of capabilities offered through global sourcing (see Figure 5).

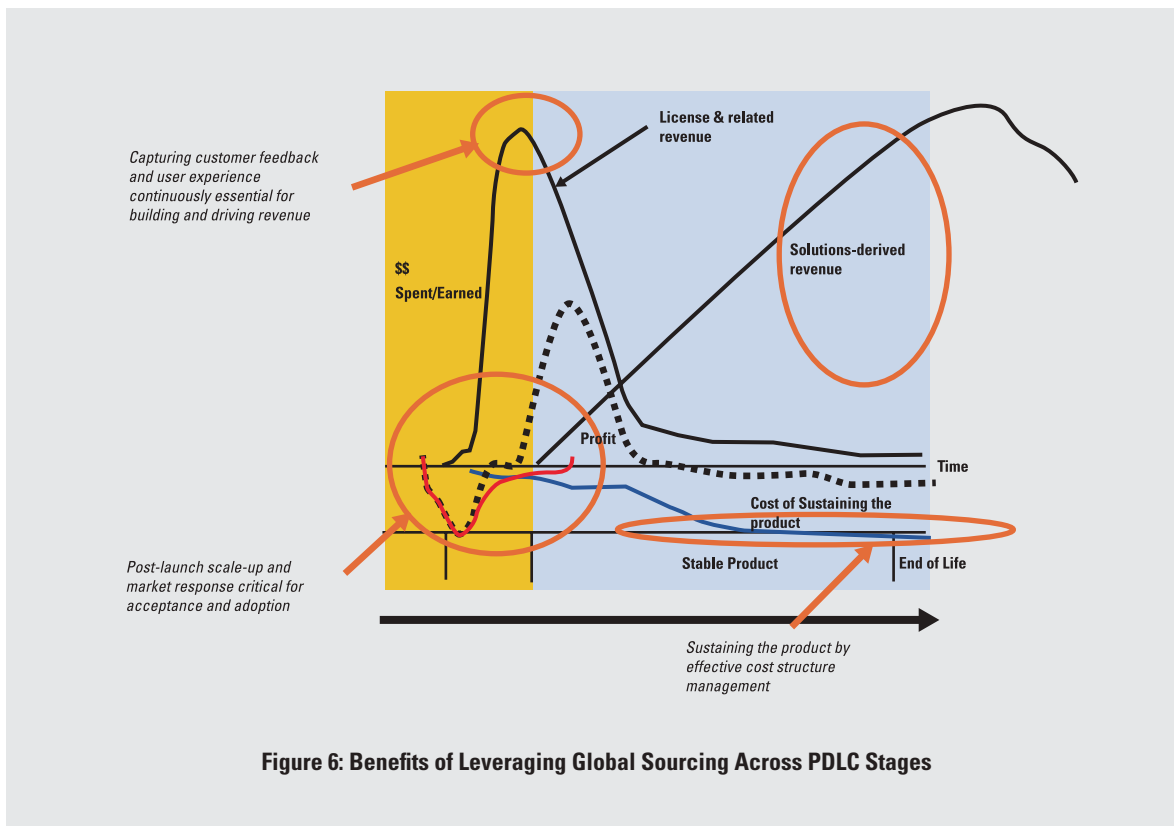
Benefits Impacting the Bottom Line

Global sourcing can not only reduce development costs by leveraging offshore capabilities in low-cost centers, but it can also enhance productivity of the engineering workforce by leveraging improved product development processes and technologies and improved program management.

Because global sourcing lowers development costs, companies can stretch their product development budgets farther—which enables better and quicker analysis of design trade-offs, and improved targeting of desired feature-functionality. This leads to more innovative products and a higher success rate for new product introduction. Additionally, reduced product operational costs extend of the profitability curve farther than otherwise possible (see Figure 6).

Benefits Impacting the Top Line

Global sourcing enables benefits far beyond simple cost reduction. Mature companies are using global development teams to accelerate development cycle times, thus meeting market demands earlier. They are also able to tap into partner expertise in specific leading-edge technologies, thus re-charging the innovation cycle and improving the relevance of their products. In this way, they are beating competitors to market with products that better fit customer needs—and the resulting increase in product differentiation is leading to the ability to command higher prices. Companies are also improving their competitive edge by



focusing internal bandwidth on more valuable product design and product line management tasks, and outsourcing either commodity tasks or more specialized tasks to their partners.

Additionally, for mature products, top line benefits can include re-casting the product line for additional sources of revenue (such as solutions-derived revenue) or extending the life of mature products with additional features, perhaps targeted toward a different market segment.

Tapping into Emerging Markets

With globalization, large Global 2000 companies have discovered that new growth opportunities exist in emerging markets such as India, China, and Eastern Europe. But selling existing products designed for western markets into emerging markets may not always work well. Companies on the leading edge of product development are also leveraging global sourcing to design tailored products that specifically fit the environment, language requirements, and other peculiarities of emerging markets, and consequently discovering new sources of revenue and market growth. In other cases,

some of these emerging markets include advanced users of consumer electronics products, and offer early venues for product launches that can be introduced in western markets later.

Concluding Remarks

Infosys believes that successful high-tech companies know when to bring the right products (those which are well aligned with customer needs) to market, and have the ability to bring them to market quickly. In a rapidly globalizing world, new market conditions are creating new challenges in bringing the right products to market quickly. The ability to adapt to these new market conditions, effectively address these challenges, and take advantage of new opportunities that globalization creates, will determine the long-term winners and losers in the high-tech marketplace.

Infosys has worked in product design and co-development over the last twenty-five years, across different models and multiple geographies. We have leveraged our experiences and research to create solutions for companies

requiring a roadmap for globalizing their product innovation, both internally and externally, as well as for those desiring a design and development partnership.

While globalization offers huge potential, only companies that view globalization with a strategic lens, and are able

to execute their strategies well, will capitalize on that potential. Infosys has superior capabilities to assist companies in leveraging global partnerships to drive product innovation, while optimizing new product development operations and controlling costs.

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related to sourcing

global sourcing program, improve sourcing effectiveness, and implement their global sourcing journey. Prior to joining Infosys in 2005, Anil spent several years as a management consultant with EDS and A.T.Kearney, Inc. During his 16 years of consulting and industry experience

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