R&D Integration

Unlocking product development opportunities in M&A

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At a glance

Managing an R&D organization is both an art and a science with many unique considerations required for integration planning.

While the R&D organization is an important source of value, broader transformational opportunities for new product development should also be evaluated to maximize value.

Identifying, valuing, and pursuing R&D and product development should begin during due diligence and be an integral part of the overall integration roadmap.

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Introduction

Research and Development (R&D) and product development can be critical sources of value in mergers and acquisitions. However, most companies find that R&D is one of the most challenging functions to integrate.[1] Though with the proper integration focus, synergies can be delivered to help maximize total deal value with benefits realized quickly after transaction close.

Aligning product and development roadmaps, retaining key talent, rationalizing product lines, and maintaining development productivity are the most common sources of value. Key considerations include how project portfolio can be rebalanced, how product platforms and intellectual property (IP) assets can be leveraged, how product complexity and costs can be reduced, and how development processes can be streamlined.

Assessing and integrating an R&D organization is an art, as much as a science, as the successful launch of products and services requires a blend of invention know-how and commercialization savvy. New product development processes are inherently people driven and market needs are dynamic.

Identifying, valuing, and pursuing R&D and product development opportunities should begin during due diligence and be an integral part of the overall integration strategy and plan.

[1]PwC's 2017 M&A Integration Survey Report

The issues our clients face, the actions we help them take

An effective integration process emphasizes the importance of getting the fundamentals of integration in place as quickly as possible during a deal to help minimize disruptions and achieve synergies. Rapidly launching integration efforts to Set the Course, Plan for and Execute Day One, and Design and Maximize Future-State Operations is a critical success factor. Figure 1 illustrates the integration process.

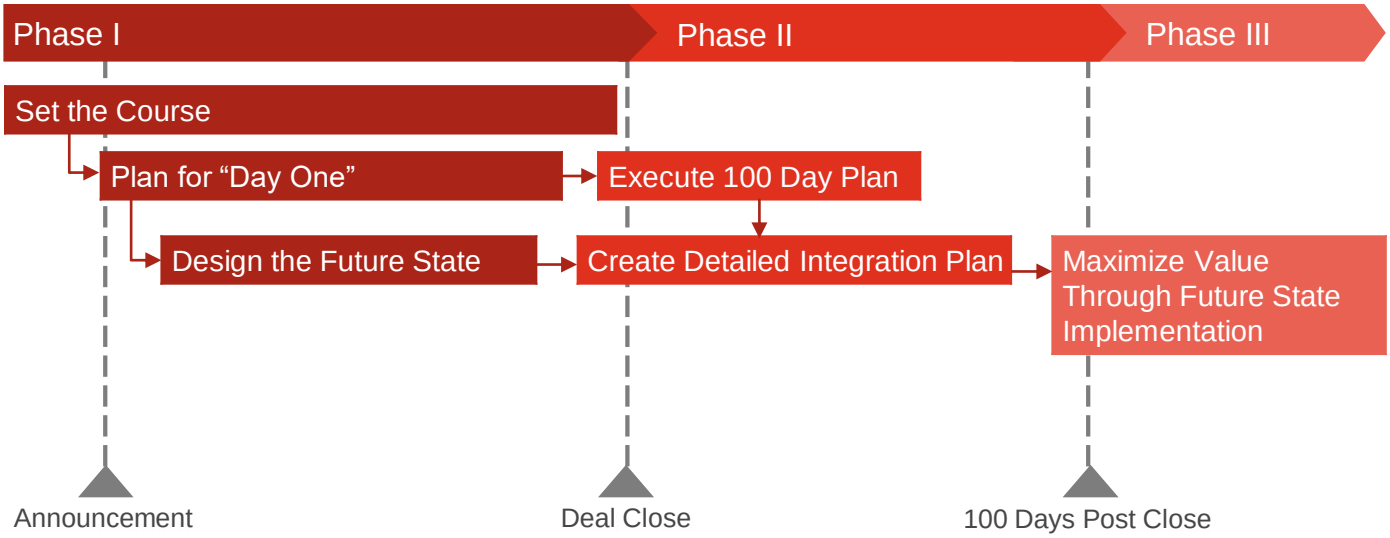

Figure 1. The PwC integration process follows a sequence of coordinated steps to focus resources and capital on the right activities at the right times.

Set the course

A merger or acquisition, like other large scale corporate change, is an excellent opportunity to set a new course, both operationally and across the various support functions of the newly combined business. Setting the course involves defining clear objectives and establishing clear leadership and role clarity during the transition. This empowers members of the integration team—including R&D—to communicate effectively and take decisive action.

Setting the course for R&D is commonly focused on the following areas and seek to answer key questions.

R&D organization structure, people, and facilities

- How will the R&D organization be structured to support the combined companies? What is the degree of organizational integration expected to support the combined product roadmaps?
- Where will development sites be located and what resources, skills, and partners will be require? Will there be changes to use of onshore, nearshore, or offshore sites?
- How will facilities, labs, equipment, and engineering software be integrated?

Product and technology roadmaps

- What is the product strategy of the combined company and how will that influence development priorities?
- What are changes to platform architecture or technology roadmaps?
- Will certain products become end-of-life or extended and will R&D need to support customer migrations?
- What are the key IP, patents, and third party relationships to harness?

Product development execution and opportunities for improvement

- What are the key metrics that will track the level of R&D throughput and value?
- What is the status and value of current development projects?
- What are product margins and quality levels?

A holistic assessment of the R&D organization and product strategy should begin during due diligence to identify key risks, develop a hypothesis of the R&D target operating model, and understand levers for deal valuation. Assessment findings are also the foundation for developing integration plans for Day One and beyond, including the structuring of potential R&D value creation or investment initiatives.

The revenue and margin contribution from the current product portfolio is only one aspect of deal value. The product and technology roadmap represent a set of future revenue options. How quickly new quality products can be launched depends on the capabilities and capacity of the R&D and product organization. Studies show that moving an R&D organization from an average performer to a top performer can drive 30%+ productivity improvements.[2] Having the right expertise and industry benchmarks helps to assess additional value and integrate them into plans early.

To manage the complex set of integration activities, it is critical to select strong leadership to run the R&D integration team. The R&D integration leader will need to effectively engage talent from both legacy companies, and understand how to navigate across multiple functions, including Finance, Product Management, Marketing, Sales, and Manufacturing, given that new product development is a cross-functional effort. This collaboration should begin early and continue throughout the integration process.

[2]PwC Operational Excellence Benchmark

Plan for and execute Day One

Even if the best decisions are made as you Set the Course, much can go wrong at close without proper planning and execution. While Day One is a milestone for celebration, it is also the time for a smooth transition of essential operations.

Target company R&D organizations are often reluctant, or legally prohibited, from sharing detailed product strategies and roadmaps until post transaction close due to IP protection concerns and anti-trust laws. Given this common limitation, integration teams should be in a position to quickly mobilize a robust methodology to rapidly assess and execute the following focus areas for Day One integration.

Focus areas for Day One integration

R&D organization and structure	R&D leadership and organization	Select the R&D leadership and draft a future state organizational chart, including new roles (CTO, VP of Engineering, etc.) to support the future product strategy. The leadership team should determine how the R&D organization will be functionally and geographically structured, and what skill gaps need to be closed. Consider headcount and staffing ratios for the combined organization and determine timing for structural changes or hiring needs.
	R&D talent	Identify key personnel and define retention strategies to mitigate loss of talent. Evaluate knowledge transfer plans, appropriate documentation and potential R&D TSA in a carve out situation if certain specialized skills are needed.
	R&D footprint and facilities	Determine the future R&D footprint based on where certain types of work need to occur based on customer, supplier, partner locations, or centers of excellence. Specialized facilities, labs, and testing equipment should be assessed against future R&D needs. Some equipment may be challenging to move or require special building conditions.
Product and technology roadmaps	Product line changes	Determine impact to legacy products based on any changes to product strategy. Communicate changes to the market and customers, particularly on plans for support, maintenance, transition and obsolescence. Competitors often take advantage of market uncertainty or confusion after an M&A announcement to get customers to switch.
	Technology platforms	Conduct technology platform diligence to understand core technology platform. For example, will SaaS-based software solutions scale to meet growing transaction volumes? Are cloud-based unit economics in line? Are there high levels of technology debt that needs to be addressed or is there investment required to achieve architecture or security standards? Or for a product company, are there embedded components, materials or ingredients that are nearing end of life and must be managed appropriately?
	Intellectual property (IP)	Determine a strategy for IP and patents, estimate their value, and plan how to leverage them to accelerate time-to-market or create new revenue or licensing opportunities. Understand how to manage any potential IP risks or infringements.
Product development execution	New product development governance	Determine how new product development projects will be prioritized, resourced, and funded. The R&D organization should continue to make progress against key efforts throughout the integration. Any changes to priorities should be communicated across all involved functions.
	Engineering IT systems	Capture the Product Lifecycle Management (PLM) systems, workstations, collaboration tools, and specialized engineering software. Understand how bill of materials (BOMs) and other product data is stored and how they will be managed going forward, especially if PLM or enterprise resource planning (ERP) systems are changing. Manage and renegotiate software license transfers, data migration efforts, and data security protocols across R&D. Collaborate with IT and Finance, as needed, for planning and budgeting.
	Technology and development partners	Evaluate spend on technology licenses and external partners. Reduce third party costs by adopting more favorable license terms or ownership rights. Consider ways to optimize the number of external development partners based on service levels, location, and legacy contract terms.
	Continuous improvement projects	Evaluate the legacy organization's set of internal initiatives focused on improving R&D productivity or reducing cost of goods sold (COGS). Rationalize these initiatives across the combined entity.

Design and maximize future state operations

R&D leadership and the integration team should focus on three primary areas as they design and rollout future state operations.

1. **Create a blueprint for the future operating model** – The new product development operating model is a key enabler for future benefits. For example, synergies may be achieved based on rebalancing work across low cost countries or partners. Opportunities to increase quality and productivity may also exist by creating "Centers of Excellence." The blueprint typically consists of an R&D organization structure, a development site footprint, development process standards, and product development governance, partner strategy, and infrastructure (tools, metrics, labs). In situations where R&D organizations are combined, a coordinated set of development procedures, metrics, and tools needs to be defined and deployed. Formal training and communications is also needed to manage the change and to ensure everyone is operating from the same playbook.
2. **Create an integration plan and transformation roadmap around the five Ps (Portfolios, Platforms, Products, People, and Processes)** – The transaction is often a catalyst for change and an opportunity to transform the R&D organization and new product development. A formal roadmap of initiatives should be planned with short, mid, and longer term initiatives identified. Savings achieved from short-term actions can fund longer term transformational initiatives.
3. **Track integration and deal value through operational metrics** – Both integration milestones and operational performance metrics can be used to baseline and measure progress against integration efforts and R&D value realization. Key performance metrics should be summarized in a set of standard chart views that executives, functional leaders, and development teams can all use to track progress against targets. This "dashboard" becomes a critical tool in tracking integration progress and achievement of the deal thesis.

Maximize deal value through the five Ps

Portfolios: Align development resources with product strategy	The portfolio of development investments defines future revenue potential. The mix of R&D efforts across innovation, product extensions, and sustaining work should be balanced with new product revenue objectives in mind. Product development pipelines are often overloaded with R&D resources spread across too many projects. This causes projects to suffer by not receiving the required resources and funding. Low priority projects that do not align to the new product strategy should be cancelled freeing up capacity. Balancing limited R&D resources against projects with the highest return should improve overall productivity and time-to-market across the development portfolio.
Platforms: Reduce complexity and cost through product and technology platform management	For product-based companies, significant benefits can accrue if platform strategies are adopted. This is where multiple product families use a shared architecture and a common set of technology components. A well known example is a common drive-train platforms used across different car models. A similar technique is used for software companies where code reuse is promoted through development standards and knowledge sharing. Both examples help lower costs, improve time-to-market, and reduce overall complexity.

Maximize deal value through the five Ps (continued)

Products: Improve product and service margins	One technique to improve EBITDA is to identify what products have poor sales or margins and then to take action with suppliers or customers. These benefits can accrue relatively quickly but the number of opportunities may be limited based on company type. Design-to-cost and supplier negotiation tactics can be used to reduce COGS on legacy products. Product tear downs or "value engineering" allow component costs to be benchmarked and can lower product cost or reduce complexity out. Full product redesigns can achieve savings in manufacturing, supply chain, and serviceability costs. For software-based products margins can be improved by optimizing cloud architecture and eliminating technology debt or number of software versions maintained.
Process: Improve new product development practices	The benefits of adopting leading development practices can be measured using a well designed Product Innovation maturity model and set of relevant benchmarks. Assessing both the parent and target company helps determine which practices should be adopted for the combined company. In addition to the portfolio management processes defined above, opportunities may also exist to enhance: • Product lifecycle management • Resource management • Software engineering, testing, etc. • Requirements management • Release management • Engineering change order (ECO) management Acquiring a company with less mature practices could be weighed as part of the deal negotiation, but can also be a source of upside. Better development practices improve productivity and lower costs, and help to manage predictability of future revenues.
People: Retain top engineering talent	Critical to any R&D organization is the quality of the people and the uniqueness of the R&D culture. Key leaders and talent must be identified as part of the diligence and retention plans should be well defined and managed through the integration process. Knowledge management and succession plans are important considerations. Coordination with the overall HR integration workstream is critical especially when addressing some of the cultural differences across technology organizations.

Conclusion

Maximizing deal value with R&D and product development requires rigorous planning and execution. An integrated plan that addresses organizational structure, product development processes, engineering IT systems, and in-market products should be developed by those who understand the industry and product technology.

Picking the right management team to lead the R&D organization and selectively implementing transformation opportunities is essential. The leaders create the vision, drive a new sense of urgency, and set the pace and tone for the future R&D organization.

Leaders should expect to have a highly visible role, especially for new product development governance as they make priority tradeoffs and begin to institute key changes across the organization.

A defined operating model and a clear product roadmap should be developed for the integration team to implement. Following the “5Ps” (Portfolios, Platforms, Products, Processes and People) should be considered to assist in delivering deal value and facilitating smooth integration of the R&D organization.

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