

# **CREATIVITY & INNOVATION**

## **MA 204-1**

### **GENERAL OBJECTIVES OF THE SUBJECT**

At the end of the course, Individuals will examine the principles of Creativity & Innovation apply them within the company's needs. You will critically reflect Innovation DNA and their behavior within the company *and* their impact in the development of this course.

## **1. CREATIVITY & INNOVATION**

- 1.1 Innovation Organizational DNA
- 1.2 The Organizational DNA Code
- 1.3 The Influence of Organizational DNA on Innovation
- 1.4 Resilient Innovation Organizations
- 1.5 Making Change Happen
- 1.6 About Booz Allen Hamilton

### **1.1 INNOVATION ORGANIZATIONAL DNA**

Innovation—the ability to define and develop new products and services and deliver them to market—is the fundamental source of value creation in companies and an important enabler of competitive advantage. In a recent study conducted by Booz Allen Hamilton, company CEOs and other senior executives cited goals for improving innovation performance that averaged 20 to 30 percent in areas like time-to-market, product quality, and development cost, in just the next two years. The bar has been set very high. Among the many factors that influence a company's innovation performance, the dynamics of the “innovation organization” (which in different companies might include some combination of the engineering, R&D, and product development functions) is perhaps the most important.

Innovation is inherently a highly cross-functional activity that, when it works well, creates a constructive tension between competing objectives of development cost, product value, performance, quality, and time to market. Product development touches every part of the company. Functions like strategic planning, sales, operations, customer support, purchasing, and finance are just as important to successful innovation as R&D and engineering. How well these very different functions work together in large measure determines how effective a company will be at developing successful products and services.

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It is common to look to an organization's structure to suggest the relative roles and authorities of these functions. Structure is often the first thing companies seek to change when they search for better organizational performance. The Booz Allen study found that over half of all companies had restructured their innovation organizations within the prior two years. Our experience indicates that there is no one right structure for a given innovation organization. Different structures work successfully under different circumstances. It also turns out that structure in itself is a poor predictor of how an organization will really behave. Independent of their organization structures, some companies seem to deftly mobilize their best capabilities to meet unexpected changes in the marketplace or competitive actions. Other companies seem immobilized by such challenges, unable to respond effectively. There are deeper factors at work. Factors that, to use a biological metaphor, are embedded in a company's **Organizational DNA**.

An innovation perspective provides an unencumbered clean sheet view of the future, as it is only concerned with what opportunities lie ahead. It prompts the organization to consider the question of "what future state do we want to achieve?" as opposed to the orchestrated approaches of strategic planning that promotes incrementalism. The perspective chosen will often determine whether an organization is a competitive innovator and competitive imitator.

In today's economic environment, organizations are required to create differentiable value. To do so requires a certain synergy between strategy and innovation. This article outlines the importance of innovation, but more importantly discusses the relationship between strategy and innovation. It argues that strategic innovation is logical, yet strategy and innovation are quite different, both in terms of definition and function. These differences are identified, and approaches to achieving synergy are outlined. **Keywords:** innovation, competitive advantage, opportunity space, strategic innovation.



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### **1.2 The Organizational DNA Code**

Just as nature's DNA spells out the exact instructions required to create a unique organism, organizational DNA determines how an organization will function. An organization can be defined in terms of four organizational dimensions—structure, decision rights, motivators, and information (see Exhibit 1). These four dimensions, when combined in myriad ways, define an organization's DNA.

Using this framework, Booz Allen developed an online Organizational DNA Profiler that has enabled tens of thousands of executives to diagnose the attributes of their organizations. Just as in the natural case, OrgDNA can lead to healthy or unhealthy outcomes. Of the seven profiles, the first three, especially the resilient organization, represent what we consider healthy, effective organizations. The last four comprise unhealthy organizations. Included in our research are hundreds of profiles of innovation organizations, representing the inputs of senior executives and middle managers in engineering, R&D, and product development functions. Over 80 percent of unhealthy innovation organizations fall into one of two categories: The Passive-Aggressive organization and the Over-managed organization. Fewer than one company in five had what could be considered a resilient innovation organization.

### **1.3 The Influence of Organizational DNA on Innovation Performance**

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The health of a company's innovation organization can be directly linked to a company's ability to generate value and growth. Companies with resilient organizations reported the best financial performance of all.

The roots of these performance differences can be traced to how the different organization types deliver on some of the fundamental requirements of successful innovation. There are many organizational characteristics that are needed to create and sustain successful innovation, but three are among the most important—speed, transparency, and accountability.

**Speed** - The increasing pace of innovation requires companies in virtually every industry to innovate faster. Speed in decision making enables companies to mobilize against new opportunities in order to capture first-to-market advantages as well as to respond quickly to changes in the customer environment or to the actions of competitors. Over-managed organizations tend to be caught in “analysis paralysis” and have a difficult time making decisions quickly. Over-managed innovation organizations also tend to have numerous layers of management.

These layers by their nature are an impediment to the information flows and decision making upon which responsive innovation depends. Each additional layer of the organization is a potential gate or handling point through which information and decisions have to pass. The result is slow decision making, as most ideas take a long time to reach the end-decision-makers. Not only does all this handling slow down information and decision flows, but it introduces additions or modifications to the original messages. These delays help create long cycle-time development processes. These lengthy development cycles open the window for changes in designs or requirements that drive engineering churn, poor quality, and even longer delays.

In passive-aggressive organizations the situation is even a bit worse. In the culture of congeniality and “everyone getting along,” it becomes hard to recognize when lack of consensus or outright resistance exists. Decisions may in fact be made quickly in passive-aggressive organizations with public agreement to a given direction. However, passive resistance means necessary actions are not actually taken by one or more key stakeholders in the process who may assume they can “just wait out” the unfavorable decision. This lack of action often does not become apparent for some time, preventing corrective action and potentially creating irrecoverable delays. In passive-aggressive

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organizations it is almost impossible to clearly prioritize the requirements necessary for orderly and streamlined product development.

Missed opportunity is the primary effect of slow innovation processes. Companies that are fortunate enough to have robust idea creation capability may be unable to capitalize on the value of their innovation due to delays in getting the ideas commercialized and introduced. The redirection and changes to requirements that are inherent in slow innovation processes drive higher costs and exacerbate delays. Additionally, every company, even the market leaders, faces situations in which it has to respond to unanticipated moves by competitors or changes in the marketplace (new customer need, regulatory changes, etc.). Slow innovators are unable to mobilize their organizations to respond effectively to these events.

**Transparency** - Transparency is the property that allows direction and action to be made visible throughout an organization. Creating transparency in engineering and R&D organizations is particularly important as senior executives often view them as “black boxes.” For effective innovation, transparency ensures that development priorities and efforts can be aligned with strategic priorities. It provides for the exchange of information between functions that is so critical to cross-functional processes like innovation. It is also the means by which the performance of the organization is made visible to senior management, enabling a “closing of the loop” between objectives and performance.

By its very nature, the culture and behavior in passive-aggressive organizations prevents transparency. This lack of transparency can have a very detrimental effect on innovation performance. Because one set of decisions and positions is voiced in public, but other agendas are carried out in practice, senior managers lack an understanding of the actual activities of the business. This lack of clarity prevents the communication and common understanding of organizational priorities, leaving key decision makers uncertain as to individual and collective goals. This uncertainty erodes the trust and collaboration between functions that are so essential to responsive innovation.

In over-managed organizations, the same multiple organizational layers that inhibit speed also limit transparency. With many tiers of communication and decision making, it becomes much harder for senior managers to get an accurate view of performance lower

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in the organization. Similarly, lower levels in the organization can become isolated from the strategic intent that should influence their priorities.

This lack of transparency manifests itself in several ways. Surprises at product launch and poor product launch performance are both symptomatic of poor transparency. Over time, lack of transparency can also lead to a poor alignment of product and service development efforts with strategic priorities. Senior executives often don't get a clear view of how actual investments and development activities are aligned with company strategy. Poor visibility can result in a significant portion of innovation effort being directed to pet projects that continue under the radar.

**Accountability** - Accountability is the glue that holds an organization together. For innovation, like other complex processes, it is the mechanism that ensures cross-functional commitments are taken seriously, and it establishes personal ownership for performance and outcomes. The top-down direction and multiple layers in over-managed organizations tend to dilute direct accountability. In this type of organization, accountabilities can be unclear, and it is often difficult to trace the commitments from the various functions that support product development and launch. Unclear decision authority within and across levels blurs the accountability for decisions and actions, which can result in widespread abdication of responsibility—everyone is responsible and no one is responsible at the same time.

In passive-aggressive organizations, the outward indications of action and agreement by responsible parties makes it difficult for senior managers to tell how things are actually progressing, limiting their ability to respond. In addition the culture of passive-aggressive organizations tolerates a degree of deniability. Responsible parties often can claim that they were not fully in agreement with prior decisions or didn't really make certain commitments.

Lack of accountability in innovation organizations shows up, among other places, in long cycle times and poor product launches. Failure to meet functional commitments results in disruptions and missed milestones. The fact that even one function can hold up an entire project implies that most schedules will slip. Poor accountability also undermines confidence in the many functional commitments that are required to make a new product or service a success. Launch readiness depends not only on the completeness of the

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product or service design but an entire set of functional preparations. For example, sales and service staffing and training, marketing collateral development, manufacturing, and logistics capacity and ramp-up are all preconditions to a successful product launch. Poor launches are often more a result of breakdowns in the overall functional preparations for launch than of any deficiency in the product or service itself.

### **1.4 Resilient Innovation Organizations**

In general, the best organizational designs are adaptive, self-correcting, and become more robust over time. The resilient organizational model comes closest to this ideal by incorporating the healthiest parts of the organizational DNA building blocks described earlier. They combine an aligned structure, logical and streamlined decision rights, appropriate motivators, and rapid flow of information. Decision rights are clear, and lines of communication tend to be shallow and broad. These characteristics allow an innovation organization to make quick, effective trade-offs between priorities, integrating elements from diverse functions including R&D, strategy, sales, marketing, operations, service, etc. Often this integration and communication flow extends past the boundaries of the firm itself to suppliers, customers, and partners.

Resilient organizations can act with **speed**, enabling them to get to market first or when needed, and to respond rapidly to the moves of others, limiting a competitor's advantage. Information flows rapidly through resilient organizations. This information flow creates **transparency** within and across layers in the organization. Lower levels of the organization have a clear understanding of company priorities and direction.

This insight helps ensure resources and activities are deployed in alignment with those priorities. Senior managers receive a rapid and unadulterated assessment of the performance of the organization. Intervention is possible, and emerging issues can be dealt with before the situation becomes acute. Transparency increases overall management confidence, reducing the need for frequent time-killing project reviews and updates and minimizing the chances for redirection. Finally, resilient organizations are **accountable** organizations. Clear decision rights and performance transparency increase personal and collective accountability. When undesired outcomes occur, they can be evaluated for cause because the traceability of actions and decisions is preserved.

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Resilient innovation organizations tend to be more nimble, efficient, and effective at developing and commercializing new products and services than other organization types. The advantages of more effective collaboration show up in higher quality products and services that hit the market ahead of competitors, offering value that customers are willing to pay for. Not surprisingly, the consequences are reflected in the high financial returns these companies achieve.

**Reengineering Organizational DNA to Improve Innovation Performance** - The clear benefits of healthy OrgDNA and negative consequences of unhealthy OrgDNA make it worthwhile to investigate how companies can make their organizations more resilient. Fortunately, unlike biological DNA, organizational DNA can be reengineered. Reengineering an organization's DNA requires the purposeful rewiring of the four intertwined building blocks.

***Decision Rights - Remedy #1: Making decision authorities and responsibilities as black and white as possible is essential to streamlining decision flows.*** In particular, this means clearly differentiating the issues and policies that should be decided on a global or company-wide basis from those that require local focus. For example, decisions affecting common processes and product architecture clearly need to be set and enforced at a cross-site or group level. Resource management and customization of products for local markets are decisions that should reside at local or regional levels. The clarification of roles is easiest in flat organizations that optimize spans of control and minimize additional management layers.

Recent studies suggest that the BPR (business process reengineering) success rate may be as low as 30 percent; benefits are not sustained over the long term. A core problem is that companies often reengineer too narrowly, viewing the issue solely as a matter of identifying and grouping related business activities. If BPR benefits are to persist and drive ongoing value, more is required—companies must adopt new forms of process governance that are appropriate to a new process orientation.

***Remedy #2: This task requires that companies identify and empower the “process owners”—the business unit or functional managers who lead the revitalization of business processes and who will be accountable for its success.*** Effective process

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improvement cannot be just adoption of best practices without taking into consideration real cultural differences that exist between companies.

**Information** - Any complex, cross-functional process like innovation requires intensive exchange of information. That information needs to be communicated quickly and accurately to the parts of the organization that need it in order to coordinate their activities. Effective communication requires not only the development of actual channels of communication, but on cultural and incentive mechanisms that promote a willingness to seek and share information.

***Remedy #3: A set of established performance measures is key to creating transparency and accountability in the organization.*** In product development, this set needs to include both in-process and outcome-based measures as well as predictive measures that provide more early insight of future outcomes. For example, actual milestone completion versus schedule is an outcome measure—it can't be measured until it happens. Development resources staffed versus those planned is predictive in that if resources are below plan, it is likely that milestones will not be completed on time—this can be measured in process, long before milestones are reached. Having a set of measures is valuable only if there is a system in place to make these metrics visible at all levels in the organization.

***Remedy #4: A formal mechanism for reviewing measures and linking them with objectives and targets is the means for organizations to close the loop on performance.*** Specialized and support functions, for example in special product testing facilities, are often treated as cost centers. The expenses for these activities end up being recovered through cost allocations to profit centers. While this arrangement is frequently adopted due to the difficulty of direct cost accounting and internal transfers, it acts to obscure information about the real value and demand for these functions in the organization.

***Remedy #5:*** While not appropriate in every case, forcing the costing and pricing of some of these traditionally cost center functions improves information about how the services are valued and deployed.

**Structure** - As mentioned earlier, there is no one right structure that works best in every innovation environment. Forms with stronger functional or product focus have

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advantages in different situations. Historically, it was most common for product development organizations to be structured with strong authority around products or functions—two opposite ends of the spectrum.

Whatever the structure, multiple organization layers and narrow spans of control often result in excess bureaucracy and bottlenecked decision making. Employees are hamstrung by vertical decision making and multi-matrixed reporting relationships. Their career prospects are not enticing and their creativity is diminished.

***Remedy #6: The objective in streamlining an hourglass organization is not just the obvious potential for reducing excess cost, it is the attendant opportunity to increase revenue by simplifying decision making, enhancing customer responsiveness, and improving innovation.*** Our experience is that management spans on the order of one to ~12 or higher are a best practice in engineering organizations.

Every organization has “shadow staff,” people performing tasks that duplicate those performed elsewhere in the organization, typically by corporate functions (e.g., HR, finance, IT). These positions can add another 30 to 80 percent to total support staff head counts. Shadow staff serve as “workarounds” for failed or inadequate processes and functions in the service delivery model. In addition to the direct costs of duplicated labor, there are collateral costs associated with breakdowns in communication and cooperation between organizational units.

***Remedy #7: Rooting out and eliminating or redeploying these shadow staff resources is a key to improving organizational performance.*** Career paths that provide for fast progression of star performers is a positive motivator for attracting and retaining high potential staff. In innovation organizations it is important, however, that this fast track progression also provide people with a broad exposure to the numerous functions and roles that are included in product or service development.

Career paths that encourage rapid advancement to senior levels in vertical functions without this exposure work against building cross-functional understanding and collaboration. This is not to advocate that everyone needs to be a generalist, however, the benefits of a broader perspective are real even in technology areas in which a high degree of focused R&D expertise is required.

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*Remedy #8: Managing the career path and ensuring rotations in different geographies, functions, and roles is important to the development of well-rounded senior managers of product development.*

**Building Block 3: Motivators** - Many of the remedies to decision rights, information, and structure serve to promote a higher degree of employee satisfaction and motivation in an organization. There should be no doubt that organizations with clearly defined roles and responsibilities, effective and fluid communication, and accountability enforced through objective performance measures will be more motivating than those without these characteristics.

No attempt will be made here to address all the aspects of personal motivation, but one tool stands out in importance.

*Remedy #9: An organization that creates objective evaluations based on clearly defined performance measures, then assesses and ranks individuals according to a normal bell curve distribution creates a real sense of differentiation that is both motivating and rewarding.* These remedies should not be considered a complete road map for the complex organizational and cultural changes that are needed to create a resilient innovation organization. They can, however, help senior executives set priorities and prepare for change.

### 1.5 Making Change Happen

Senior executives continually lament the amount of time they spend wrestling with organization problems rather than building their business. From the CEO on down, business leaders routinely express variations on the same fundamental themes—  
“We have the right strategy and a clear action plan, but we can’t seem to execute.”

First, to succeed the change needs to be led from the top. Senior leadership must set and communicate the vision for the organization, including a compelling case for change. It needs to reach a practical understanding of what can be leveraged in the existing culture and what needs to change. There is possibly no more powerful source of potential disruption and angst in a company than organizational change. A senior leadership that is visibly and vocally committed to the new direction can go a long way toward mitigating the uncertainty of change and the attendant risks. Senior leaders cannot afford to be involved at arms-length; they must be actively involved in monitoring and testing the

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change process. Most importantly, senior leaders need to ensure they act in ways that reinforce the new behaviors—“walk the talk.”

Next, the change needs to cascade down through the organization. A key here is enlisting a core group of midlevel managers to act as change agents or zealots to lead the change effort. This core will need to work cross-functionally to detail the organization design and to communicate and promote the changes across all levels in the company. Details of how new tools/processes work is fully designed. Analysis is performed to ensure that incentives/rewards are consistent with new desired culture. This core group will prepare the organization operationally and emotionally for change. Lateral communication mechanisms are identified to break down the functional silos and generate buy-in and enthusiasm in the management ranks. To be credible and effective, senior management must empower this group with the necessary decision-making authority. That empowerment must be then closely linked with expectations in the form of a set of performance-based outcomes (e.g., the progress of the organizational change, actual organization performance in terms of productivity, quality, etc.).

Finally, to truly succeed, the change needs to mobilize the base of the organization. New tools are embedded in how the work is actually performed. This requires intensive effort to communicate and socialize the changes to the organization. The organization needs intensive communication including workshops to create understanding in frontline employees. The transition cannot be successful, and will not be adopted, until employees fully understand the answer to what is invariably their most important question: “What does this change mean to me?” Communication alone is insufficient; once understood, management needs to reinforce expected behaviors by a consequence management process. Appropriate forums need to be created to recognize early successes and share lessons learned. Ultimately, the degree to which the changes stick depend on how measures and feedback systems create ownership and accountability.

We believe the importance of innovation to future growth and shareholder value will continue to increase in the coming decade—and beyond. In a recent Booz Allen study, over 80 percent of senior executives viewed innovation as being critical to meeting their companies’ strategic objectives. For many companies, innovation will be central to both top-line growth and profitability. Among the many factors that influence a company’s ability to innovate successfully and competitively, the resilience of its innovation

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organization is perhaps the most important. It is also a factor that senior executive have a real opportunity to change.

### 1.6 About Booz Allen Hamilton

Booz Allen Hamilton has a long history of helping companies build competitive advantage through innovation. Based on our experience, truly standout innovators have well-developed abilities in three key areas:

- **Product Strategy** An ability to consistently make the right bets on new products and supporting technologies.
- **Products Architecture** An ability to optimize product attributes to create differentiated products that profitably deliver customer value.
- **Product development** An ability to bring more new products to the market—at target costs—with speed and efficiency.

These abilities are founded on a set of very identifiable supporting process and organizational capabilities that are the levers of innovation performance. The bar is higher than ever. To clear it, managers will need not only to understand these levers of innovation performance, but also to create the conditions that enable a systematic ongoing process of improvement.

**What Booz Allen Brings:** Booz Allen Hamilton has been at the forefront of management consulting for businesses and governments for 90 years. Booz Allen, a global strategy and technology consulting firm, works with clients to deliver results that endure. With more than 16,000 employees on six continents, the firm generates annual sales of \$3 billion. Booz Allen provides services in strategy, organization, operations, systems, and technology to the world's leading corporations, government and other public agencies, emerging growth companies, and institutions.

Booz Allen has been recognized as a consultant and employer of choice. In a recent independent study **Brings** by Kennedy Information, Booz Allen was rated the industry leader in performance and favorable client perceptions among general management consulting firms. Additionally, for the past six years, Working Mother has ranked the

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firm among its “100 Best Companies for Working Mothers” list. And in 2005, Fortune magazine named Booz Allen one of “The 100 Best Companies to Work For.”