

# Transforming the U.S. Air Force

## An Interview with John Gilligan



John M. Gilligan is CIO of the U.S. Air Force. Prior to assuming this position, he was CIO of the U.S. Department of Energy. He received his B.A. in mathematics from Duquesne University, his M.S. in computer engineering from Case Western Reserve University, and his MBA from Virginia Polytechnic Institute and State University.

**IKSM:** What does “transformation” mean to you and why is it receiving so much attention now rather than, say, five years ago?

**Gilligan:** I define “transformation” as changing the fundamental processes that an organization uses to conduct their primary missions. In changing these processes, an organization seeks to operate more efficiently and effectively. As CIO, I become a strong partner and catalyst within the Air Force for transformation because information technologies enable many transformation opportunities.

Transformation has become one of the hottest topics in industry and, more recently, even in government circles. The increasingly competitive environment in which all organizations operate demands regular and significant improvements in efficiency and effectiveness, not just fine tuning what we have been doing. In particular, organizations are increasingly looking for opportunities to reduce cost. For many organizations this is not a matter of profit margin, but one of fundamental survival. In the Air Force, we are trying to reduce costs in our support functions to permit us to perform well our military operational missions. We can no longer afford the continued increase in the percentage of our budget that is allocated to mission support activities. A rough estimate is that we currently spend more than 60% of our budget on these support activities. At the same time, we are finding it increasingly difficult to find sufficient funds for spare parts, aircraft fuel, and modern weapons.

**IKSM:** What is most difficult about transformation, particularly in government agencies? Are these difficulties more or less problematic now than in other times?

**Gilligan:** The fundamental culture and experience base in government agencies is to make the government “system” work. There is little experience with changing ways of doing business, especially at the very rapid pace associated with true transformation. In general, government employees operate within an established structure and with longstanding processes — a bureaucracy. For many government employees, their primary skill is in making the enormous bureaucracy of existing organizations and processes function. We have not trained government leaders to be catalysts for change.

Despite past culture, leaders of government organizations are beginning to embrace transformation as an important, and in some cases an essential, element of their leadership strategy. Increased public expectations of government and budget pressures are forcing fundamental evaluation of ways of re-

ducing cost and improving service delivery. Government organizations are looking at fundamental transformation as a solution. Government organizations like the Department of Defense are viewing transformation as essential to meeting military commitments within budget constraints. The Internal Revenue Service is looking at transformation to reduce operating costs and meet expectations of an increasingly technically literate citizenry. In short, the government culture of making the bureaucracy function is starting to give way to a culture that encourages government employees to embrace and facilitate change as an essential part of government service.

**IKSM:** It is widely believed that information technology can provide the basis for transformation. How specifically do you see information technology providing leverage? Are some elements of this technology more important than others?

**Gilligan:** Transformation usually involves changes to key business processes that are supported by information technologies. Modern IT permits immediate access and flexible integration of information to support rapid decisions and streamlined processes. The result can be more accurate status of operations, reduced decision cycle times, and fewer manual tasks, permitting realignment of valuable staff to higher priority functions. In many instances, the information systems are designed to eliminate many process steps and to support customer self service 24 hours a day.

I believe that the ‘World Wide Web’ is probably the most important element of information technology that is supporting transformation. The Web has allowed the elimination of boundaries and seams among networks and systems. The Web supports simple, yet universal access to information through a common and simple tool — a browser. The browser permits access to enormous volumes of information and services quickly and at low cost. The web has also greatly simplified the process of IT solution development. Other important information technologies are the so-called “middleware” products that facilitate rapid redesign of processes without requiring redesign of current legacy applications. Likewise, Enterprise Resource Planning (ERP) systems provide integrated business system solutions that support transformation through adoption of proven business processes. Often, middleware can support rapid process evolution for the short term, while ERP solutions provide the desirable longer-term option. Finally, I also see expanded delivery of services through hand-held personal devices continuously connected to wireless networks as facilitating tremendous opportunities for transformation in the future.

**IKSM:** Beyond information technology, what other considerations are central to successful organizational transformation? In what ways are these considerations critical to being able to leverage information technology?

**Gilligan:** There are three considerations that I would offer. The first two are tightly linked with use of information technology to support transformation. These are process change and culture change. Transformation most often requires change to processes. However, this is not an easy task. Nor are most organizations well experienced in managing process changes. A closely related consideration is people or culture change. A superb information technology solution that implements well-engineered processes can fail if the people who are affected do not accept the change. I believe that each of these areas requires the same disciplined approach and resources as the task of building the information technology solution. This means clearly defined plans, teams who are accountable for both process and culture change efforts (in parallel to IT teams) and necessary resources (usually much larger than the resources required to implement the IT solution). A third consideration is proactive involvement from the top leadership in an organization. I have found this to be absolutely essential for a successful transformation. Ideally, the catalyst for the transformation is the chief executive in the organization.

**IKSM:** To what extent does transformation, including both the technology and people sides of transformation, differ for Air Force military operations and Air Force business processes? To the extent that there are differences, how do they affect your overall strategy?

**Gilligan:** Transformation of Air Force business processes has many direct parallels with similar industry efforts. Therefore, there are a significant number of opportunities to leverage commercially available and proven processes and technologies. For example, I see significant potential to use commercial business applications software to meet military business needs. In most cases, this will require us to significantly modify our business processes; however, I see this as very similar to challenges faced in industry.

Air Force military processes, on the other hand, have few direct parallels in industry that would support direct adoption of industry processes or software applications. Nevertheless, from my perspective as CIO, I see a number of opportunities to dramatically improve our military capabilities by leveraging information technology following similar strategies as industry. For example, in the military we can achieve significant military advantages in employment of our forces by linking geographically distributed organizations and “nodes” (including air and space craft). We can also effect more efficient distribution of information leveraging Internet and web-based technologies.

With regard to the people side of transformation, I find that the military operations side of the Air Force is very open to adoption of transformational concepts and technologies. The culture of the military operations emphasizes continuous improvement to achieve a decisive military advantage over potential adversaries. On the other hand, I observe that the business support areas often have more difficulty adopting transformational concepts. This may stem, in part, from a cultural tendency to not disrupt support functions that are critical to military operations.

My strategy for the business support areas is to move toward adoption of commercial processes and solutions in order to leverage the investment that has been made by industry. While today there are major differences between Air Force business processes and commercial processes, there are many opportunities to reduce these differences. The biggest challenge tends to be overcoming cultural reluctance and devising appropriate system and process transition strategies. This requires very strong and proactive leadership from the most senior levels of the Air Force, including the Secretary and Chief of Staff. Similar strong leadership is required to effect transformation in the military operations areas and to keep the transformation efforts properly focused.

**IKSM:** Your responses thus far portray the U.S. military, to a great extent, playing “catch-up” with commercial practices. Are there any areas where military practices, or perhaps military R&D investments, are ahead of industry in terms of technologies, best practices, etc.? Are these areas where industry can gain from participating in the DoD market? If so, can you provide a couple of examples?

**Gilligan:** Perhaps the impression that the Air Force is playing “catch up” reflects my personal desire to have the Air Force be second to none in leveraging best practices. In my answers, I have observed that there are commercial firms on the leading edge of transformation and have provided a number of good models for the Air Force as we strive to be the best. However, I also see many commercial firms that have not embraced transformation.

With regard to areas of military best practices, I believe that there are several areas where the U.S. military has demonstrated clear leadership in the IT arena. Perhaps the most significant and relevant in today’s environment is in the area of cyber security. The military has pioneered use of security technologies such as encryption, intrusion detection, as well as incident analysis tools. In addition, the military has developed and matured processes and procedures for cyber event warning and cyber defense that are being copied in civilian applications. Military research in cyber security has also made

major contributions to the underlying technology used in commercial security products.

The Department of Defense research community has fostered many of the underlying technologies that continue to fuel the Internet revolution — starting with the Internet itself which was the product of DoD research efforts. These research efforts span the full spectrum of IT technical disciplines. I would also note that due to the size and complexity of military organizations, DoD has also provided leadership in dealing with very large applications and data bases, as well as developing processes to ensure correctness of mission critical or life-critical applications (e.g., to ensure flight safety).

In summary, it is not a one-way street. The military community is making significant contributions to IT best practices.

**IKSM:** Considering your foregoing observations on transformation, what do you see as the role of the CIO, as well as his or her organization, in transforming an enterprise? How does this differ from, as well as complement, the role of the chief executive(s)?

**Gilligan:** I see the primary roles of the CIO as the following: a catalyst for transformation; a technically knowledgeable partner in the development of IT solutions; and advisor to top management. As a catalyst, the CIO helps identify transformation opportunities across the enterprise and helps envision the potential future state. The CIO organization also partners with the business leaders of transformation efforts in order to ensure the IT solution meets enterprise standards and properly leverages available technologies. As an advisor to top management, the CIO provides oversight of parallel projects supporting transformation objectives. In particular, the CIO advises management regarding whether transformation projects are meeting both business and technical goals of the enterprise.

I see the CIO role as complementing the chief executive's role. The chief executive must establish the overall vision and prioritization that forms the basis for the transformation. Moreover, chief executives must take lead with regard to approval of process changes, as well as the cultural changes that are a necessary element of process change. In addition, the chief executive has responsibility for evaluating the business case and making the resource commitment for the transformation project.

**IKSM:** Thank you, Mr. Gilligan, for your insights and ideas regarding how to think about and pursue organizational transformation, particularly in complex organizations such as mission-oriented government agencies.