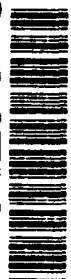


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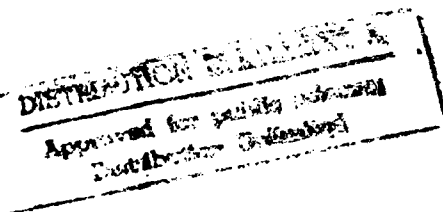


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Managing Change: Converting the Defense Industry

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Abstract

Defense conversion is a part of the changing defense industrial posture. It brings the issue of governmental industrial policy into conflict with America's historical opposition to central planning.

This research paper explores the issue from the perspective of commercial firms' strategic planning process and the structural, political, human resource, and symbolic frames of Bolman and Deal's organization behavior theory. The multitude of stakeholders requires an integrated perspective and policies which simultaneously satisfy the goals of the stakeholders in each frame.

Congress established the Defense Conversion Commission to recommend actions and policies for this effort. It concluded that conversion does not pose extraordinary problems for the nation. It recommends coordinated planning for integrated federal, state, and local programs (most already in existence) and management by the Executive Office of the President.

This research paper concludes that the defense conversion effort is actually a transition which isn't extraordinary when compared with previous efforts. Normal economic restructuring is taking place and government's safety net is in place. It's manageable but requires an integrated, high-level manager. The political pressures to answer vested interests' demands for special attention is potentially costly and misguided. Alas, actual plant conversion is a myth and a fad which should not be a major government or public focus. However, when it's defined as shifting people, skills, technology, equipment and facilities into alternative economic applications, it is very important that it be done right in order to preserve our national security and maintain the capability to reconstitute or mobilize in a national emergency.

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"...the most important influence on a nation's responsiveness to change probably is its social attitudes, religious beliefs, and culture."¹

Paul Kennedy

Managing Change: Converting the Defense Industry?

Introduction

Just what is defense conversion? Why is it important and how do you manage it? It seems that there is no end to the articles, books, and organizations which are using the term for their own and their constituent's purposes. It's difficult to follow the arguments and judge the proposals because the term just isn't defined well with respect to national security and is used differently by almost each politician or government official. With wide use of an ambiguous term, it's no wonder that there tends to be confusion or miscommunication between the public and the various government or industry officials who are using it. In the 1992 presidential campaign, the candidates expressed different perspectives.² George Bush answered the question, "What is our plan for defense industry conversion?" by emphasizing job retraining, stimulating investment and savings, and urging adoption of the educational initiative of his administration, *American Education 2000*.³ Ross Perot answered the same question with an emphasis on preventing the deterioration of our industrial base, converting defense industry to the industries of tomorrow, and ensuring that the government and industry work together.⁴ Bill Clinton couched his answer in terms of developing a good plan and reinvesting every dollar of defense cuts in technologies of the future.⁵

¹Kennedy, Paul, *Preparing For the Twenty-First Century*, (New York: Random House, 1993), 16.

²Presidential Debate between George Bush, Ross Perot, and Bill Clinton on 11 October 1992.

³Ibid.

⁴Ibid.

⁵Ibid.

The nation's security depends on a robust industrial base which can satisfy both peacetime and wartime needs. In a time of relative peace, the nondefense sector demands more of the nation's resources and the defense needs compete less favorably as commercial enterprise absorbs private funds and nondefense government policies absorb decreasing public funds. Now, after the end of the cold war, the federal defense budget is in a freefall and downsizing the defense effort and converting the defense industry are the "orders of the day".

The presidential candidates, economists, defense industry spokesmen, and politicians of all kinds are concerned about the potential loss of over two million jobs since 1991⁶ caused by the downsizing of the defense effort. With the end of the Cold War, the United States has an opportunity, and some say an obligation, to reduce defense expenditures after forty-five years of large defense budgets. The size of the reductions seems to portend dramatic effects on the economy. Conventional wisdom and past experience with conversion, such as the drawdown after World War II, might predict a dramatic degradation of defense posture and an economic slump. However, the experts don't expect that to happen during the current drawdown of the military effort.

In this paper, I will discuss these approaches and others to the economic adjustments of firms that produce defense products as they relate to developing a long term business strategy. I'll define the term "conversion" for use in this paper. My structure will be an examination of the future of conversion in terms of Bolman & Deal's frames (structural, human resource, political, and symbolic)⁷ for understanding organizational behavior. It will include a review of the recommendations of the Defense Conversion Commission. I'll conclude with some recommendations on the criteria which should be used to evaluate conversion and which improve the program's chance for

⁶U.S. Congress, Office of Technology Assessment, *After the Cold War: Living With Lower Defense Spending*, (Washington, DC: U.S. Government Printing Office, February 1992), 3.

⁷Bolman, Lee G. and Terrence E. Deal, *Reframing Organizations* (San Francisco: Jossey-Bass, 1991), 15.

success. It's a public policy issue which requires serious consideration of all points of view rather than professing a *laissez faire* attitude to industrial policy.

Why worry?

Just what is the defense industrial base? The national security strategy defines it as "...a complicated network of contracting, subcontracting, and vendor firms, as well as Defense Department maintenance depots."⁸ It further states that the defense industrial base must:

-
- "In peacetime:
 - Provide an advanced research and development capability.
 - Provide ready access to civilian technology.
 - Provide a continuous design and prototyping capability.
 - Place increased focus on innovative manufacturing techniques that provide the capability to incorporate rapidly and cost effectively the most advanced technological improvements into our armed forces.
 - In conflict
 - Be capable of surging production of essential warfighting items prior to and during a contingency operation.
 - Have the capacity to restore, in a reasonable period, the war reserve stockpiles of items that were consumed.
-
- Be able to reconstitute forces."⁹

How big are the anticipated cuts? The size depends on the perspective of the group or individual making the plan. The Bush administration planned for a \$60 billion cut over the next five years. The Clinton administration campaigned on an estimated additional \$40 billion cut in the same time period and its latest economic plan calls for a \$76 billion cut during FY94-97 (\$136 billion total). The consistently low estimate is that of Congress' Office of Technology Assessment and shows a \$169 billion defense budget, 1.34 million in the active duty military forces, 697,000 in the defense civilian workforce, and a

⁸The White House, *National Security Strategy of the United States*, (Washington, D.C.: U.S. Government Printing Office, 1993), 15.

⁹Ibid.

defense industry of 1.5 to 1.62 million persons in 2001.¹⁰ These estimates reflect losses of 23%, 19%, 26%, and 18 to 28% respectively from 1991 figures.¹¹ While seemingly large, the Defense Conversion Commission feels that "...larger drawdowns have been accomplished successfully in the past..." and "the long-term aspects are neutral or positive...."¹²

Table 1. *Comparison of Previous and Current Defense Drawdowns*

Defense Spending as a Percent of Gross Domestic Product

Era	Peak		Low Point		Difference		Average change Per Year (%)
	Year	GDP %	Year	GDP%	Years	GDP%	
W.W.II	1944	39.3	1948	3.7	4	35.6	8.90
Korea	1953	14.5	1956	10.2	3	4.3	1.43
Vietnam	1968	9.6	1978	4.8	10	4.8	0.48
Current	1986	6.5	1997	3.6	11	2.9	0.26

Source: Defense Conversion Commission. *Adjusting to the Drawdown*. December 31, 1992.

Table 1 shows that defense spending, as a percent of gross domestic product, is not as large as it was during previous defense conversions or transitions. With that in mind, you can say that the U.S. economy should be able to absorb the impact with comparatively fewer problems than were experienced in the past (assuming that other factors do not exacerbate the situation).

¹⁰U.S. Congress, Office of Technology Assessment, *After the Cold War: Living With Lower Defense Spending*, (Washington, DC: U.S. Government Printing Office, February 1992), 3.

¹¹Ibid.

¹²Report of the Defense Conversion Commission, *Adjusting to the Drawdown*, (Washington, DC: U.S. Government Printing Office, December 31, 1992), 10-11.

How do you define *conversion*?

The definitions of conversion indicate a person's approach to the problem of how to reduce defense priorities and still retain an adequate national defense posture. The answers of the presidential candidates, cited in the beginning of this paper, reflect a political frame of reference, as well as the symbolism associated with taking care of citizens. They all advocated structural approaches to dealing with a perceived problem and the question itself infers a human resource perspective. They were trying to appeal to the broadest possible audience and used all possible perspectives, reference frames. Bolman and Deal, whose approach to organizations I'll explain in more detail, emphasize that the best approach to organizational effectiveness is to integrate these multiple frames; political, structural, human resource and symbolic.¹³

Other definitions of conversion limit themselves to some aspect, or frame, such as the following:

- Downsizing military forces and the personnel programs which are used to convert (transition) military personnel to civilian life.
- Converting defense manufacturing firms to the production of civilian products.
- Converting government production to civilian products (prevalent in the former Soviet Union).
- Converting government installations to civilian use.

In this paper, I will use the Defense Conversion Commission's definition:

“...the process by which the people, skills, technology, equipment, and facilities are shifted into alternative economic applications.”¹⁴

¹³Bolman, Lee G. and Terrence E. Deal, *Reframing Organizations* (San Francisco: Jossey-Bass, 1991), 15.

¹⁴Report of the Defense Conversion Commission, *Adjusting to the Drawdown*, (Washington, DC: U.S. Government Printing Office, December 31, 1992), 1.

This definition fits the more general use, has a transition perspective, and includes the downsizing of the defense industrial base as well as the defense force itself.

Conceptual Framework

Before we analyze the conversion policies and their perspectives, we should consider the framework in which it operates. Strategic planning by larger firms considers the long-term goals, objectives and policies of the firm. This section will cover strategic planning first. The framework for this paper also includes organizational behavior theory as a way to complete the picture of conversion and its effects and this section also discusses that angle. The idea is not to have a specific set of questions for each part of the framework, rather it is to use the perspective to generate specific questions about the action one contemplates and apply the perspective to the actions.

Strategic Perspective

Before we examine the frames, it is important to consider the strategic perspective of commercial firms. Firms have been converting as long as there have been firms which produce defense products and governments which change their priorities. Most large firms engage in long-range strategic planning as a normal part of business. It seems that only for political and economic survival is the government greatly concerned that conversion be enhanced in order to soften the impact of expected large cuts in the defense industrial base and the military forces themselves. National industrial policy, admitted or ignored, involves strategic planning by all of those involved.

Just what is strategic planning? It considers:

- Large perspective.
- Long-term goals, objectives.
- Incorporates the firm's culture.

- Is used by management to guide the planning function.
- Is an essential part of the business plan.

The concept of strategic business planning seems to have its roots in the marketing disciplines. Some businesses strategically plan and others choose not to do so. Business academia promotes planning, strategic and otherwise. Francis Buttle writes in the June issue of the Cornell H.R.A. Quarterly that a marketing-strategy worksheet is a good tool to use. It simplifies and consolidates several planning aspects. Her structure is a five step process:

1. Conduct SWOT Analysis (strengths, weaknesses, opportunities, and threats).
2. Develop mission Statement.
3. Develop objectives and Strategies.
4. Develop a Capsule Marketing Strategy.
5. Use a Budgeted Marketing Mix.¹⁵

This is not a paper about marketing, but marketing concepts apply to defense companies. Defense companies conduct analyses, analyze their business plans, develop objectives and strategies, and then market their products. The term, defense companies, is distinct from defense industry which is a more inclusive term and includes government-owned industrial capacity. This paper is more concerned with the conversion of nonpublic defense industry except where government employees or capacity is specifically addressed. Government industry behaves quite differently from private companies which produce defense products (defense companies) and that is the context I wish to consider now. The point is that defense companies use the same strategic planning concepts just as do those firms which produce commercial products but behave quite differently with respect to profits, research and development, and cost accounting. They all deplore the additional requirements of government contract law and that influences their business strategy. The number of prospective customers changes drastically (a few governments rather than millions of private individuals or thousands

¹⁵Buttle, Francis, The Marketing-Strategy Worksheet: A Practical Tool, *The Cornell H.R.A. Quarterly*, June 1992, 57.

of companies) so they must pay close attention to the government's needs. To convert this strategy requires a change in corporate culture.

The main components of competitive strategy are scope, long-term objectives, and major functional policies.¹⁶ In a structural context, the organizational format is dependent on the terms just mentioned. In general, firms can be (1) exporting, (2) licensing and franchising, (3) joint ventures, (4) strategic alliances, or (5) wholly owned subsidiaries.¹⁷ Their strategy reflects these organizational frames of reference. These same concepts apply to the defense industry—the difference is in the limited customer base and special contract requirements, such as cost accounting, quality control, etc.

Reframing Perspectives

Now that we've defined the process, consider Bolman and Deal's organizational framework for our analysis. As I mentioned earlier, Bolman and Deal view organizations from four different perspectives. Figure 1 depicts these frames and some of the individuals or type officials who can be expected to operate within the particular frame of reference. The perspectives are structural, human resource, political and symbolic frames (frames of reference). They combine several major schools of thought on how organizations work; rational systems, human resource, political, and symbolic theories.

Consider the different approaches. The rational theorists emphasize organizational structures and goals while the human resource theorists emphasize the interrelationship of the people and the organization.¹⁸ Political theorists concentrate on the use of power and conflict in organizational situations while the symbolic theorists are more concerned

¹⁶Buzzell, Robert D., John A. Quelch, and Christopher Bartlett, *Global Marketing Management, Cases and Readings*, (Reading, Massachusetts: Addison-Wesley Publishing Company, 1992), 3.

¹⁷Ibid.

¹⁸Bolman, Lee G. and Terrence E. Deal, *Reframing Organizations* (San Francisco: Jossey-Bass, 1991), 9.

about the meaning of actions.¹⁹ Each approach has merit in its own right but are inadequate for such large and complex situations as national security or defense conversion. Combining these different theories and the process of considering them as frames of reference requiring different managerial tools²⁰ is useful for analyzing the

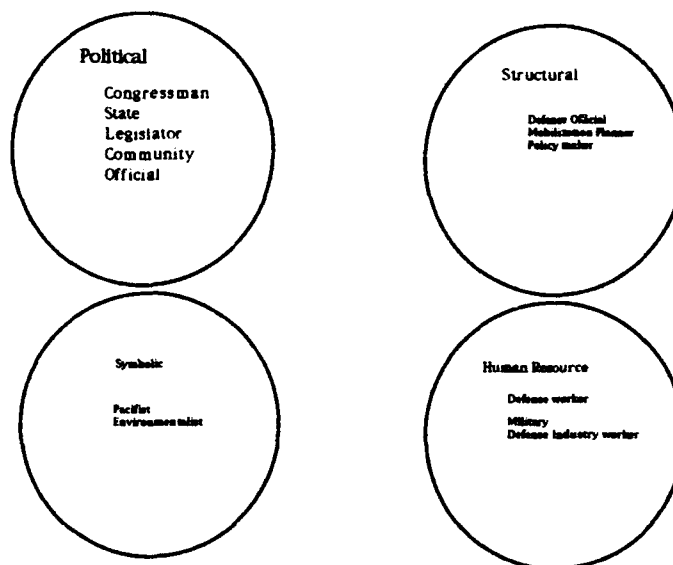


Figure 1. *Organizational Frames*

process of conversion. It's one of the most important parts of Bolman and Deal's approach and we can use it to better understand this transitional process of shifting defense effort into alternative economic applications, conversion.

The real benefit of the frames perspective is that the chances of success are increased when we simultaneously operate in all of the them. For example, if we consider structural changes in the defense industrial base, we must also consider the impact of those changes on the people involved (human resources), the political ramifications for the players involved, and the symbolism which the changes have for the industries and the public. Changes, conversion, or strategic restructuring (whatever you want to call the process), will have the greatest chance of success when they are made within all of

¹⁹Ibid.

²⁰Ibid., 341.

the frames. Decision makers would be advised to understand the various behavior theories and implement changes which integrate them to benefit all of the affected parties. It's more than a matter of giving everyone a voice in the decisions; it's careful consideration from all reference points.

It is within the strategic framework that the frames themselves are useful. Defense conversion must be an integrated effort—beating swords into plowshares is a symbolic concept but it doesn't indicate an appreciation for the extent to which the nation has integrated its entire economy with the defense industrial base. Some even say that we have instituted a *de facto* industrial policy, a defense industrial policy.²¹

Analysis of Conversion Policies

Degree of Defense dependency.

The defense industries can be further categorized, depending on the degree to which they depend on defense products or commercial products. Table 2 below is an example of some of the major defense firms in this context. It shows some firms which have more than fifty percent of their business in defense as well as those small businesses which sell very few defense products. The small firms may even sell commercial products to the defense industry but logically will have a larger customer base and minimal conversion effort. One would expect that the low-dependency and marketing majors would get out of defense work as the defense budget shrinks.

²¹Markusen, Ann and Joel Yudken, *Dismantling the Cold War Economy* (Boulder: Basic Books, 1992), xv.

Table 2. *The Diversified Defense Industry.*

Defense Dependent Majors (>50% of sales to defense)	Diversified Majors (25-50% of sales to defense)	Low-Dependency Majors (20 % or less of sales to defense)	Marketing Majors (Non-defense oriented)	Small Businesses (vulnerable but flexible)
General Dynamics McDonnell Douglas Grumman Northrop Lockheed Martin Marietta	United Technologies Textron Boeing Rockwell International Raytheon Allied Signal	AT&T General Electric General Motors Westinghouse Honeywell IBM	Exxon Amoco American Airlines Northwest Airlines Goodyear Hormel	Many

Source: Defense Budget Project. *Briefing for the Defense Conversion Commission*. August 10, 1992.

Using the strategic framework used by commercial industry as mentioned above and considering their long-term interests, the individual firms make decisions and devise different corporate strategies. In the case of conversion (transition), defense industries may choose to adopt one of the following strategies:

- Stick to defense. Firms which are highly dependent on defense often choose this strategy and "hunker down" while cutting costs, reduce R&D spending, and reducing employment. They may also choose to concentrate of specific "niche" defense markets, or attempt to capture more market share .
- Get out of defense.
- Sell to other government markets.
- Sell overseas. They may elect to sell current products and platforms overseas with direct sales . Taking the firm into a global operation with foreign requirements and moving production, R&D, and management into foreign countries is an option which may be more cost-effective.
- Diversify. A couple of options are readily apparent; acquisition of new product lines or conversion of existing physical plant into new product lines (primarily commercial products).²²

²²Defense Budget Project, *Briefing for the Defense Conversion Commission*, August 10, 1992.

In the current era of defense reductions, this process and its repercussions are occurring. Some firms, such as Martin Marietta, have made the decision to stick to defense and are acquiring other firms in an obvious strategy to capture more market share. It appears that this strategy is based on the analysis that the current downsizing of the defense industry and the defense budget is cyclical and that eventually the defense market will rebound with larger needs. The strategy seems to be one of positioning the firm to take advantage of that future possibility. Consider the case of Raytheon. One of the larger defense contractors, it has consciously diversified because of shrinking defense budget. In the sixties, Raytheon purchased Amana Refrigeration Inc., Caloric Corp. (appliances), Badger Co. (petrochemicals) and Beech Aircraft. These firm have enabled Raytheon to develop dual-use items such as radars for civilian air traffic control and communications gear as a part of Motorola's Iridium projects for handheld portable communications.²³ Other firms are getting out of defense, for example, General Electric; it sold its defense divisions. It appears that General Electric made the decision, using the strategic planning process, to get out of defense based upon the corporation's long term strategic objectives.

The general trend seems to be that defense dependent majors are consolidating and adapting to a smaller defense budget by acquiring other firms and specializing in defense. There is a limit to how far consolidation will go and it is entirely speculative as to how big a firm is willing to get and be dependent only on defense work. The end result can certainly be a few very large defense firms, an oligopoly. As a firm's dependency on defense work lessens, it concentrates on commercial operations and restructures by selling defense related subsidiaries. The end result will probably be a few firms, much smaller in size, and heavily dependent on defense budgets. Strategic success for defense

²³Curran, Lawrence J., Raytheon: practiced in conversion, *IEEE SPECTRUM, CONVERSION*, Special Issue, December 1992, 40.

dependent firms seems to be possible only in a time of future conflict and national dependence on their products or technical and human resources.

Those firms which choose to compete in commercial markets may have two advantages: (1) success with commercial products in the near term and (2) success with commercial products which can be used by defense forces at a later date. This is especially true if the defense industrial base employs a "dual-use" strategy. Dual-use is a term which describes products which have a commercial application but can also be used in defense systems. There are some unique defense systems, e.g., tanks and some submarines. A truck which could be used by commercial trucking firms or by military truck units is an example of a dual-use item. The idea is to have items which are capable of both commercial and military applications/specifications.

The Virtual Corporation for the Defense Industrial Base?

American and, to a large extent, firms which have global markets are changing their structural nature. The "virtual" corporation is a term and a concept which has caught on. With greatly increased global competition, firms are coming together for a short product development and production run, and then disbanding or moving on to another product. It may be one firm putting the production together, or it may be several companies contributing their own unique talent or resources. This is the general concept of a "virtual" corporation.²⁴ In the defense industry, the phenomenon often manifests itself in "contractor teaming" that can be considered a virtual corporation. An idea worth considering is whether this technique might be encouraged by the Department of Defense in order to capitalize on short and limited production runs with a concurrent increase in research and development. With less money available for defense, the idea is to shift the paradigm, not just downsize or consolidate. However, the

²⁴Byrne, John A., Richard Brandt, and Otis Port, The Virtual Corporation, *Business Week*, February 8, 1993, 98-103.

ability to provide logistics support for the life-cycle of military hardware is a critical consideration. Defense products have long life-cycles which will grow even longer as there are less funds are provided for upgrades.

Why not convert using current commercial trends?

Industry trends seem to be toward automated manufacturing using virtual corporations, computer-aided design, concurrent engineering with agile manufacturing processes. The idea is to leverage economy of scope instead of the traditional economy of scale. We can use virtual corporations, develop dual-use equipment, use concurrent engineering techniques, and contract for logistical service support to make defense industry look and act more like the firms which make commercial products. Some of the other trends for the firms which are expected in the 21st Century are; a network organization, interdependent structures, inspirational leadership, a culturally diverse workforce, working in teams, global markets, time competition, focus on the customer, optimized information resources, and all without compromising quality.²⁵ Economy of scale is not possible with the peacetime defense budgets which are forecast. Some of the advantages are:

- Smaller but more agile companies involved.
- Flexible and smaller production runs are possible.
- Keeps the human resources involved in defense production and maintains a wartime asset—trained personnel.
- Provides a base for surge production or wartime expansion.
- Keeps defense industry modernized because the concept is based on manufacturing capacity which isn't tied to capital assets devoted to a single product.

²⁵Byrne, John A., Paradigms For Postmodern Managers, *Business Week/Reinventing America*, Special Issue 1992, 63.

A key disadvantage might manifest itself with limited logistical support from the manufacturer and mentioned above. Service industries could team with manufacturing firms to provide this critical defense need.

Structural/Organizational Perspectives.

This frame is the most frequently considered one when conversion is discussed. Bolman and Deal's characterization of the structural perspective includes:

- "Organizations exist primarily to accomplish established goals."
- "Structural forms can be designed to fit any firm's circumstances."
- "People focus on getting the job done rather than whatever they please."
- "Specialization permits higher levels of individual expertise and performance."
- "Coordination and control are essential to effectiveness. Uses are achieved by authority, rules, policies, standing operating procedures, etc."
- "Organizational problems typically originate from inappropriate structures and can be resolved through restructuring or developing new systems."²⁶

Using this background, it seems that the political side of government has adopted the conversion idea. Political activities run the gamut from hearings on legislation to protect specific firms, personnel forced out of the military, to efforts to protect the industrial base. A lot of these ideas are fads; some politicians' sincerity seems just too coincidental. But what do most of these ideas have in common? The answer seems to be reorganization, defense structure changes, changing social structures and a defense industrial policy. For example, Secretary of Defense Aspin has suggested that the defense industrial base should be shaped by structural changes that come from an acquisition

²⁶Bolman, Lee G. and Terrence E. Deal, *Reframing Organizations* (San Francisco: Jossey-Bass, 1991), 48.

process where fewer military weapons are bought and more are designed, tested, and then placed "on the shelf". This policy will force some defense industries to "convert" their business to commercial products. Others suggest reorganizing the industrial base itself. Still other suggest the elimination or "downsizing" of government industrial production facilities. All are structural changes and the sheer number of suggestions and stakeholders make the plethora of suggestions seem like a fad.

One of the more popular perspectives is that of Jacques Gansler who advocates the integration of the nation's commercial base with that of the defense industrial base.²⁷ The nation's industrial base generally consists of the commercial manufacturing firms and is a product of the industrial revolution. It makes the products we use and the ones we sell for nondefense use. The defense industrial base is loosely defined as those firms which manufacture and supply the defense department with military hardware, software, and services. Markusen's premise is that the cold war defined and bred a new kind of industrial base (aerospace, communications, and electronics) with an undeclared but definitive industrial policy consisting of military defense and the policies which supported it.²⁸ This perspective has merit but, in this paper, the industrial base is separate and distinct from the defense industrial base and *de facto* industrial policy is beyond the scope of defense conversion.

One of the more popular concepts (discussed earlier) is that of manufacturing products which can serve both commercial and military needs. Mentioned previously as dual-use, the idea has merit. It was the more common approach to military production before the Cold War. Commercial enterprises formed the foundation of our industrial capacity during World War II and some effectively switched between defense and commercial products and processes in that effort. The Defense Conversion Commission,

²⁷Gansler, Jacques S., *Affording Defense*, (Cambridge, MA: The MIT Press, 1991), 273.

²⁸Markusen, Ann and Joel Yudken, *Dismantling the Cold War Economy* (Boulder: Basic Books, 1992), xv.

and others, apply the term to both technology and processes. In fact, the Congress provided \$200 million for dual-use programs in 1993. The benefit of the dual-use approach is that it integrates commercial and military products and their respective manufacturing processes and thereby expands the benefits of research and development, production, and technology to all of society. There is a limit to dual-use, military unique weapon systems, such as tanks, submarines, etc., don't fit the definition. The majority of systems could eventually fall into the dual-use category, even if the military unique ones absorb a large percent of the funds. It can provide a stronger manufacturing base and certainly represents a shift of defense economic assets to alternative applications.

Others have stressed an acquisition policy which emphasizes research and development and very little production. This is meant to conserve an increasingly diminishing source of defense funds but it also represents a conversion of economic policy. It may conserve production funds but research and development will cost more because there is less business on which to recoup overhead and startup costs.

Taken together, these efforts fall into what can be considered as the structural frame. The different approaches involve organizations, structures, policies which depend on the interrelationship of industries, and control of the output. In Bolman and Deal's perspective, structural changes are being advocated which accomplish specific goals, people are focusing on getting the job done, coordination and control are integral to the considerations, and restructuring is a consistent theme. Since the economic consequences are so high, the propensity is to strictly control the process and the outcome. Markusen and Yudken emphasize a new economic development program which replaces dependence on the military effort with civilian/commercial priorities.²⁹ We can successfully shift defense efforts into alternative economic applications only if we integrate these structural perspectives with other frames.

²⁹Ibid, 249.

Human Resource Perspective

The human resource frame evokes the most emotional response. Highly visible, it is at the heart of all of the efforts which even consider conversion. The nation's ability to consider the impact of shifting from a national industrial emphasis to alternative products and policies has a tremendous impact on the people who were such an integral part of the defense effort. Not just military personnel, government civilians and private-sector defense personnel are involved. It is compassion for the effect of conversion on the people that underlies the political frame and drives the programs that reeducate and retrain the people for alternative forms of employment.

Bolman and Deal characterize this frame by:

- "Organizations exist to serve human needs."
- "Organizations and people need each other."
- "When the fit between the individual and the organization is poor, one or both will suffer."
- "A good fit between individual and organization benefits both."³⁰

What kind of personnel conversions are we considering? According to the Defense Conversion Commission, military strength will drop from 2.2 million to 1.6 million in 1997.³¹ Furthermore, defense civilians are to be reduced from 1.1 million to 900,000.³² The commission estimated that 960,000 private-sector (defense industry) jobs would be lost

³⁰Bolman, Lee G. and Terrence E. Deal, *Reframing Organizations* (San Francisco: Jossey-Bass, 1991), 121.

³¹Report of the Defense Conversion Commission, *Adjusting to the Drawdown*, (Washington, DC: U.S. Government Printing Office, December 31, 1992), 52.

³²*Ibid.*, 59.

or "converted."³³ With the combined effect estimated at almost 1.8 million converted careers, programs which emphasize taking care of people dominate the political and the human resource frames. The agenda for change and its effect on people make this a conversion effort in its own right. No longer can we consider conversion as only an industrial structure process. Transition programs which provide reeducation, retraining, and relocation assistance are important parts of public policy and integral to the conversion process itself.

Political Perspective

Again, Bolman and Deal provide a useful framework for considering the political impact of conversion. They emphasize that:

- "Organizations are coalitions."
- "Enduring differences between individuals and groups change slowly."
- "The important decisions involve the allocation of scarce resources."
- "Conflict is central to organizational dynamics and power is the most important resource."
- "Goals and decisions emerge from bargaining, negotiation, and power plays."³⁴

In this frame, the players are both people and organizations. They represent different perspectives and sources of power. Because the defense industries are spread throughout the country, although unevenly, this diversity and its interdependence make the conversion effort one of the most visible items on everyone's agenda. The effect of conversion, shifting applications not transforming them, is different for communities and states which have different degrees of dependency on the defense industrial base. The job losses for the private-sector are larger in the states which have more defense industry, e.g. California. Since California also is the most populous state, it follows that it

³³Ibid., 61.

³⁴Bolman, Lee G. and Terrence E. Deal, *Reframing Organizations* (San Francisco: Jossey-Bass, 1991), 186.

also exerts the most political influence on the conversion process. Its economic shift has a profound effect on the rest of the country and the eventual outcome of the process. That is why there is a large political struggle when major firms and military bases are asked to close or convert. The current deliberations of the Base Closure Commission is an excellent example of this political struggle.

It is also important to consider the political representatives involved in the process of conversion. The Congressional, state, and community officials are the representatives of the people. Their perspectives are key to developing the organizational structures and human resource policies that implement the conversion policy. Government decisions impact both their constituencies and the common good of the nation. Defense interests are represented by coalitions of the politicians and industries, interdependent for their power and ability to shape the policies. They compete for increasingly scarce public funds. They bargain for programs, projects, transitional aid packages, and even relocation or retention of industries. Throughout it all, they seek the power to influence the economic outcome, jobs for their constituents and money for their respective coffers. A common attribute is interdependence, sometimes unrecognized but always resulting in bargains, accommodation, and eventual consensus.

But how should government policy makers approach the political frame? Based on both Bolman and Deal's perspective and that of the Defense Conversion Commission, integrated local planning is critical. We should integrate the frames and the political players in order to maximize the acceptability and the chances for policy success. Most importantly, the process for shifting economic applications and their human resources is dependent on integrating the planning.

Symbolic Perspectives

The whole of defense conversion is rife with symbols and the symbolic frame. Defense proponents and its detractors constitute a defense culture with rituals myths,

ceremonies, and even some theater. Using Bolman and Deal's term, we can characterize the symbolic reference framework as:

- Important for what it means or expresses rather than what it does.
- Means different things to different people.
- Uncertain how and what to do and therefore harder to apply rational approaches to analysis, problem solving, and decision making.
- The process is more fluid than linear.³⁵

For some, the conversion process is like beating swords into plowshares as mentioned in the Bible. For others, it's like theater and involves a script where the defense community is continually in conflict with the public who prefer peaceful conflict resolution instead of military force. The ideological perspective of the people involved tends to characterize the symbolism. Pacifists are expected to demand drastic or complete conversion while defense practitioners are expected to push for no conversion, an even larger defense effort, or conversion that doesn't diminish military capabilities or preparedness. The public demands span the entire spectrum between these positions. For the military members and even the civilian defense workers, public and private, the conversion process symbolize an assault on the core values embodied in "duty, honor, and country."

The conversion process can even have fairy tale aspects:

- It fulfills a wishful dream of peace and tranquillity with a lack of defense effort.
- It entertains with preconceived images of making something for the commercial market with the same people and machinery which made weaponry with enormous destructive capability.
- Conversion implies security—the absence of military threat.
- Conversion makes good propaganda. It's easily remembered and the announcement of the closing of a military base is very visible, whether it makes good economic or military sense.³⁶

³⁵Ibid., 244.

And lastly, the conversion process can be theater, another characteristic of the symbolic frame, in a drama of politics and change. The President proposes to cut defense spending, his political opponents resist. The Congress tries to upstage him with either larger cuts or conducts hearings and established commissions to study the problem before creating the enabling legislation. The news media interviews those who will be forced to change careers and portrays the emotions of the victims. The news media focuses on alternative uses of the industrial base, the military installations, or the funds and describes how the change will either benefit or harm the public. A crisis is developed; a solution must be found. The drama is played out in the morning newspapers, the television documentaries, and the political lecture circuit. The President's political agenda is depicted as hanging in the balance, and the political confrontation between conversion and an expanding defense effort is portrayed as the crisis in need of a solution, an election, or a critical vote. Action and counteraction, trial balloons, hearings with preconceived conclusions, and commissions with voluminous reports play out the drama of conversion on the political stage.

The conversion process is thus full of symbolism. Stereotypical images are invoked and the decisions are made. How do we measure success from the symbolic frame? It depends on the individual perspective rather than a concrete, universal, and rational solution.

What's the Criteria For Success?

Overlapping interests

The criteria for measuring success in the conversion effort is even more elusive than corraling the many ideas, perspectives, and projects of defense and public work. It seems that the answer is helped if we can develop consensus on values and evaluate the benefits and detractions of the proposals. One such framework is symbolized below. It's

³⁶Ibid., 258.

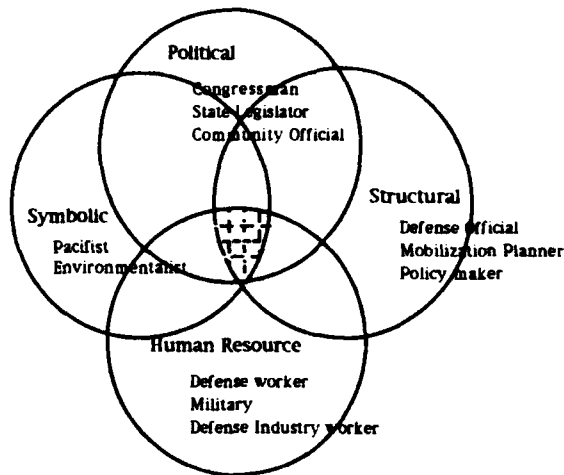


Figure 2. *Frames and Stakeholders*

not intended to be a rigorous algorithm, just an analytical picture of the stakeholders and the issues which can be considered. The Venn diagram circles represent the different frames and some of their various constituencies are listed. A conversion effort which simultaneously works in all frames and spheres of influence would have a better chance for success. All of the stakeholders should be involved and a part of the decision process. Their motivations, social attitudes, religious beliefs, and their combined culture must be integrated in order to optimize the conversion effort. Success is measured by the ability to satisfy the desires of the stakeholders of each frame.

Defense Conversion Commission

The Defense Conversion Commission established several evaluation criteria for conversion efforts and which are shown in Table 3.

Table 3. *Principles, Goals, and Objectives of Defense Conversion Commission.*

Principles	Goals	Evaluation Criteria
<ul style="list-style-type: none"> •Integrated response •Proper Government role •Long-term perspective •Universality 	<ul style="list-style-type: none"> •Facilitate the transition •Preserve defense capability •Ease the immediate impact •Improve Government programs 	<ul style="list-style-type: none"> •Overall support of defense transition goals •Clear objectives •Measurable outcomes •Exit criteria •Demonstrated commitment •Effective and efficient delivery

Source: Defense Conversion Commission. *Adjusting to the Drawdown*. December 31, 1992.

The commission felt that the conversion effort should use the principles listed in the table to accomplish the listed goals and that all actions should meet some sort of evaluation criteria. It evaluated proposals from all who wished to give input against this framework to determine if more, less, or different actions were necessary. The commission's emphasis on integrating conversion actions and making it apply to all government assistance, to civilian firms, military and civilian defense personnel, and government agencies is appropriate. The commission did not see a need for establishing a large and continuing bureaucracy for this short-term conversion process. It saw a need to enhance existing programs and integrate existing actions in support of goals which improve the long-term viability of the national defense effort.

Table 4 summarizes the commission's recommended actions for the goals that it identified. The commission's conclusion; "Defense conversion does not pose any extraordinary problems for the nation."³⁷ I agree with the conclusion as long as the commission's recommendations are implemented, particularly integrating the effort.

Although the commission performed an invaluable service by studying the government's efforts to deal with the popular term of "conversion," the President and the Congress may not be able to operate from the multiple frames of the commission. The commission clearly deals with all of the frames but the political leadership seems to be stuck in the political frame.

Conclusions and Recommendations

Conversion is a word with many definitions and almost as many vested interests trying to get a piece of the action. At the beginning of this paper, I identified the political impact on the subject by reflecting on the presidential candidates' positions regarding the subject. Over the past several months, political power and rhetoric have

Table 4. *Recommendations of the Defense Conversion Commission.*

Goals	Actions
<ul style="list-style-type: none"> • Facilitate the transition 	<ul style="list-style-type: none"> • Short-term actions consistent with long-term
<ul style="list-style-type: none"> • Preserve defense capability 	<ul style="list-style-type: none"> • Integrate military and commercial technologies, products, and processes • Strengthen development of commercial technologies which support defense needs • Military/commercial integration and reliance on integrated private sector for defense goods
<ul style="list-style-type: none"> • Ease the immediate impact 	<ul style="list-style-type: none"> • Integrate community planning with government programs
<ul style="list-style-type: none"> • Improve Government programs 	<ul style="list-style-type: none"> • Apply principles and criteria developed by commission • Identify, set, and implement program objectives while measuring progress against baselines • Direct the implementation of commission recommendations from the Executive Office of the President

Source: Defense Conversion Commission. *Adjusting to the Drawdown*. December 31, 1992.

added to the substance and the confusion. The Congress enacted several programs in late 1992, former President Bush declined to start them, newly-elected President Clinton is taking credit for the programs and announcing their implementation, and the

³⁷Report of the Defense Conversion Commission, *Adjusting to the Drawdown*, (Washington, DC: U.S. Government Printing Office, December 31, 1992), v.

government policy makers are busily deciding how to execute them. To summarize some of the legislative actions, consider the following new programs:

- **Dual-Use.**

- \$100 million for Critical Technology Partnerships to encourage industry investment in significant defense technologies.

- \$200 million for Dual-Use Technology and Industrial Base Extension Programs

- **Integration.** \$50 million for Commercial-Military Integration Partnerships to facilitate development of commercial technologies to meet military needs.

- **Regional support.** \$100 million for Regional Technology Alliances to promote development of products which provide economic strength to particular regions.

- **Manufacturing Technology.** \$25 million for Defense Advance Manufacturing Technology Partnerships to encourage government-industry cooperative efforts in manufacturing technologies.

- **Community Assistance.** \$55 million for the Office of Economic Adjustment for grants to communities hit by base closings.³⁸

These programs seem to follow all of the Defense Conversion Commission's goals. They are separately in the many frames, yet they are not integrated. Operating in multiple frames can be contradictory and even counterproductive if the programs aren't managed with an integrated perspective and some degree of centralized perspective. This country was not founded on central planning ideas and historically resisted efforts to do so. While the programs are relatively small, the president has started with \$500 million in these programs; far more money was spent in developing the defense industry than the government envisions for conversion. Our historical opposition to central planning coupled with local projects' recent dependence on the federal purse confuses the outlook. Conversion will take place, it's a matter of determining if it's done with government assistance or in the free market.

In order to manage the change of conversion, we should consider the factors Kennedy suggests are influential; social attitudes, religious beliefs, and culture. Based on

³⁸Analysis, Aspin looks to conversion to ease pain of defence cuts, *Jane's Defence Weekly*. 20 March 1993, 17.

research conducted for this paper, the following recommendations and reflections are offered:

- Shifting defense effort into alternative economic applications is a complex process involving competing special and vested interests. The policies and programs that will be most successful will involve simultaneous effort in multiple frames. Policy and programs should address the concerns of special interests and private citizens while avoiding inefficiency or too narrow foci.
- The stakeholders should be considered and given an integral voice in policy and program development.
- Decision makers should implement integrated programs which are developed with measures of success. Ineffective and inefficient programs should be canceled at formal and frequent evaluation points.
- The Executive Office of the President should integrate the effort. The executive departments are special and vested interests in their own right.
- Conversion efforts should meet the requirements for the national security strategy's industrial base. In particular, conversion should retain the capability to provide weapon systems in time of conflict and eliminate delays in converting from commercial to military production, i.e., reconstitution and mobilization.

In conclusion, Defense conversion is a manageable program that poses extraordinary problems for the nation if it's not done well. Good program management is measurable by its economic impact. It involves integrated and coordinated actions in

structural terms, takes care of the human capital of the defense industry, satisfies the symbolic need for reducing the defense effort, and adjusts to the public's political power. Conversion is also a normal part of strategic business planning. This is another instance of economic adjustment but which has a highly visible government policy component.

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