

## EXECUTIVE SUMMARY

From domestic, religious, and ethnic disputes to worldwide terrorism, conflict is a shaping force in the global economy. As the global economy continues to strengthen through foreign direct investment and monetary integration, interdependence among nation-states makes violent conflict less likely to occur. However, conflicts arising from ethnicity, religion, and ideology are intense and often irreconcilable.

## 12 TRENDS changing the world

A five-year research project reveals that the future of commerce worldwide will be greatly influenced by a dozen “global tectonics” that will affect business leaders across all industries:

1. Biotechnology
2. Nanotechnology
3. Information technology
4. Population
5. Urbanization
6. Disease and globalization
7. Resource management
8. Environmental degradation
9. Knowledge dissemination
10. Economic integration

### **11. Conflict**

12. Governance

# Conflict: Its Changing Face

BY FARIBORZ GHADAR

Addressing trends in conflict, Thomas Barnett, in his book *The Pentagon's New Map*, writes that "In the age of globalization, there is only war in the context of everything else." To understand the occurrences, ramifications, and solutions to conflicts, one must take into account the wide variety of underlying and often unique issues associated with them.

The definition of conflict itself is changing as the occurrence of conventional international conflicts continues to decline while incidences of civil war and terrorism increase. As a result, the analysis of intrastate conflict and surrounding issues plaguing conflict-prone countries is paramount if we are to understand when, where, why, and how wars will be fought in the 21st century as well as the effects of those wars on corporate interests.

As the international system shifted away from a bipolar balance of power, the proliferation of civil and intrastate conflicts has gradually replaced wars

of containment. The number of intrastate conflicts is far higher than the number of interstate conflicts, and that trend is expected to continue through 2025 and beyond.

The tectonic force of conflict on the global economy influences investment, creates and destroys markets, and dictates trade. Domestic, interstate, and global conflicts have historically impacted investors, managers, and multinational corporations through diverse and evolving patterns. From domestic, religious, and ethnic disputes to worldwide terrorism, conflict is a shaping force in the global economy.

When aid and support from their parent superpowers disappeared, countries once important to Cold War strategy such as Afghanistan, Guatemala, and the Democratic Republic of Congo (formerly Zaire) often succumbed to violent conflict. Internal factions and neighboring states, long suppressed by interna-

tional politics, fought for power and resources. Over the past 15 years, such countries have not only become centerpieces of rising ethnic, religious, and border strife but also breeding grounds for terrorism.

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Civil and intrastate conflicts continually threaten to expand to regional and international political and economic instability. The ongoing strife in Central Africa and the Middle East highlight the debilitating effect of conflict on economic development — on countries involved directly in the conflict as well as on neighboring countries that are drawn into the hostilities. Fighting has resulted in massive cross-border refugee flows, increased levels of disease in refugee camps, and the disruption of food and medical aid to the people most in need. Typically, war-torn countries record little to no economic growth as military spending balloons and political instability dampens foreign investment and tourism. Conflict countries will be able to

restore civil society and re-invigorate their ailing economies only if they can establish stable governments and a peaceful environment in which com-

panies can operate.

Despite the emergence of important markets in Asia, the Middle East, and Central and South

America, the United States remains the key figure in the global economy. However, the post-Cold War economic and political dominance of the United States will be challenged in the coming years and decades.

As China continues its rapid growth, the European Union increases political unity, and Middle Eastern (particularly Islamic) countries create stronger regional alliances, it is increasingly possible that U.S. hegemony may be tested. Smaller civil conflicts across the globe and a rise in global terrorism will continue to pose a significant threat to foreign markets and worldwide economic stability as well. Whether it is violent or not, conflict characterizes these trends and will act as a prominent tectonic force in the decades to come.

Conflicts over tangible goods such as territory, government control, and economic issues can be decided with generally less violent confrontation than disputes arising over less-palpable ideas. With substantial payments, exchanges, or other solutions, these areas of conflict over tangible goods can be settled when specific outcomes are reached assuming that other more volatile influences do not come into play. However, if ethnic, religious, or ideological factors coincide, violence is practically inevitable, and the possibility of extended disputes arises.

Economic conflicts include myriad related issues, ranging from trade and economic transactions to natural resources and monetary policy. The least violent of the areas of inquiry, economic conflicts usually involve some type of gain for the parties involved despite opposing interests. This potential mutual benefit makes the use of violent force impractical

## INTERNET RESILIENT AGAINST TERROR ATTACK

Researchers have simulated what would happen to Internet reliability in the United States if terrorists were able to knock out various physical components of the network.

They determined that it would be difficult to cause major disruptions across the country, although destruction of some key parts could seriously degrade Internet quality. "When it comes to the Internet, there is strength in numbers," said Morton O'Kelly, co-author of the study and professor of geography at Ohio State University.

"There are so many interconnections within the network that it would be difficult to find enough targets and the right targets to do serious damage to Internet reliability nationwide."

The researchers used just five of the more than 30 major commercial Internet backbone providers and three of the nation's major public access points — places that connect traffic from many Internet service providers. The three access points studied were in Chicago, Dallas, and San Francisco.

They then simulated disruption or failures of parts of the network to see what would happen to Internet connectivity between various pairs of cities. As would be expected, results differed greatly depending on the number and specific parts of nodes that were disrupted in the simulations, O'Kelly said.

One interesting city pair in the study was Seattle and Boston. Geographically, they were furthest apart of any pair. But in terms of reliability, they were ranked very highly — 147th of the 946 city pairs.

That was largely because there were many separate paths for Internet traffic to travel between the two cities, O'Kelly said. Moreover, traffic could be routed through any of three of the major hub cities, all of which were highly reliable because of the peering agreements between the Internet backbone providers.

"Seattle and Boston show the advantages of multiple pathways and resilient hubs," he said.

Overall, the results showed the Internet has a great resilience against accidental disruption or even targeted attacks by terrorists, O'Kelly said.

O'Kelly noted that this study used a simplified model of the Internet, which means the strength of the entire network is probably even greater than what they found.

"If our simple model was resilient to damage, the real Internet would be much better off because it has so many more hubs and links than we had in our study," he said.

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since violence would only diminish the positive outcomes for all concerned. As the global economy continues to strengthen as a result of factors such as foreign direct investment and monetary integration, interdependence among nation-states makes violent conflict less likely to occur.

The areas of less-tangible conflict such as ethnicity, religion, and ideology, are intense and largely irreconcilable between opposing actors. Deeply rooted within the cultures of various states, conflicts over intangible mechanisms are difficult to solve, persevering through generations and claiming countless lives. Giving rise to genocide and violent oppression, these areas of conflict remain the most dangerous in today's world, especially when compounded by ethnocentrism, radicalism, and fanaticism.

Long-standing tangible conflicts such as territorial and governmental disputes over natural resource ownership can be interpreted as the initial catalyst of ethnic conflicts. Over the course of decades and generations, social and psychological influences can exacerbate these initial factors, turning a historical material dispute into a full-fledged ethnic and religious confrontation.

## Trends

Integration of nation-states into the global economy, the growth of regional institutions such as the European Union, and the hegemony of the United States have affected the number of international conflicts in modern history. Local international conflicts continue to exist at high levels, mostly consisting of long, historical territorial or political disputes, but the

number of international conflicts has been minimized since the late 1980s. Despite this trend, domestic conflicts have increased steadily since the end of World War II and the Cold War.

In the past three years, regardless of sporadic violence in Israel/Palestine, Somalia, Nepal, Burma, Indonesia, and the Philippines, the world has witnessed the provisional conclusion to many extremely deadly conflicts. On the basis of peace agreements, disputes in Angola, the former Yugoslavia, Guatemala, and Northern Ireland, among others, have been resolved. Since 2003, however, the Darfur region of Sudan has continued to suffer from violent political conflict, resulting in the death of hundreds of thousands of people. The fighting started after "African rebels rose up against the Arab-dominated government, claiming discrimination in the distribution of scarce resources in the large, arid region," according to one *New York Times* article.

These domestic conflicts, such as civil wars and genocide resulting from territorial, religious, ethnic, or ideological disputes, pose a considerable threat to internal stability and economic growth. Fighting involving local governments, opposition groups, or multiple ethnic or religious factions creates waves of refugees, disrupts food and medical aid, and causes widespread economic instability. If peace is not restored, long-term poverty or civil unrest could ensue, leaving entire populations at risk and completely disconnected from the world economy.

Realizing the persistent nature of internal conflict throughout the global system, it seems possible to claim

superficially that ethnic, religious, or long-standing political tensions are the root of internal strife. With further study, however, the issue at hand becomes the economic separation between interconnected nations of the global economy and developing or economically isolated states.

Known by political scientists as the north-south gap or a gap of non-integration, this division includes access to capital and information technology — but more important, the ability to earn subsistence wages. In many of the world's poorest countries, this gap is so extreme that entire populations are subject to abject poverty, unable to purchase basic needs such as food, shelter, health care, and other necessities for survival.

While the per capita gross domestic product in fully integrated countries such as the United States and Japan rose 3.5 and 20 times, respectively, since 1945, other disconnected countries such as Iran and the Democratic Republic of the Congo have seen declines. Wealthy and connected states can be grouped into a functioning core of actors, while poorer and isolated countries fall into the non-integrating gap.

Countries interconnected within the global economy see mutual economic gains, technological breakthroughs, and high living standards through international trade and cooperation. Disconnected states find themselves with lagging or shrinking economies isolated from the global economy, resulting in poverty and lack of a positive future for entire populations.

When a population's outlook on the future grows increasingly bleak, individuals turn to other methods of economic and social subsistence. Violent

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## Unprepared for attack

The information technology infrastructure of the United States is highly vulnerable to hackers, terrorists, organized crime syndicates, and natural disasters, according to a position adopted by IEEE-USA.

"Because of society's complete reliance on information technology and cyber networks, all the critical infrastructures and networks are interdependent and interconnected," IEEE-USA stated. "A cyber attack on one sector's infrastructure may have devastating consequences to another sector. U.S. infrastructure is not adequately prepared to defend against such risks."

Nearly every aspect of life in the United States is tied to computers. According to IEEE-USA, core Internet protocols such as Internet routing, e-mail, and end-user authentication are at risk of cyber attack.

To help mitigate the risk of attack, IEEE-USA recommends that Congress and the executive branch work with private industry to authorize increased and funding for cyber security research and encourage cyber security technology transfer programs.

IEEE-USA is part of IEEE, a technical professional society serving electrical and electronics engineers.

terrorist, religious, or ethnic groups become an alternative to endless economic hardship, creating channels of hatred and spite toward local opposing groups or greater economic and political world powers. Compounded by religious fundamentalism, disputes over natural resources, and the effects of government structure, internal conflict in non-integrating countries is a direct result of slow or negative economic trends and disconnectedness from the global economy.

World business leaders cannot overlook the threat of terrorism, especially given the potential significant costs of such violence. The Sept. 11 attacks on the United States resulted in an estimated \$105 billion in immediate damages, including loss of life, destruction of property, and short-term depression of economic activity. The prolonged threat of terrorism compounds these losses. Under continued threats of violence, consumer confidence decreases, perceived investor risk and interest rates increase, fuel prices become more unpredictable, and critical industries such as airlines, restaurants, and tourist services can falter. Given the close economic ties between countries, attacks in one nation often reverberate throughout the international business system, causing regional economic depression.

A study of 200 countries from 1968 to 1979 showed that a doubling in the number of terrorist incidents decreased bilateral trade between targeted economies by approximately 6 percent. In 2002, after the Bali tragedy, Indonesia lost approximately 1 percent of its gross domestic product receipts. These examples only begin to illustrate the severe impact of terrorism on international business.

The July 2005 bombings in London claimed more than 50 lives on the city's mass transit system. Four bombs exploded during the morning rush hour commute, three on train carriages and another on a double-decker bus, creating the deadliest situation in London since World War II.

In addition to the threat of attacks against the mass transit systems of major cities worldwide, the potentially catastrophic threat of attacks using weapons of mass destruction is also critical. A U.S. survey of arms experts estimates the probability of such a terrorist attack occurring somewhere in the world within five years at 50 percent and within 10 years at 70 percent. According to the survey, a terrorist using weapons of mass destruction to stage an attack, whether nuclear, biological, or chemical in nature, would most likely do so using material purchased on the black market. The survey recorded that nuclear proliferation would continue into the next decade, with one to two countries successfully acquiring weapons programs within five years and up to five countries within 10 years.

In the ever-changing information age, businesses, consumers, governments, and organizations in the United States and around the world have adapted and, for the most part, embraced technological advancements. In recent years, major industrial systems have grown increasingly dependent on Internet-related networking technologies, including the military, government, and corporate sectors. The FBI estimates that U.S. businesses lose \$138 million every year to hackers, and many companies claim to have been broken into via the Internet. This estimate, while relatively small, can be multiplied many folds if a serious

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attack is mounted that cannot be protected against.

Nearly every important corporation is now computer-dependent, making cyber terrorism a serious current and future threat to business. With such dependence on information and networking technology, the costs of vulnerabilities to cyber terrorism in the United States and abroad could be devastating to national security and the economy.

### Future implications

In the future of the global economy, conflict will continue to act as a significant tectonic force. While the threat of total annihilation via a superpower

nuclear entanglement has largely subsided, other forms of conflict have to some extent increased. The specter of such increased and diversified forms of conflict presents downside risks to companies and national economies.

Yet these risks are more contained and at the same time require new methods and technologies that present opportunities associated with addressing these dangers. The first is that, by definition, the new dangers associated with asymmetric warfare suggest the need for greater public-private sector cooperation. To meet the challenge of defending critical infrastructure and a range of other key homeland contingencies, governments and companies

need to work together at much higher levels of cooperation and coordination. That presents a constellation of challenges and opportunities to companies that have positioned themselves as partners in addressing the risks of conflict.

Second, companies working to develop technological responses to new dangers associated with conflict — sensors, vaccines, and data mining, among others — can position themselves to contribute and provide solutions from the new requirements we face. Industry can and is expected to help and lead through the development and application of new technologies and practices. ♦

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