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For me, the recent events in the Middle East have been a painful reminder of one of the most important lessons for any leader: You don't really know what it's like to run a business until you've had to do it amid the turmoil of war.

In 1991, I was the general manager of Intel's operation in Israel, which at the time was (and still today is) the company's largest unit outside the United States. During the First Gulf War, I faced what was the most difficult test of my entire career: whether to keep Intel Israel up and running during Iraq's Scud missile strikes against Israel or close the operations until the crisis passed.

Of course, many businesses keep functioning during wartime. But in the days before the First Gulf War, Israel confronted what appeared to be an unprecedented threat. The Israeli military assumed that Iraqi missiles would be carrying chemical weapons. The government distributed gas masks and ordered every household to prepare a special sealed room in case of chemical attack. Most serious from a

business point of view, in anticipation of the missile strikes, the Israeli civil defense authority directed all nonessential businesses to close and their employees to remain at home. The radical uncertainty of the situation—not knowing how many missiles would fall, where they would fall, what kind of destruction they would inflict—threatened to bring our business to a halt, even before a single missile had been launched.

It would have been easy to follow the civil defense directive and close down. Everyone was doing it, and we were not part of the war effort. Intel's senior executives in California would have understood. Many of our employees would probably have appreciated the opportunity to focus on preparing their families for the attacks.

And yet I chose to ignore the government directive, keep our operations open, and ask our employees to continue to come to work. Some people thought I was being irresponsible. What right did I have to risk people's lives in time of war? Others thought I was crazy. What

if any of our employees were killed? What if the government took legal action? What if disgruntled employees went to the press?

Despite these risks, I decided to move ahead, and Intel's employees responded. In the first days of the Scud attacks, when businesses throughout the nation were closed, roughly 80% of Intel's employees showed up, day in and day out, night shifts included. Thanks to their performance, Intel Israel was one of the few businesses in Israel (and our Jerusalem semiconductor fabrication plant the only manufacturing operation) to remain open throughout the entire six weeks of the war. Not only did we keep our commitments to global Intel, we also established the reputation that, over time, would allow us to grow Intel Israel into an important center of excellence for the corporation, Israel's largest private employer, and a cornerstone of Israel's dynamic high-tech economy.

A Different Kind of War

I had left Israel in the early 1960s to get a PhD in electrical engineering at the University of California at Berkeley, but my dream had always been to bring back a new body of knowledge to Israel and help found a new field of innovation and industry. So in 1974, I returned to set up Intel's first overseas unit, a small chip design center in Haifa. Few people know it, but we designed the microprocessor for the original IBM personal computer. And in 1984, we opened the company's first chip fabrication plant outside the United States, in Jerusalem.

By the early 1990s, Intel Israel was a key outpost of Intel's global production system. The Jerusalem fab was responsible for about three-quarters of the global output of the 386 microprocessor, at the time the company's best-selling product. Meanwhile, our development center in Haifa was hard at work on new products that would be critical to Intel's future, including key components of what would become the Pentium microprocessor.

When Iraq invaded Kuwait in August 1990, we knew there was a good chance there would be a war. So I appointed a task force of senior managers to develop a contingency plan in case Israel was drawn into the conflict. At the time, we were assuming it would be a conventional war, and we were confident that we could handle it. That kind of war was not ex-

actly new to Israel; we had had plenty of experience with what it would mean for our business during Israel's incursion into Lebanon in 1982. As a result, we made plans for replacing key personnel called up to the military and for operating the plant with a skeleton crew.

But almost from the moment we finalized our contingency plan, it became clear that this war would be very different. The politics of the U.S.-created anti-Iraq coalition made it imperative that Israel stay out of the war. For that very reason, it was in Saddam Hussein's interest to provoke Israel into intervening. By September, U.S. satellites had detected the transport of ballistic missiles to western Iraq—a mere seven minutes' travel time from Tel Aviv. Israeli defense officials were saying that a chemical attack on the country's major population centers was likely—a belief that prompted them to lease two batteries of Patriot anti-aircraft missiles, adapted for use against ballistic missiles, from the United States. Instead of being behind the lines of the war zone, which we were used to, we ran the risk of *being* the war zone.

In October, tensions mounted when the government issued every Israeli a personal protection kit, complete with gas mask and atropine injectors, to combat chemical poisoning. There was something about receiving those kits, being instructed to carry your gas mask with you wherever you went, and having to prepare a sealed room in your house or apartment that brought the uncertainty and potential danger of the situation home in a palpable way.

By the turn of the year, as the U.S.'s January 15th deadline for Iraqi withdrawal from Kuwait drew near, my disquiet had grown. Many airlines suspended flights to Israel. The governments of the United States and Great Britain advised their nationals to consider leaving the country. Then on Tuesday the 15th itself, the Israeli government announced that all schools would be closed for the rest of the week. Slowly it was dawning on me that our contingency plan might be irrelevant to what was likely to be anything but an ordinary war.

And yet, despite all these warning signs, it still came as a surprise when I woke up on Wednesday, January 16th, to the news on the radio that, in anticipation of the start of hostilities and likely missile attacks, the Israeli civil defense authority was directing businesses to close and everyone but essential emergency

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personnel to remain home. It was only then that I fully understood: We were facing a completely different kind of problem than the one we had anticipated. This wasn't just a matter of calling up reserves. The government was telling us that *nobody* should come to work. I immediately called a meeting of the task force at the Jerusalem fab.

A Question of Survival

In the 20 minutes it took me to drive from my home in the historic village of Ein Karem, on the southwestern outskirts of Jerusalem, to the plant in the Har Hotzvim industrial district, I kept revisiting in my mind the logic of what I was about to do. It seemed almost irresponsible to be worrying about business in the midst of a potential chemical attack. And yet, if I didn't think about the possible consequences, who would?

One of my core beliefs is that the primary task of a leader is to ensure the survival of the organization. (See the sidebar "Lessons for Leaders in a Crisis.") It's a perspective that I'm sure is heavily influenced by my experience as a very young child during World War II. My parents were Polish Jews who had emigrated before the war to Holland, where I was born in 1939. But after the German invasion of the Low Countries, they were taken and eventually killed by the Nazis. I survived only because the Dutch underground placed me with a devout Christian family in the Dutch countryside who hid me for the duration of the war. In retrospect, I can see how this experience inculcated in me a stubborn conviction that survival must never be taken for granted—and also that the actions of determined individuals can have a truly heroic impact on events.

My vision for Intel Israel had always emphasized survival in a highly volatile industry and region. As I used to put it, I wanted to create an organization that would be the last to close in a crisis. To be honest, many Intel Israel employees, including some of my direct reports, didn't much like this vision. They thought it was too negative. "Is that the best we can do," they would ask, "just avoid being closed down?" So eventually, we came up with a simple slogan: "Survival through success."

I was convinced that a complete shutdown of our operations threatened both the success and the survival of Intel Israel. Managing a major unit in a global corporation is a contin-

ual fight for resources. When we first proposed setting up the Jerusalem fab in the early 1980s, we were put in competition with Ireland to see which country could develop the better proposal. We won that round and by the early '90s were already starting the process of negotiating and lobbying inside Intel to persuade senior management to expand the Jerusalem fab.

I knew Intel's leaders well and had good relations with them. I had worked with Andy Grove at Fairchild and been among the first generation of employees after he, Gordon Moore, and Bob Noyce founded Intel in 1968. I was confident that if we had to interrupt production due to the war, executives in Santa Clara would understand. I wasn't worried that there would be a negative impact in the short term.

Lessons for Leaders in a Crisis

My experience in the Gulf War taught me a lot about responding to crisis situations. Many of the lessons were specific to our company and the kind of crisis we faced, but if I had to draw any general lessons, I guess I would say that in making decisions during a crisis you need to keep just three big rules in mind:

Focus on long-term survival. When you are under an attack of the kind we faced, the easy option is to close down, and in some cases that's the right thing to do. What you need to think about, though, are the long-term consequences. For Intel Israel, shutting down would have sent a signal that I agreed with those who thought Israel was a dangerous place to invest in. Over time, employees could have paid for the closure with their jobs, to the detriment of the organization and the country as a whole. I think that many of the employees who criticized my decision to stay open in the early days of the war would have regretted a closure far more.

Go against the current. Sometimes, the best way to survive a crisis is to do exactly the opposite of what people expect. Doing the unexpected has a galvanizing effect. It shakes people out of

their passivity and helps mobilize them to action. At Intel Israel, our bias for going against the current made it natural to decide to remain open even though most businesses in Israel suspended operations. It was the perfect antidote to terror.

Trust your instincts. When it comes to leading in a crisis, good instincts are more important than good planning. The problem with chaotic situations like war is not so much that you can't anticipate everything. It's that you can't really anticipate *anything*. All you can do is trust your instincts, embrace the chaos, and then deal with the consequences as they emerge. For instance, we spent a lot of time and energy during the crisis trying to anticipate the legal ramifications of disobeying the government's instruction to close down. Imagine my surprise when I learned, weeks after the attacks began, that the civil defense directive to stay home from work only had the status of a recommendation, not a legally binding order. At the time, most people, ourselves included, had assumed exactly the opposite. So our decision to keep operations open was, from a legal point of view, not so risky after all.

But as Intel grew larger, decision making became more decentralized. The key stumbling block to further investment in Israel was the lingering impression of geopolitical instability in the region. Indeed, we had already had a number of struggles inside the company over the transfer of strategic technologies and critical products to the Israeli operation. Therefore, I was convinced that if we had to interrupt production, even for a brief period of time, we would pay a serious price over the long term.

I had had a glimpse of the risks during a phone conversation with Intel's then—executive vice president, Craig Barrett, in September. Barrett was on a stopover in Amsterdam on his way to Israel for a routine annual operations review. But he called to tell me that he was considering canceling the trip. "Grove is worried about my coming to Israel," he told me, referring to the company's then CEO. "He thinks it's too dangerous." While I convinced him it was safe and he came, the call provoked a twinge in my gut. If Intel's senior executives were seeing Israel as unsafe, what would that mean for our business? My concern wasn't only for the survival of Intel Israel. It was also for the survival of Israel's emerging high-tech sector. Intel Israel was a key anchor of Israel's still small high-tech economy. If we couldn't operate in an emergency situation, the trust of multinationals and venture capitalists in the stability of the Israeli business environment might crumble.

It's another of my core leadership beliefs that "when in crisis, you go against the current." When the going gets tough, genuine leadership means making hard choices, doing the unexpected—and, sometimes, the seemingly impossible—even in the face of opposition. So as I drove to the task force meeting, I formulated what I saw then as an against-the-current decision to assure the company's survival: We would ignore the civil defense directive. I was going to ask our people to come to work.

Back to the Drawing Board

"This is a completely different situation," I said at the start of the task force meeting, "so let's think differently." The first thing we did was to throw out our contingency plan. The next was to ask how we could keep the operations going despite the civil defense directive.

In Israel, there is an official category of busi-

nesses that are designated essential parts of the nation's economic infrastructure. In times of emergency, sectors such as utilities, defense contractors, and the national telecommunications network are allowed to continue to operate. But we didn't have that legal status. The fact is, we had thought about applying for it in the past but just never got around to it. It had been pushed aside by more immediate and, at the time, more pressing concerns. And even if we applied for this essential-industry status right away, under the current circumstances who knew how long it would take to receive it? We decided we were going to act as if we already had it until we heard otherwise.

For three hours, we discussed the full range of risks that remaining open entailed. The main risk, obviously, was the potential injury to any of our employees on their way to and from work. People had sealed rooms at home, and we had created them in all our main facilities, including the Jerusalem fab. But what about the daily commute? This was complicated by the fact that we had a contract with a private transportation company to bring our employees to work at the Jerusalem fab (a typical arrangement at most large Israeli companies), so if we were going to remain open, not only our own employees but also the transport company's employees would be at risk. I weighed the physical risk to our workers and contractors heavily, but in the end concluded that if it was safe enough for employees at the utility company and the phone company to travel to work, there was absolutely no reason why we shouldn't risk it as well.

At the Wednesday task force meeting, there were few objections to the idea of remaining open. To be honest, the whole prospect of missile attacks seemed so theoretical as to be literally impossible to imagine, almost unreal. In the end, we decided that we would issue a "call" for Intel employees to continue to come to work—a recommendation, not an order. No one would be punished if they decided to stay home. I made it extremely clear to my direct reports that there would be no coercion: No manager was to pressure employees to come to work who did not want to.

This prohibition was especially important to me—and not just for ethical reasons. The problem with coercion is that it often leads to backlash, creating the very resistance that it is meant to overcome. When you order people to

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do something, their first reaction is often, “Wait a minute, if they have to force me, there must be a problem with the whole thing.” I knew that I couldn’t control every single action of all my managers, but I could make it clear that there would be no direct pressure. “Let the culture do its work,” I advised.

We would also make it clear that keeping Intel Israel open for business was critical to the future success not only of the organization but also of Israel’s high-tech economy. I believed strongly that the only way I could expect Israelis to take a risk was if doing so was critical to the country, not just to the company.

We communicated our decision to the workforce on Wednesday afternoon. On the following day, with still no sign of missile attacks, turnout was relatively normal. But that Thursday, January 17th, was also the start of the allied bombardment of Iraq. What only one day earlier had seemed like a theoretical possibility would very quickly become reality.

The First Attack

At 2:00 in the morning of Friday, January 18th, I was awakened by the sound of an air-raid siren. I joined my wife and teenage children in the sealed room of our Jerusalem home and listened to the radio for the news. Eight missiles had landed in Tel Aviv and Haifa; as far as the authorities could tell, there were no chemical warheads. I got on the phone to the members of the task force and told them to meet me again at the plant. I grabbed my gas mask and headed out for the Jerusalem fab.

When I arrived at the fab at around 3:30, work in the clean room had already resumed. At the sound of the alarm, the employees had evacuated to the sealed room, except for a few who had agreed to stay behind to man some etching machines that needed continuous tending to keep the flow of materials going. After the report that the missiles had landed, employees were given the opportunity to call home before returning to the clean room. Things were tense, but relatively normal.

When the task force convened half an hour later, we reaffirmed the decision to call people to work. Managers had to be contacted and instructed what to say to their staffs. Employees had to be called and told that the plant would indeed be open. The transportation company needed to devise alternate routes to get around police roadblocks. In the chaos of a crisis situa-

tion, clear communications are especially important. So we spent the bulk of our time planning exactly what to say to our workforce and coordinating our communications with our counterparts at Intel in the United States, who would be wondering what impact the missile attack was having on our operations.

Some 75% of the employees on the 7:00 am shift made it to the plant. Although I hadn’t told anyone, I had been expecting maybe 50%. The relatively high turnout was a major endorsement of our decision.

That night, after being at the plant for nearly 16 hours straight, I called Intel senior executives in Santa Clara. I stayed at the plant because I didn’t want to call them from my home. I had no idea what their reaction was going to be, and I wanted them to see that Intel Israel was operating as normal—or as close to normal as possible under the circumstances. I explained that we had decided to remain open, but we weren’t forcing any employees to come to work who didn’t feel comfortable doing so, and that so far turnout was quite good. They asked a lot of questions; we discussed the potential risks. But in the end, they were 7,500 miles away. Under the circumstances, they simply had to trust us.

“Scud Business as Usual”

The second Scud attack came early on Saturday. No one was killed, but some people were injured. Intel’s employees in Jerusalem kept coming to work. And when the design center in Haifa opened on Sunday (the first day of the normal Israeli workweek), turnout was up to 80%.

After the first few days, we entered a period that I took to calling “Scud business as usual.” Attacks continued to happen. On Tuesday night, for example, after two days with no Scuds, there was an attack outside Tel Aviv that led to the deaths of four people, wounded 96, and left hundreds homeless. But we carried on as if everything were normal, and no one tried to stop us. By the middle of the week, the civil defense authority was urging all Israelis to go back to work, so the fact that we were open for business was no longer so unusual. Still, because the schools stayed closed, absenteeism at most businesses remained high. The stress was enormous, and I and my team did all we could to boost employee morale. (See the sidebar “Intel’s Wartime Kindergarten.”)

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As our actions on the night of the first attack suggest, constant communication was essential. The task force met daily to assess the rapidly changing situation and plan our communications for the day. We used every means we could—phone, e-mail, on-site meetings, face-to-face conversations—to keep our employees informed of the latest developments. I was traveling continually between the three Intel sites in Israel—the fab in Jerusalem, the design center in Haifa, and our small sales and marketing operation in Tel Aviv—to meet with managers and employees in cafeterias and on production lines. I felt it was essential that I, as the organization’s leader, be present to employees “in the flesh.”

We also took great care in our communications to global Intel to keep senior executives informed of the developments on the ground in Israel. After the first few days of attacks, I sent a comprehensive e-mail to Intel senior management describing how we were meeting the “war challenge” and delivering on our commitments to the corporation. Andy Grove sent

us an extremely supportive letter in response, which I had posted on bulletin boards throughout the organization. His strong public endorsement had an enormous positive impact on employee morale.

Today, the decision to continue with business as usual doesn’t seem so radical. At the time, however, it was pretty controversial. In the white heat of the first few days of crisis, everybody operated on instinct. People were so busy that they barely had time to think. But once things settled down into “Scud business as usual,” some doubts and questions began to emerge.

Some saw the decision to remain open as an act of courageous leadership, but others viewed it as an unnecessary risk, literally playing with the lives of employees. Some wondered how we could justify risking people’s lives for a company that wasn’t even Israeli. Relatively few people actually refused to come to work, but many were bitter for quite a while. And one individual, who did refuse to come to work—and not only during the first week but also in subsequent weeks, after the civil defense directive had been withdrawn—had to be let go.

But these complaints never really coalesced into full-fledged opposition to the decision. For one thing, whatever doubts some people had, there was the basic fact that the vast majority of employees did actually show up. Indeed, in the years since the war, I have often wondered why so many answered the call. Partly, I suspect, it was because coming to work was a welcome alternative to the psychological paralysis brought about first by the prospect, and then by the reality, of the missile strikes. Another part of it, I think, was that the call didn’t come in a vacuum. We had been talking for years about survival through success and the need to do whatever it takes to be the best. So while not everyone may have agreed with the decision to keep operations open, most understood why we were doing it and trusted that we had the best interests of the people and the organization at heart.

For me, one story in particular captures the way the organization rose to the occasion. A team from the Haifa development center was on a conference call with its U.S. counterpart when the alarm signaling a Scud attack began to sound. To the amazement of their U.S. colleagues, team members calmly asked for a

Intel’s Wartime Kindergarten

Keeping Intel Israel open during the crisis certainly presented some unanticipated challenges. One issue that I had seriously underestimated was the impact of my decision on our employees’ families.

To her credit, my head of human resources had raised this issue. The only woman on the task force and a mother, she was sensitive to the implications of our decision for our female workforce (about half of the employees in the Jerusalem fab were women). “Can we really ask mothers to be separated from their children during the threat of missile attacks?” I remember her asking at the task force meeting when we decided to remain open.

At the time, I didn’t exactly dismiss her question. But in the total scheme of things, dealing with the family fallout was not my highest priority. I felt that such separations were inevitable in an environment where the “front” was potentially everywhere.

Her concerns, however, turned out to be prescient. A few days into the attacks, a manager at the Jerusalem fab reported that the lobby was crawling with young children. Some of our employees, especially women, were bringing their kids to work. After all, the schools were still closed, and, just as my HR head had predicted, people didn’t want to be separated from their children in case of an attack.

The organization responded by temporarily entering the education business. Local managers in Jerusalem set up a kindergarten in a support building of the fab. It had never occurred to anybody on the task force (including my HR head) that establishing a kindergarten for employees’ children might be a good thing to do. But once faced with the fact that concerned parents were bringing their children to work, it was an obvious step to take. Throughout the Scud attacks, as many as 50 children were in the school on any given day.

brief interruption in the meeting so they could move to the site's sealed room, located in the computer center, and then resumed the call a few minutes later as if nothing had happened.

After the War

The last Scud attack took place on February 25th, about six weeks after the bombardment of Iraq had begun and one day after the start of the ground war. On Thursday, February 28th, the Israeli state of emergency officially ended. All told, 39 Scuds in 18 separate attacks landed on Israeli territory, none carrying chemical warheads. Although only one person was killed directly by an attack, 74 people died of indirect causes—from heart attacks brought on by the missile strikes, for example, or by suffocation due to improper use of protective gear. More than 200 were wounded by blasts, flying glass, and shrapnel. Property damage to 4,000 buildings was in the millions of dollars. And 1,600 families had to be evacuated.¹

The war had indirect economic costs as well. According to the Israeli Ministry of Finance, industrial output during the war was at about 75% of its normal level. The costs to the Israeli economy in lost output totaled approximately \$3 billion.

At Intel Israel, we were extremely fortunate. None of the Scuds landed in the Jerusalem area, where most of our people worked. No Intel employee or family member was injured or rendered homeless by the attacks. And in terms of the economic impact, both the Jerusalem fab and the Haifa development center were able to meet all of their manufacturing and product development commitments.

Looking back, I realize that the decision to keep Intel Israel up and running during the First Gulf War was not as dramatic as it seemed

at the time. And yet, to this day, I remain convinced that meeting our commitments to Intel during the war was critical to the future evolution of Intel Israel—and, indeed, of the entire Israeli high-tech economy. A few years later, in 1995, Intel broke ground for a second semiconductor plant in Israel, at Qiryat Gat, on the outskirts of the Negev Desert. In 1999, the Haifa center won the assignment to develop the Centrino portable-computing technology, which was launched in 2003. And in subsequent years, whenever we got any push-back about doing major projects in Israel, it was always helpful to remind our colleagues that, as the experience during the war had demonstrated, “Intel Israel delivers, no matter what.”

Today, Intel Israel is the headquarters for the company's global R&D and product development in wireless technology, as well as a major center for chip fabrication. The organization is Israel's largest private employer (and second largest employer overall), with a workforce of about 6,600, which is set to reach nearly 10,000 by 2008. In 2005, Intel Israel's exports totaled \$1.2 billion and represented 14% of the total exports of Israel's electronics and information industry. And in December 2005, Intel announced that it would invest an additional \$3.5 billion in a new fab in Israel, the largest single investment by a corporation in the history of the country.

1. These figures were drawn from the *Israel Yearbook and Almanac 1991/92* (IBR Translation/Documentation Limited 1992).

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