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Catch them while they are small

Researchers looking at how terror organizations develop draw similarities between them and the growth of start-up companies: limited resources, flexibility, and a dominant organizational culture. The findings will help intelligence bodies identify and neutralize terror groups before they threaten world peace

By Israel Fisher

In September 2001, the world was shocked when the Twin Towers collapsed in a cruel terrorist attack that made the name Al Qaeda a byword. In 1989 the state of Israel was shaken by the murder of soldiers Avi Sasportas and Ilan Saadon as Hamas, a previously unknown organization, gloried in the appalling act. In 2014 the Middle East was horrified when the shocking videos published by a new organization by the name of Da'esh (ISIS) were revealed on the Internet.

These organizations and many others are responsible for some of the most horrifying actions in recent decades. Intelligence bodies from around the world invest enormous resources in an attempt to fight them. According to the figures of the Watson Institute at Brown University, the cost to the United States of its war on terror between 2001 and 2020 will reach \$6.4 trillion. According to the calculations of the European parliament, terror attacks carried out in Europe between 2004 and 2016 affected the GDP of the countries of the European Union to the tune of \$180 billion. Therefore, researchers and authorities worldwide are trying to think of how to make the war on terror more effective.

Researchers from the Kellogg School of Management at Northwestern University came up with a creative idea that could help predict how lethal terrorist organizations will be “when they grow up”: compare them to start-ups. “We tracked what happens around the world and tried to understand how it is possible to wage the war on terror”, said Prof. Brian Uzzi, author of the research together with his partner, Dr. Adam Pah, also of the Kellogg School, and research assistant Yang Yang of the Northwestern Institute on Complex Systems, to TheMarker.

Uzzi is a researcher and lecturer in the fields of leadership, social networks, big data, artificial intelligence, and machine learning, and his connection with research on terrorism might seem surprising. He also comes every year to teach in the Kellogg-Recanati International Executive MBA Program at Tel Aviv University, and is aware of the fact that dealing with terrorism of broad concern in Israel too. He says that he decided to study terrorist organizations after seeing how the budgets for the war on terror were increasing from year to year. “What usually happens is that when a terror organization becomes particularly lethal, all the resources are focused on it. In fact, the allocation of resources comes after the crimes are committed”, says Uzzi. According to him, one of the incentives for the research was thinking about the series of “Terminator” movies, in which time travel is used to realize objectives that were missed in the past. “Many years before the machines tried to take over the world, they sent someone back in

time in order to destroy their enemy while it was still weak”, says Uzzi. “If only we could do the same thing with terror organizations.”

In order to carry out their research, the researchers tried to compare the situation of terror organizations with that of new start-ups. It turns out that there are points of intersection between them, and just as investors want to identify start-ups with good chances of success, the intelligence agencies want to identify terror organizations with the potential to become lethal in the future – in order to fight them. “You look at an organization in its early stage, and try to understand if it will become powerful or if it will disband over time”, says Uzzi. “I saw that start-ups are assessed according to two main characteristics: capabilities, and resources – and then it hit me.”

According to him, using the same parameters, it is possible to assess the chances that terror organizations that are just starting out will grow and pose a significant and lethal threat.

The problem with terror organizations is that they tend not to share their financial data with anyone, or release their sources of financing. Instead, they boast of the murderous attacks that they carry out around the world. “We had to think of a methodology that would reveal the missing data, in order to know whether it was possible to compare terror organizations with businesses, and if we would be able to predict which one would become the next monster, and destroy it in time”, says Uzzi. “We invested considerable time in attempting to understand how to estimate the missing data.” The researchers used global databases that contain data on the attacks documented since 1970. “We assumed that the terror organizations were at the stage of growth when they carried out their first attacks, and based on their behavior at the beginning, it would be possible to assess how lethal they would be in the future”, he says.

The researchers focused on 342 terror organizations that were active for at least one year and carried out at least 10 terror attacks – in order to be able to identify a certain pattern in their actions. “We tried to examine concepts based on what we know about the evaluation of start-ups. There are start-ups with specific capabilities in a particular field, such as artificial intelligence or software.” Uzzi explains that there are also terror organizations with particular specialties: creating bombs, assassinations, or communication and cyber capabilities. “Companies with specific capabilities tend to have a longer life”, he says.

Research studies in the field of management have also shown that established companies tend to launch products in regular cycles – like Apple’s iPhone, for example. According to Uzzi, a terror organization with resources also launches its product in regular waves, but its product is carnage. When a terror organization carries out systematic attacks, it can be assumed that it has a regular flow of resources. On the other hand, if an organization carries out random attacks, this could indicate that it does not have many resources. “Similarly, if a start-up launches a product on January 1, and then again three months later, and then after two weeks, and then after five months, it means that it has limited resources and has to use them in an opportunist way – meaning that as soon as it has resources it uses them, because the company does not know whether it will have additional resources in the future. We succeeded in dividing the terror organizations into categories in the same way, and according to the frequency of their attacks, draw conclusions with regard to their cash flow.”

After examining the first 10 terrorist attacks of each organization, the researchers were able to create a deadliness index for the organization relative to terror attacks by other organizations, and also to know if the attacks were carried out according to a particular cycle indicating their sources. Is there not a suspicion that terror organizations will try to learn the model and cover up their actions so that they cannot be identified at an early stage? In an article published on this subject on the Kellogg website, Uzzi wrote that if organizations tried to carry out more random attacks, in order to conceal their real capabilities, it would also harm their ability to carry out destructive attacks: "As soon as you start acting in a random manner, you become less effective in utilizing your stable resources".

The model created by Uzzi and his colleagues is not completely accurate, but it does enable the development of terror organizations to be predicted with an accuracy of 60%, according to Uzzi, if one only examines the systematic nature and deadliness of their first terror attacks. In this way, government intelligence bodies can examine organizations in the early stages of their operation under a magnifying glass, and save resources in the future that are directed to the war against bigger terror organizations. His model also filters other factors. For example, a small terror organization could have relatively high expertise in creating bombs and highly potential deadliness, but [without] sufficient resources it will not be able to mature and grow into a large and destructive organization.

There are still many differences between start-ups and terror organizations, which are driven by zealous and extreme religious ideology whose influence on the organization is hard to quantify. "The subject of ideology is very complex", he says. "But religious zealotry is part of the culture, and is often similar to start-ups that have a culture of innovation."

Terror is a costly business

Impact of terror attacks on the GDP of the countries of Europe*

Britain	43.7
France	43
Spain	40.8
Germany	19.2
Greece	10.4
Belgium	7.8
Ireland	4.3
Sweden	2.9
Italy	2.2
Netherlands	1.7

Source: RAND Europe * 2004-2016, in € billions