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The Center for Education and Research in Information Assurance and Security

PURDUE UNIVERSITY

Israel: An Assessment of Cyber Capabilities

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Introduction

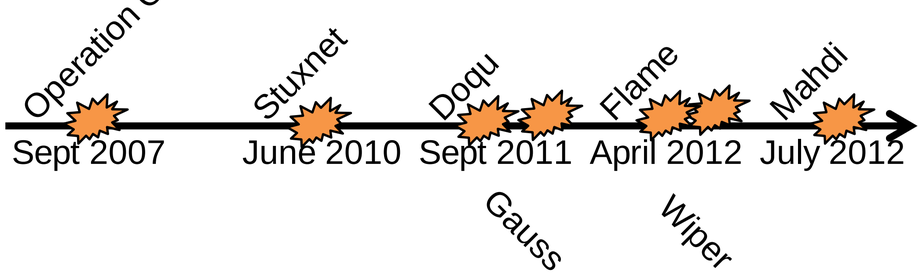
Waging war in the cyber domain is not a new concept. Controlling the enemies command and control dates back to Roman times with intercepting simple rotation ciphers to modern attacks involving targeting a countries uranium enrichment plants. While the domain of cyber is not universally defined, there is little doubt it is being used as an adjunct to land, sea, and air domains to achieve strategic goals.

Methods

An analysis of open source intelligence (OSINT) documents and sources was conducted. Hofstede's cultural dimensions theory was applied to the four closest in gross national product (GNP) per capita countries to Israel. In addition, Hofstede's theory was also applied to the top four kinetic threats posted to Israel in the region. Applying Hofstede's dimensions in addition to OSINT allows us to gauge the cyber capability of the country. Consideration was given to the technological capability of the country through education resources and technology dispersion.

Timeline

The image below is a timeline of major cyber related attacks in the region. The attacks are not necessarily attributed to Israel as the aggressor or the victim. They are presented to demonstrate the ongoing escalation of attacks in the region.



Significance

The current geopolitical nature of the Middle East represents the significance of this assessment. Currently, Israel is an ally of the United States in the region. This provides a significant strain on the relations between Israel and its neighbors in the region. Historically the United States has used its resources to back the Israeli government's kinetic power. The decreasing cost of implementing a cyberattack coupled with increase ease and effect now give an advantage to previously disadvantaged adversaries.

Analysis

Power Distance (PDI): The extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally.
Individualism (IDV): The degree of interdependence a society maintains among its members.
Masculinity/Femininity (MAS): The fundamental issue here is what motivates people, wanting to be the best (masculine) or liking what you do (feminine).
Uncertainty avoidance (UAI): The extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these.

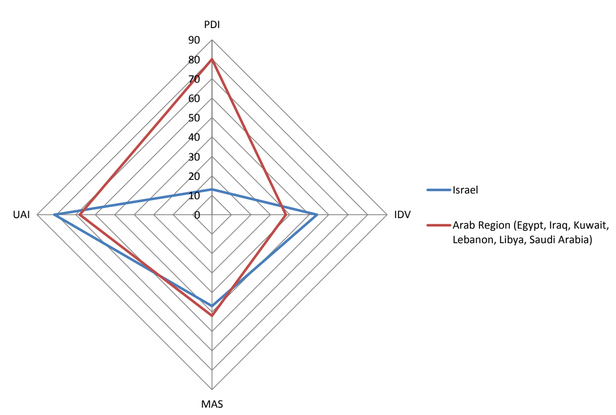


Figure 1 Israel versus Arab Region Hofstede's dimensions

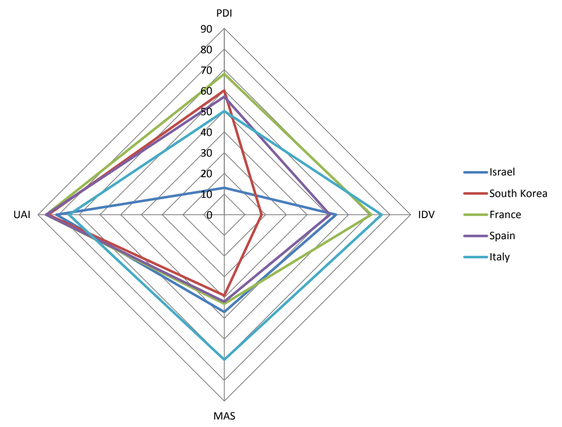


Figure 2 Israel versus four closest in GDP per capita

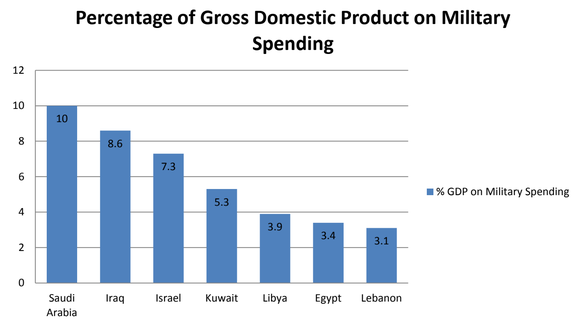


Figure 3 Israel versus Arab Region GDP Military Spending

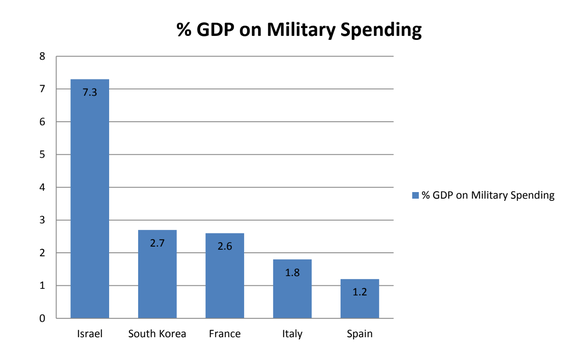


Figure 4 Israel versus four closest in GDP per capita

Conclusion

The analysis of OSINT and cultural factors show Israel has a high level of technological capability along with the means and motive to use cyber capabilities to control regional issues. The cultural differences between their nearest geographic neighbors shows a potential correlation in the need to spend a disproportionate amount of their GDP on defense measures in relation to countries of similar GDP. Further research will continue on this topic to develop a metric to actually measure the cyberpower of a country much as kinetic and economic power can be exerted at the global level.

References

Central Intelligence Agency. (Feb 20, 2013). *The World Factbook.* Retrieved March 11, 2013, from https://www.cia.gov/library/publications/the-world-factbook/geos/xx.html.

Feyer, Leo.(n.d.). The Hofstede Centre. *National cultural dimensions.* Retrieved March 11, 2013, from http://geert-hofstede.com/national-culture.html.

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