

THE PERCEPTION OF BUSINESS WARGAMING RESULTS AMONG STRATEGIC AND COMPETITIVE INTELLIGENCE COMMUNITY

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Introduction/background: Achieving a market success is not an easy task for companies. To win in the market companies apply numerous strategic, market and competitive intelligence methods including business wargaming which is considered as one of the most advanced methods.

Aim of the paper: The main aim of this paper is to investigate the perception of business wargames practices among strategic and competitive intelligence professionals with special emphasis on results of business wargames.

Materials and methods: To achieve the aim of the paper the online survey was conducted among the members of a leading global professional association “Strategic and Competitive Intelligence Professionals”. The survey was sent to 12566 emails from SCIP database. The responses were collected anonymously via Survey Monkey in April-May 2017. As a result 227 responses were collected.

Results and conclusions: The results of the study suggest that according to respondents business wargaming allows to achieve results on each of the proposed 5 levels of results representing the cause-effect chain of translating business wargaming effects into business benefits, i.e. insights, recommendations, implementation, competitive situation, measurable benefits. Moreover, the respondents indicate that the business wargaming can be considered a relatively attractive analytical method in terms of its effectiveness. The costs of business wargaming are rated as slightly lower or significantly lower than the benefits. Business wargaming is also assessed as better than any other method of generating insight. The research suggests that the more difficult the conditions for competition, the more commonly the business wargaming method is used. Respondents predict that the use of this method will increase in the future.

Keywords: business wargaming, competitive intelligence, strategic simulations.

1. Introduction

1.1. Strategic, market, competitive intelligence

Achieving a lasting market success is not an easy task for companies. Market leaders constantly watch the market, competitors and customers to adjust business strategies. The role of Strategic, Market, Competitive Intelligence (SMCI) is of utmost importance in this process. The lack of proper SMCI may lead to market failures such as Polaroid, Kodak, Nokia. These companies were probably not able to detect the changes in their environments and respond to them accordingly.

Intelligence is as an information that has been analyzed and processed so that it is useful to decision-makers when making strategic and tactical decisions. Above all, it is a methodical assessment of future events. Companies use SMCI to improve the competitive position and win in the market.

Business requirements for SMCI can be strategic, operational or tactical. Strategic ones refer to understanding where the value is migrating, operational ones refer to evaluating the key investments or changes in the context of business strategy and tactical ones refer to supporting the process of winning market transactions against major competitors.

To initiate the SMCI program the decision-makers should provide relevant input to scope it correctly. The scoping ends up with formulating the Key Intelligence Topics (KITs). Running top class SMCI operations requires taking actions in six dimensions: scope, process, deliverables, tools, organization, culture (Hedin et al., 2011). Professional SMCI operations generate value added – companies which run SMCI activities claim their investments pay off (GIA, 2013).

SMCI activities are carried out in the course of traditional intelligence cycle which comprises the following steps: requirements, scoping, planning, collection, processing, analysis, reporting, dissemination. In practical terms those activities do not follow sequentially, but they intersect (Wheaton, 2012). Intelligence deliverables shall meet the six criteria of the FAROUT model (Fleisher, and Bensoussan, 2003) and be: future oriented, accurate, resource efficient, objective, useful, timely.

The critical element in the cycle is the analysis which leads to discovering new knowledge from collected information. The ability to see the disruptions and interpret them is the critical element of SMCI (Fuld, 2010). Analysis is not aimed at telling the future or anticipating the "black swan" events since it is impossible (Taleb, 2007). It should be aimed at assessing the most likely courses of action. During the analysis the questions being answered include: "what?", "so what?", "now what?" (Fleisher, and Bensoussan, 2003, 2007). The taxonomy of structured intelligence analysis techniques comprises dozens of items, including structured brainstorming, what if analysis, devil's advocacy, red team analysis, scenarios (Heuer, and Pherson, 2010). There are also analytical methods specific for business such as PESTEL,

Porter 5 Forces, Ansoff Matrix, strategic groups. Using those various methods should lead to developing possible competitors' strategic moves, possible competitors' reactions to those moves, possible competitors' reactions to industry changes and competitors' reactions to changes in the wider environment (Porter, 1980).

1.2. Business wargaming as a method of intelligence co-creation

Intelligence co-creation is as a joint effort of intelligence producers and consumers aimed at developing insights to support decision-making on strategic moves. It assumes involving decision-makers in the intelligence analysis and drawing conclusions together with the SMCI team. Such methods allow to generate high-value intelligence, assess strategic situation from different perspectives, provoke unconventional thinking, engage people across the company and also obtain human intelligence. They have the potential to produce excellent results but are difficult in execution since they require profound technical and social skills as well as industry knowledge.

Applying the intelligence co-creation methods is one of the measures to address the challenges the SMCI teams face today such as aligning KITs to strategic priorities, communicating competitive data and insights to stakeholders, using informal networks to capture human intelligence (Frost, & Sullivan, 2011). Co-creation fulfills such important axioms of intelligence analysts as aggressive thinking, avoiding mirror imaging, intelligence dissemination, proactive collection (Watanabe, 1997). Cocreation methods reduce the risk of human thinking errors such as the tendency of failing to see things that should be seen, the tendency of perceiving what we expect to see and the tendency of rapid opinion forming and adhering to it (Heuer, 2010). Cocreation also allows to use elements of critical thinking which include: clear purpose, precise question, clear assumptions, point of view, relevant information, concepts to express thinking, inferences or interpretations, implications or consequences (Moore, 2007). Such methods are part of a new paradigm for analysts and should be used routinely to cure the flaws in intelligence analysis (Cooper, 2006).

Wargaming derives from the military sector and can be defined as “a warfare model or simulation whose operation does not involve the activities of actual military forces, and whose sequence of events affects and is, in turn, affected by the decisions made by players representing the opposing sides” (Perla, 1990) or as “an attempt to get a jump on the future” (Dunnigan, 2010). In business context wargaming can be defined as “competitive time-based simulation in which participants ‘playing’ on teams develop and present competing strategies” (May, and Smith, 2012). Since there are some reservations with the use of “war” and “game” terms in business world wargaming is also being referred to as “strategy simulation”.

Wargaming assumes a rivalry between companies, although cooperation-oriented measures like cooperation are acceptable. Already in 1984 it was argued that the economic and social transformations required companies to take a new approach to market struggle, i.e. to adopt their strategies to reflect the combative nature of market competition (Barrie, 1984).

This assumption has not changed over time – business wargames are sometimes being referred to as “cognitive warfare” (Herman et al., 2008).

Business wargaming assumes that if a company wants to win against its competitors it needs to think the way they do. The ultimate goal is to discover the most likely actions of the competitors and develop plans to outsmart them. Wargame is a serious, realistic simulation and is not oriented for entertainment by any means. Business wargaming uses only real data on companies and markets. Wargaming shall not be confused nor associated with gamification which is oriented for increasing the engagement and motivation of people. There are various types of wargaming events: workshop, inductive/deductive game, scenario planning, alternative futures, etc. (Burns et al., 2013). The advanced form of wargaming is a multi-level simulation which links the strategic, operational and tactical levels (Perla, and Markowitz, 2009).

The value-added from such simulations is the creation of a situation which allows the host company to analyze the situation from different perspectives by temporarily entering the shoes of competitors (according to the Sun Tzu’s proverb “To know your enemy you must become your enemy”). This different perspective allows to discover new things. Wargaming can be perceived as one of the methods to generate foresight for companies. Some authors (Schwarz, 2009) claim it is possible because wargames have participative and dynamic nature and allow companies to deal with cognitive errors, challenge status quo, identify weak signals and refocus activities. Wargaming is probably the most powerful project the SMCI team may run. SMCI teams which engage in wargaming assess their operations as very effective and more strategic (Fletcher/CSI, 2014).

1.3. The practice of business wargaming

Business wargame is an interactive simulation attended by the company’s leadership. The executives are split into teams representing the competitors. Those teams develop the most likely business actions and reactions of competitors in an iterative manner, usually in 3-4 rounds. The proposed actions are then assessed by other teams representing clients, regulators, shareholders, etc. The content of each round derives from the goals of simulation. The simulation concludes with recommendations of strategic actions for the management board of a host company.

Wargaming can be applied to test the strategy, prepare crisis response, develop foresight, manage change, educate and recruit, develop early warnings (Oriesek, and Schwarz, 2008). It is the right solution when a company faces an important decision such as launching new product, entering new market, merger or is concerned about the uncertainty of the environment like changing technologies, regulations, social trends, economic situation, customer habits.

Business wargaming is a unique way to analyze the future market situation. Having such knowledge before making a key decision and engaging significant resources is invaluable. This is possible thanks to a structured, rigorous analysis of the most likely moves and counter-measures of competitors and stakeholders in the mid-term horizon.

Business wargaming is considered a valuable yet demanding analytical method that leads to groundbreaking conclusions about what a company should do to improve its position relative to competitors. There are three factors that can make this breakthrough possible. First of all, during business wargame, the participants additionally change their perspective thanks to the fact that they play the role of management boards of selected competitors. This gives a unique opportunity to look at the market situation from a completely different angle, which is to free the participants' unconventional thinking. Secondly, selected management representatives from various departments of the company are involved in the process. This gives the opportunity to accumulate the high potential of diversified experience and comprehensive business and industry knowledge of the company and use it for the purposes of analysis. Thirdly, the analytical process is carried out as a team and iterative process, which allows for the development of much more mature conclusions and recommendations than in the case of analyzes conducted individually by individual analysts.

2. Methods

2.1. Survey description

The survey aimed at investigating the perception of business wargames practices in companies. The aim of the survey was to identify and describe the perceived relationships between the use of wargaming and business results such as improving competitive position of companies.

The draft survey was designed by the author and was consulted with 2 dozens of individuals familiar with wargaming. All collected comments were analyzed and some of them implemented.

The target audience was the members of SCIP association who are SMCI practitioners. The survey was primarily targeted at individuals who deal with or dealt with business wargames. While probably not all the SCIP members had direct experience with business wargaming, most of them were probably familiar with this concept which made them relatively good target group for this survey.

The survey contained some explanations of terms to set a common denominator. Business wargaming was explained as “a simulation of possible future actions of various market stakeholders; it aims at developing the winning moves of the home company given the real market situation and data; this method is also being called ‘red hat analysis’, ‘red team analysis’”. Intelligence co-creation was explained as “a joint and highly interactive effort of intelligence team and company's leadership that is oriented for developing valuable insights to drive the actions of the company.”

Each question comprised the answer “Do not know/Difficult to answer/Not applicable”. This was aimed at reducing the risk of the respondents giving forced or false answers when they did not have an opinion on a given topic or did not understand a given question.

The survey was sent to 12566 emails from SCIP database. The responses were collected anonymously via Survey Monkey from 7th IV till 12 V 2017. 227 responses were collected but not all of them comprised answers to all the questions. The responses must not be treated as representative sample and therefore the survey results cannot be generalized.

2.2. Respondent profile

The primary industry focus of respondent’s company was manufacturing (25 responses); pharmaceuticals, health sciences, health care (24); information, communications, entertainment (18); financial services, insurance, banking (14); professional services (13). The primary geographical focus of respondent’s company was North America (64 responses), multiple geographies (62), Europe (13), Asia (4), South America (4), Africa (1) and Australia (1). The total yearly revenue of respondent’s company in all business units was as the following: \$0-100M – 34 responses; \$100-500M – 16; \$500M-1B – 14; \$1B-10B – 37; \$10B or above – 25. 117 respondents indicated they were in various roles in business wargaming such as designing, conducting, managing, coordinating, participating, advising, deciding, analyzing. 99 respondents declared no practical experience with business wargames.

The typical planning timespan of respondent’s company given the environment's predictability was from 0 to less than 1 year – 22 responses; from 1 to less than 3 years – 69 responses; from 3 to less than 5 years – 31 responses; from 5 to less than 10 years – 9 responses; 10 years or more – 1 response (based on 149 responses).

The total market share of respondent’s company in terms of revenues was (148 responses): from 0 to less than 20 percent – 57 responses; from 20 to less than 40 percent – 31 responses; from 40 to less than 60 percent – 14 responses; from 60 to less than 80 percent – 3 responses; from 80 to 100 percent – 2 responses. The competitive position of respondent’s company was described (based on 149 responses) as clear market leader by 30 respondents, one of the key market players by 78 respondents and one of many market players by 26 respondents.

The competitive situation of respondent’s company was assessed by respondents using a simple “high – medium – low” scale in five dimensions according to the Porter Five Forces model: power of customers, power of suppliers, threat of new entries, competitive rivalry, threat of substitutes. High competitive rivalry was indicated by 78 respondents and high power of customers was indicated by 77 respondents. The summary of all the responses is presented in Table 1 below.

Table 1.

Summary of responses to question “What is the competitive situation of your company?”

Q23: What is the competitive situation of your company?	HIGH	MEDIUM	LOW	Do not know/ Difficult to answer/ Not applicable	Total
Power of customers	77	47	8	16	148
Power of suppliers	21	54	47	25	147
Threat of new entries	42	42	45	17	146
Competitive rivalry	78	47	6	18	149
Threat of substitutes	40	40	45	23	148

Source: author's own research.

3. Results

As far as the typical results of business wargames are concerned 51 respondents somewhat agreed and 47 strongly agreed that business wargames generate insights of significant value; 63 respondents somewhat agreed and 39 strongly agreed that insights from wargames are translated into recommendations of specific actions; 46 respondents somewhat agreed and 19 strongly agreed that actions developed in the course of business wargames are launched and implemented; 57 respondents somewhat agreed and 19 strongly agreed that implemented actions result in improved competitive situation of a company; 48 respondents somewhat agreed and 21 strongly agreed that improved competitive situation translates into measurable benefits (i.e. market share). The summary of all responses follows in Table 2 below.

Table 2.

Summary of responses to question “What are the typical results of business wargames?”

Q10: What are the typical results of business wargames?	Strongly agree	Somewhat agree	Neutral	Somewhat disagree	Strongly disagree	Do not know/ Difficult to answer/Not applicable	Total
Level 1: Business wargames generate insights of significant value	47	51	12	3	1	38	152
Level 2: Insights from wargames are translated into recommendations of specific actions	39	63	8	5	1	36	152
Level 3: Actions developed in the course of business wargames are launched and implemented	19	46	37	12	1	36	151

Cont. table 2.

Level 4: Implemented actions result in improved competitive situation of a company	19	57	28	2	1	43	150
Level 5: Improved competitive situation translates into measurable benefits (i.e. market share)	21	48	28	7	2	45	151

Source: author's own research.

The percentage of business wargames that are considered to be worth the effort at the conclusion of the wargame was indicated by 14 respondents from 0 to less than 25%. 32 respondents declared from 25 to less than 50%; 20 respondents declared from 50 to less than 75% and 21 declared from 75 to 100% (based on 150 responses).

The respondents assessed the typical relationship between expected and achieved benefits of business wargames (153 responses). 16 respondents indicated that expected benefits are significantly higher than achieved benefits. 33 respondents indicated that expected benefits are somewhat higher than achieved benefits. 37 respondents indicated that expected benefits are equal to achieved benefits. 11 respondents indicated that expected benefits are somewhat lower than achieved benefits. 2 respondents indicated that expected benefits are significantly lower than achieved benefits.

The typical relationship between the costs and benefits of business wargames was evaluated by respondents (150 responses). 6 respondents answered that costs are significantly higher than benefits. 19 respondents answered that costs are somewhat higher than benefits. 16 respondents answered that costs are equal to benefits. 19 respondents answered that costs are somewhat lower than benefits. 36 respondents answered that costs are significantly lower than benefits.

The changes in the use of business wargames in a future were assessed by respondents (150 responses). According to 30 respondents it will significantly increase. 36 respondents assessed that it will slightly increase. 27 respondents assessed that it will not change. 6 respondents assessed that it will slightly decrease. 1 respondent assessed that it will significantly decrease.

The respondents compared wargaming to other analytical methods of generating insight on how to win in a market (152 answers). Business wargaming is significantly better than alternative methods according to 11 respondents. Business wargaming is somewhat better than alternative methods according to 54 respondents. Business wargaming is the same as alternative methods according to 27 respondents. Business wargaming is somewhat worse than alternative methods according to 8 respondents. Business wargaming is significantly worse than alternative methods according to 1 respondent.

The respondents also commented on what the future of business wargames may look like (Question "How will business wargames evolve in a future?"). It seems that the respondents' answers can be synthesized to the following several issues: the business wargame method will be more commonly used, it will be implemented with qualitative and quantitative methods, it will be enriched with artificial intelligence, it will be subject to virtualization.

4. Discussion

The main area of interest in the study was an attempt to determine whether business wargaming does indeed generate valuable results for companies and whether it leads to an improvement in the competitive position of companies. From this point of view, the question "What are the typical results of business wargames?" was crucial. The respondents assessed the results of business wargaming on 5 different levels – ranging from what seems to be the most direct effect of business wargaming (i.e. valuable insights) to what seems to be the least direct effect of business wargaming (i.e. market share). These 5 levels represented the cause-effect chain of translating business wargaming effects into business benefits: insights (level 1), recommendations (level 2), implementation (level 3), competitive situation (level 4), benefits like market share (level 5). Obviously, the higher the level, the more exogenous factors that could have an impact on it, and thus the less certainty that it was business wargaming that led to it. In other words, it is much easier to judge whether business wargaming generated valuable conclusions (direct business wargaming result) than to assess whether business wargaming led to an increase in market share (indirect business wargaming result).

The answers to this key question suggest that business wargaming allows to achieve results at any of the proposed 5 levels of results. This would be indicated by the percentage of positive responses, ie "Strongly agree" and "Somewhat agree" in the total number of responses, excluding non-diagnostic responses, ie "Do not know/Difficult to answer/Not applicable". For individual levels of results, this percentage was: 86% for level 1 (valuable insights), 88% for level 2 (recommendations), 57% for level 3 (implementation of actions), 71% for level 4 (competitive situation), 65% for level 5 (measurable benefits). The distribution of "Neutral" responses would suggest the conclusion that the assessment of intermediate results is more problematic (11% for level 1, 7% for level 2 versus 32% for level 3, 26% for level 4, 26% for level 5).

Analysis of responses to the question "What percentage of business wargames is considered to be worth the effort at the conclusion of the wargame?" presents difficulties, as 42% of respondents indicated a non-diagnostic answer, i.e. "Do not know/Difficult to answer/Not applicable" and, moreover, there is no visible polarization in the answers. This may indicate a faulty structure of this question, because since business wargaming leads to not only direct but also indirect results, then - taking into account the fact that indirect results are delayed in time – at the end of business wargaming it is difficult to assess whether business wargaming was worth the effort put into it.

Difficulties in interpreting the answers also occur with question "What is the typical relationship between expected and achieved benefits of business wargames?". The percentage of non-diagnostic responses is still high here, at the level of 35%, but they are polarized. Only 13% of respondents considered that the expected benefits are slightly lower or

significantly lower than the benefits achieved through business wargaming. Therefore, it can be said that the effect of a positive surprise with the effects of business wargaming is rare. Unfortunately, it is difficult to interpret these results unequivocally, because it is not known at what level the expectations were before conducting business wargaming.

More insight into the situation is provided by the analysis of the answer to the question "What is the typical relationship between the costs and benefits of business wargames?". Only 26% of responses indicate that the costs of business wargaming are slightly higher or much higher than the benefits. Meanwhile, as many as 57% of responses indicate that the costs of business wargaming are slightly lower or much lower than the benefits. This would suggest that business wargaming could be considered a relatively attractive analytical method in terms of its effectiveness.

The results of the assessment of the use of the business wargame method in the future are optimistic, which is the subject of the question "How will the use of business wargames change in a future?". Only 7% of respondents believed that the use of this method would slightly or significantly decrease, while 66% of respondents forecast that the use of this method would increase in the future.

The comparison of business wargaming with other analytical methods is also positive, as indicated by the answers to the question "How does business wargaming compare to other analytical methods of generating insight on how to win in a market?". 64% of respondents say that business wargaming is better than other methods of generating insight, while only 9% of respondents consider it worse than others.

It is puzzling whether the low degree of popularity of the business wargaming method is adequate to its high efficiency. Responses to the question "How does business wargaming compare to other analytical methods of generating insight on how to win in a market?" show that this is an effective method. Meanwhile, the relatively small number of responses to the survey (227 responses were received after the survey was sent out to 12,566 email addresses), compared to the fact that the survey was sent to members of an association associating professionals in the field of intelligence and strategic and competitive analysis, would suggest a low degree of widespread use of the business wargaming method. Perhaps this is due to the fact that business wargaming is, however, one of the most advanced analytical methods and, in addition, requires a lot of commitment from the management.

Interesting conclusions can be drawn from the analysis of the answer to the question "What is the competitive situation of your company?". The respondents assessed the competitive situation of their companies in five dimensions, in line with Porter's classic model of five forces. These assessments show that the companies represented by the respondents operate in conditions characterized by a high bargaining power of customers and, at the same time, a high intensity of competitive struggle in the sector. Such a distribution of competitive forces would suggest that the companies represented by respondents face multiple market and competitive pressures. In other words, these are difficult business conditions. It would therefore

not be surprising that, especially in this kind of demanding environment, companies will lean towards the use of business wargaming precisely to improve their competitive situation through introducing the winning strategic moves. The fact that the survey discussed in this article was answered mainly by representatives of companies experiencing competitive and market pressures (as indicated by the answers to this question) would suggest that business wargaming is particularly useful and common in companies with this type of characteristics. In other words, it seems that the more difficult the conditions for competition, the more common business wargaming will be.

It seems that in the future we should expect a progressive business wargame virtualization, i.e. it will be played by people and teams dispersed in different locations. Effective and proven technology for videoconferencing is already available today. Of course, it would be ideal if all participants of the business wargame could meet in one place and time, but the increasing globalization and hence the geographical dispersion of company employees is not conducive to this and forces virtual communication between employees.

5. Summary

The results of the study suggest that according to respondents business wargaming allows to achieve results on each of the proposed 5 levels of results representing the cause-effect chain of translating business wargaming effects into business benefits, i.e. insights, recommendations, implementation, competitive situation, measurable benefits. Moreover, the respondents indicate that the business wargaming can be considered a relatively attractive analytical method in terms of its effectiveness. The costs of business wargaming are rated as slightly lower or significantly lower than the benefits. Business wargaming is also assessed as better than any other method of generating insight. The research suggests that the more difficult the conditions for competition, the more commonly the business wargaming method is used. Respondents predict that the use of this method will increase in the future.

The research has certain limitations including the following: 1) very small number of responses to the survey despite addressing it to the group of professionals associated in the leading global industry organization, 2) uneven distribution of companies from various industries and countries which was inherited from the structure of the members of the industry organization to which the survey was sent, 3) lack of knowledge about whether responding to the survey the respondents took into account all their professional experience or just from the company in which they worked at the moment of completing the survey, 4) the risk of a different understanding of business wargame among the respondents despite the explanation of selected concepts in the introduction to the survey, 5) the risk of incorrect answers resulting from the lack of adequate knowledge of the respondents e.g. due to leaving the company where the

business wargaming was used, 6) using imprecise and ambiguous high–medium–low scale in survey question *What is the competitive situation of your company*.

Although the results of the survey provide answers to a number of questions, they simultaneously reveal new areas of interest such as types of strategic moves implemented by companies as a result of business wargaming (eg introducing a new product, entering a new market, mergers, acquisitions, strategic alliances), linking the strategic planning process with business wargaming, the use of business wargaming in the face of global crises such as the COVID-19 pandemic.

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