

Problems of Algorithmic Censorship and Personal Branding

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Abstract— In this paper we present systematic model of censorship in the cyber space as related to the modern-day marketing of variety of important elements from tangible commercial products over political ideas to personal public presentation to which we refer to as personal branding. Faced with the dominant presence of the multimedia promotional material in the cyberspace, and the necessity of having an individual be enabled to project her or his presence in the public cyber agora, we analyze modern trends to formalize and restrict style and the content of such public projections. Besides identifying personal strengths, and professional skills, an individual must devise strategy and content to attract attention of the targeted population of digital residents of the cyber space. We find that modern algorithmic censorship significantly threatens and impedes the most effective attention-grabbing vehicles. In our work, we dedicate particular attention to the censorship modelling and commercial consequences upon e-commerce platforms that are being super-scaled and globalized, leaving ethical, philosophical, political, cultural, and other aspects for future considerations.

Keywords — *censorship, moderation, cyber-attack, personal brand.*

I. INTRODUCTION

In this paper, we present some of the results of our work on censorship as related to the censorship automation, and consequences on the personal branding conditioned by the high degree of individual freedom of expression.

To present the main idea of this paper, we clarify relevant fundamental concepts.

Censorship and personal branding are directly related to the notion of communications, conducted in a variety of domains. We distinguish two general communication domains:

- Non-electronic communication domain, (covering real-time verbal communications, or off-line hard-copy based communications using media such as printed press or books), and
- Electronic communication domain, (Covering: radio, television/TV, and packet-networks such as Internet)

In our analysis, electronic communications domain is considered as an extended cyberspace. Common assumption that the cyberspace and Internet are synonyms, is incorrect. Cyberspace in the narrow sense is represented by:

- All digital communications mechanisms including Internet, as well as
- All data that could be accessed via such mechanisms.

We avoid arbitrary use of the term “information.” Information Theory is a legitimate subdiscipline of Communication Theory dealing with the concept of “information” having both, objective and subjective attributes. Instead of “information” we prefer using terms such as “semantic content,” “meaningful content,” “data content,” or simply “content”.

Censorship as a practice of restricting high level one-to-many communications can be implemented in both mentioned communication domains. In this paper we deal with the censorship executed in non-electronic domain and in the cyberspace as a subdomain of electronic domain.



Fig. 1. Fred Lebow, founder of the New York marathon.

Unforgettable example of on-line real-time fine grain TV censorship has been witnessed by the first author on April 17, 1999. During the 1999 NATO bombing of the capital and all larger cities of Yugoslavia, the bombing was not an obstacle for Belgrade marathon. As a sign of defiance, Belgrade authorities have decided to go on with the marathon. In spite of the never seen before, total embargo imposed by the USA and EU allies upon Serbia and Montenegro, during the race, Fred Lebow [1] (See Figure 1), the founder of the New York marathon, dared to physically appear in Belgrade and support the marathon. The first

author with his assistants in Brooklyn, NY, USA, watched direct marathon satellite broadcast from Belgrade. As a token of political disagreement with NATO super force aggression on small seven million European country, Fred Lebow gave an interview to RTS (the most watched government sponsored TV station in Serbia and Montenegro). As the English-speaking interviewer spoke to Fred Lebow, on each Lebow's response, a buzzing noise would block his voice. While the interviewer, a citizen of Yugoslavia could be clearly heard, Fred Lebow's voice was censored. To great amazement of the first author, this event has clearly demonstrated semantic or meaning-based (L8) attack on the analog satellite TV signal transmission (L1). It appears that we had a case of the man in the middle replay attack on the broadcast TV communication session. This memorable demonstration of the real-time fine-grained semantic TV message content censorship has served as our primary motivator for investigation of censorship as a form of malicious communication session intrusion technology.

Upon return to New York, being treated just as a visitor of the country under economic and political sanctions, Fred Lebow was not persecuted, which has not been the case with the best chess player of all times, Robert Bobby Fischer. After playing televised chess match with Boris Spassky in Belgrade under US & EU embargo, Bobby Fischer being US citizen by birth has been denied US passport, denied rights to travel and denied any opportunity to compete in official chess tournaments. Treatment of Bobby Fischer by the US government was an example of the non-electronic domain censorship via an attack on the context in which Fischer has developed his personal brand. The result of this attack was a destruction of Fischer's personal brand, termination of his career and his early loss of life. Both, Fred Lebow and Bobby Fisher appear as unrecognized Serbian heroes and high caliber global personal-brands, who have expressed their genuine ethical and political disagreement with the overaggressive policies of the USA and EU. Considering an act of a war as the highest possible crime, defiant Fred Lebow and Bobby Fisher demonstrate anti-war personal brand consistency.

In papers [2,3,9], authors have covered the subject of personal branding of famous sports and political personalities such as tennis champion Novak Djokovic and President Donald Trump. Crombez and Panageotou, while quoting our paper [3], has elaborated on the phenomena of Donald Trump as a oversimplified personal brand. They failed to perform comprehensive analysis of this complex and historic personal brand; a brand that will remain recognized far in the future. For instance, they failed to recognize President Trump's personal branding amplification context, projected in the well documented declining average US tax-payer wages [5] and job security. Besides, self-aggrandizing motives of President Trump, Crombez and Panageotou failed to acknowledge that President Trump's had several genuine patriotic problem-solving motives defined by his personal branding operational context [2,3].

II. CENSORSHIP MODEL

Joey Senat, associate professor at Oklahoma State University has presented a report with an exhaustive list of different censorship definitions [7]. All quoted definitions in the report were primarily social science bound, and as such

incomplete. We extend commonly published definitions with our results of censorship systems analysis.

Summarizing definitions presented by Senat, we state that censorship represents the suppression or prohibition of any part and form of text of a paper, article, book, or public statement, video clip, complete movie, painting, or music piece, etc., that are considered as unacceptable to be disseminated to the wider audience, typically rationalized as being culturally offensive, obscene, politically dangerous as threatening the socio-economic establishment stable continuation, or endangering the security of the country. Censorship means stopping or impeding free communications over any of the mentioned public communication media. We consider censorship as a highest-level (semantic layer L8) Denial of Service (DoS) attack aiming at all session elements:

- Topological elements of the communication session, (sender, receiver, and the message) as well as,
- All session protocol layers and sublayers shown in Figure 2, (From L1 to L8).

Censorship as publishing session attack may be:

- Preliminary attack, (e.g., removal of DNS records),
- On-going-session real-time or immediate attack, (e.g., "Information Filtering"), and
- Post-session or postponed attack, (e.g., deletion of stored published content).

These censorship session-attacks are parts of the censorship cube shown in Figure 3.

In general, from the data flow direction point of view, communication session can be:

- Point-to-Point (one-to-one, P2P, or 1x1),
- Multicast (one to many or 1xN publishing session)
- Broadcast (one to all, or 1x* publishing session), and
- Broad-call (Many to one, or Nx1)

As a rule, censorship attacks are applied against 1xN and 1x* publishing sessions.

Modern Web based multi-media platforms have initially promised unrestricted high layer (L8) channels for public discourse. Unfortunately, in recent years such a promise has been frequently broken by ever increasing suppression of the free public addressing. Traditionally, among countries, the leaders in the suppression of free speech in the cyberspace were Saudi Arabia, Iran, North Korea or China. Unfortunately, in recent years, this list of countries have been extended by countries such as Canada and even USA. The difference in censorship motives in these two western countries does not negate the existence of the visible censorship.

In case of Canada, the most illustrative non-electronic domain example of political censorship is the 2011 case of detention of historian prof. Srdja Trifkovic at the Vancouver airport under improvised charges of crimes against humanity. Prof. Trifkovic was not allowed to deliver his invited lecture at the University of British Columbia [13]. This act of immediate Canadian government political censorship triggered by the anonymous Canadian government decision

maker and unsubstantiated decision rationale ended up in the avoidance of all legal challenges and appeals of prof. Trifkovic until the statute of limitations had prof. Trifkovic win the case in Canadian courts. He won but his lecture has never been delivered [8]. The goal of the censorship act has been achieved. Preliminary censorship has prevented public addressing on allegedly offensive topic. Assessment of the authors is that prof. Trifkovic lecture would not have been able to move any of the Canadian political mountains and that events such as his hasty detention only projects embarrassing dysfunctional and fact-blind Canadian government censorship policy making system. The final result of this brutal censorship case was the enhancement of the genuine personal brand of prof. Trifkovic as a daring radical academician, free thinker and Serbian patriot.

Another drastic example of political censorship in the state of Canada was a denial of Canadian mail services to Ernst Zündel (1939 – 2017) Jewish Holocaust denier. In this particular case, physical communication channels such as mail delivery were denied to Zündel's. Zündel's controversial position on the issue of well documented World War II Nazi atrocities, without an easy to win discourse, has been hard censored accompanied with the repeated imprisonment in Canada, USA and Germany [14]. The of harsh treatment of Zündel was development of the recognizable negative personal brand of Zündel who used his brand to generate revenue from the far-right supporters from different countries.

Censorship in United States becomes lately very important and sensitive issue that personal or corporate brand owners must deal with. For instance, numerous portals, blogs, Facebook profiles, YouTube channels, etc., have been demonetized or taken down for promoting unacceptable political agenda. The most notorious subjects censored are the support of President Trump and promotion of ultra conservative points of view. Instead of the expected engagement in the semantic duel operating along semantic axis of the 3D cyberspace-activity model presented in [2,3] and shown in Figure 4, censors directly or indirectly prefer to use the other two axes of the model, contextual and technological to resolve the cyber conflict with the target of censorship. For example, demonetizing unwelcome semantic content Web Publishing Service Providers (WPSP) represents soft form of censorship along Operating Context axis.

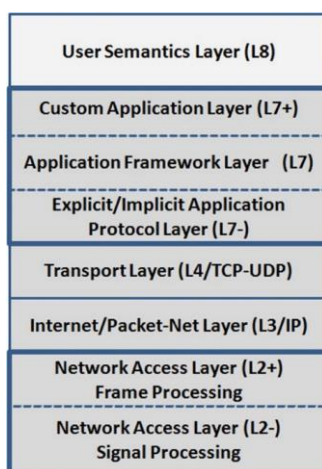


Fig. 2. Extended combined ISO-OSI and TCP/IP layered communication session model.

Terminating publishing platform services, present examples of contextual censorship action. Selective removal of Tweets, YouTube clips or slowing down communications with the censored publisher or even disabling of communications, are accomplished by executing censorship along the technical axes of the model.

Some forms of censorship may involve countering censored publisher with force. An example of such a censorship is treatment of the Wikileaks portal owner Julian Assange.

Direct censorship by the government is unconstitutional in the USA. However, indirect government censorship via private pressure groups and WPSPs such as Apple, Amazon, Facebook, Tweeter or YouTube, circumvents the law prohibiting government direct censorship.

We distinguish two forms of government censorship:

- Direct censorship (e.g., censorship seen in Iran or Syria), and
- Indirect censorship (e.g., using owners of publishing platforms in the cyberspace or using hacking services of Israeli companies to perform soft or hard Denial of Service (DoS) attacks on censored publishing sites).

From the foot-print point of view censorship can be:

- Blanket or total,
- Coarse-grained, and
- Fine-grained.

Blanket censorship example was clearly total attack on Bobby Fischer. YouTube has exercised total or hard (DoS) censorship attack on Alex Jones InfoWars vifro clip broadcasts, while Amazon Cloud Service Provider (CSP) has executed a DoS attack on the free-speech Parler portal [6]. The most notorious blanket censorship has been a ban of all public addresses of President Trump by the leading Web Platform Service Providers (WPSP's) such as Tweeter, YouTube, Amazon, FaceBook, Apple and many more.

Examples of the coarse-grained censorship are removal of frames of the video clips showing assassination of King Aleksandar in Marseille or Zapruder's film showing assassination of President Kennedy in Dallas Texas. Common examples of the fine-grained censorship in the cyberspace are voice-over sound-beeps when public speaker would use an obscene word, foggy spots covering faces or car-plates in the google-map images or video clips, or black span-strips over text documents with sensitive data elements.

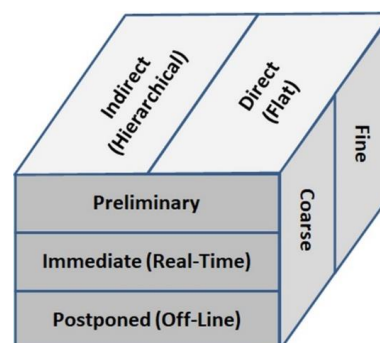


Fig. 3. Censorship cube.

To engage in censorship, surveillance is necessary activity. Surveillance can be:

- Casual or intermittent,
- Periodic, or
- Continuous.

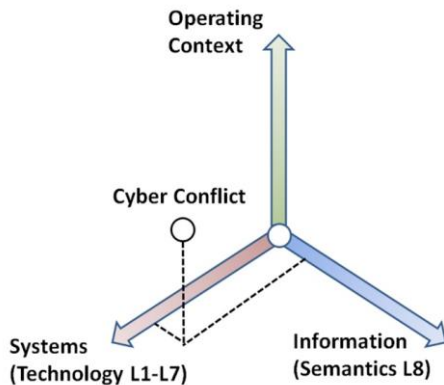


Fig. 4. 3D cyberspace conflict model, [2,3,19].

Surveillance may be a part of the immediate and direct censorship, or a part of postponed and indirect censorship.

Specific form of indirect extremely soft censorship is performed with the surveillance only, when surveillance does not lead directly to censorship. The knowledge or belief that a computing system or its use is under surveillance can have a “chilling effect” with systems owners leading to the so-called self-censorship.

Self-censorship is the most devastating form of censorship when building successful authentic personal brand is in question.

III. ALGORITHMIC CENSORSHIP IN THE CYBERSPACE

We state that the Web is a type of standardized distributed application running on the Internet as execution platform. Internet or TCP/IP net acts as computation and communication infrastructure used by distributed applications. Censorship or attacks on the Web and Internet are two distinct activities. Censorship on the Internet level is applied to the systems or infrastructure domain entities [18], while Web censorship is applied to application domain entities (higher L5-L7 layers).

Sessions in the electronic domain can be effectively censored using high tech mechanisms. Censorship mechanisms used in the narrow-sense-cyberspace (e.g., Internet), are being continuously perfected. New censorship computation hardware, new algorithms and software are being introduced using the latest Artificial Intelligence (AI), Machine Learning (ML) and Data Science (DtSc) developments.

Automated or algorithmic censorship has been designed as primarily Web censorship capable of implementing individual or hybrid algorithms.

Algorithms applied are diverse in their core ideas, target selection (individual, organization or region), in their timing (applied one time, periodically, or as required) and may be diverse along all edges of the censorship cube shown in Fig. 3.

An argument may be that certain published content may harm users, e.g., by offending their private feelings or by leading them into engagements that may offend other individuals or organizations.

With such a sort of arguments, the so-called censorship may be implemented. In simple terms, censorship is commonly understood as control of published content or control of the publisher.

Mechanisms that are not transparent, i.e., opaque, are frequently applied in a form of an anonymous cyber-attack.

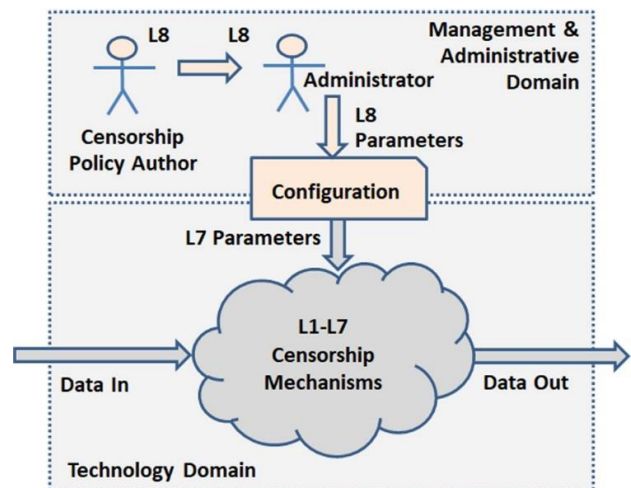


Fig. 5. Filtering algorithmic censorship model with an algorithm acting as a Censorship Policy Author.

Algorithmic censorship can be deployed as a device or as a program in any of the individual layers or sublayer of the extended ISO-OSI and TCP/IP layered model shown in Fig. 2. Some algorithms may cover multiple layers of the model.

Fig. 5 illustrates algorithmic censorship system elements.

Censorship algorithm involves:

- Input data semantic content monitoring (surveillance),
- Detection of “to-censor” semantic-patterns in the monitored data, and
- Censorship decision generation.

Censorship algorithms are driven by censorship policies (See Fig. 5) and results of semantic content of published data surveillance, which are L8 activities. Censorship algorithm can be applied in all layers and sublayers of the extended layered model shown in Fig. 2.

Algorithm nature of the automated censorship is based on the algorithm configuration parameters presented as L8 and L7 layers data, (See Fig. 5). Censorship policy maker is a key element in the censorship system shown in Fig. 5.

IV. PERSONAL BRANDING AND CENSORSHIP

In common interpretation, “to brand,” means to label, to mark, or to produce a sign of identification. This traditional meaning of brand has received an extended meaning and classification when used in the modern commercial contexts. Personal brand is one of the traditional brand extensions [9].

Personal branding as a subset of the personal marketing set of activities, has been discussed by authors in reference [9]. A commercial brand is a multidimensional label which besides identification presents an implicit value statement about the labeled commercial entity that could be a product, an organization or individual. Use of the low-cost Web platforms is the reason why the Web became the dominant electronic domain platform for commercial message dissemination. WPSPs as Web platform service providers are becoming commercially more powerful than TV networks. Personal branding using WPSPs such as Tweeter, FaceBook, or Youtube is attractive and cost effective to brand owners. However, banning a brand on any of these Web platforms has enormous destructive power, while being easy to implement, by simple modification of censorship policy.

The statement that a brand owner is in control of his/her personal brand seems not to be completely valid. When establishing personal brand, it is essential that the brand owner defines herself/himself as a commercially attractive personality. Since perception is in fact individual reality, personal brand owner must carefully and creatively design exposed brand image.

In reference [9], authors elaborate on the personal brand essential attributes and define the so-called Brand Time to Live parameter, (Brand-TTL). Brand-TTL extension is possible if a brand is reinforced by repeated media presence and semantic intensity of the media presence. Creative or radical brand advertisements, appear as mental-reframing presentations, having strong semantic intensity, and easy to remember for longer time. According to Information Theory [18], creative presentations as less expected are having higher information measurement value. Presenting new, odd, unexpected, outstanding, unusual, refreshing, and surprising semantic content is more informative with potential to make longer lasting semantic impact on the targeted presentation message receiver. Having this in mind we state that imposing self-censorship upon the personal brand limits the creative presentation space, and information value of the brand enhancing messages.

Wide socio-economic, political, and physical pressure combined, may result in the phenomena of self-censorship and removal of authenticity in public discourse. North Korea, Stalinist Soviet Union, Mao's China [12] or Enver Hoxha's Albania are examples of countries where genuine discussion on any subject of public interest has been tightly controlled. As a result, these countries were continuously in economic depression. History teaches that fair economic prosperity and individual freedom of expression are complementary. We are aware that unfair economic prosperity based on the colonial or criminal exploitation is possible too.

In vibrant modern economies, individual freedoms relevant to economic prosperity are granted to all citizens. When economic success is in question, a rule of the essence is that all individuals or organizations have granted equal opportunities to succeed in realization of their lawful business plans. An assumption is that no plan conflicts the existing legal and political framework, where such a framework is assumed to be fair.

Building up a personal brand, a brand of a product or company should require minimal self-censorship necessary to accommodate fair legal and political framework. In unfair operational context, tightening of such a framework results in

self-censorship (soft censorship) and hard censorship in general. With excessive unfair censorship commercial freedom of action is reduced and creative planning is limited. We stress that fairness and equal opportunities to all, have complementary meaning.

Successful personal branding demands creative and attractive brand public appearance, i.e., public interface. Old saying that the book is judged by its cover that readers can see may be allegorically applied to personal branding. Sales oriented personal brands, commercial brands, are matched to the proper intellectual and emotional impression that brand observers may have. To be impactful, brands must be differentiated from the competing brands.

General advice by personal branding trainers and advocates, is to build an accurate, authentic, and genuine brand. A person behind a well-recognized brand is passionate about the personal presentation, regardless of the operational market segment.

As mentioned in [9] brand value is not only commercial in nature. Besides the commercial value, brand may carry values that are not immediately commercial. Examples of such values are cultural or political values. When the owner of the commercial personal brand attempts to utilize other attributes of the brand such as political, departing from the domain of commercial activities and drifting into the domain of other than commercial, such as domain of political brands, a threat to the stability of the new domain becomes recognizable [11,15]. The main actors of the threatened domain, in this example a political domain, are expected to resort to censorship with respect to the intruding owner of the commercial personal brand. This was the case of the unseen censorship of any political figure in the history of the USA, censorship of the 45th president of USA. Throughout President Trump's four-year presidential term and after controversial 2020 US presidential elections massive censorship has significantly reduced value of his personal brand.

Censorship is the most destructive mechanism when personal branding is in question. We recognize that censorship in the cyberspace on Web platforms is determined by one of the two censorship policy making options:

- Manual; directly involving human censor, or
- Automated; having an AI based algorithm create censorship policies.

The second option of censorship policy creation can be the most devastating. Instead of only producing censorship L7 configuration parameters, algorithmic censorship systems generate L8 semantic policies too (See Fig. 5). The danger of using such systems is twofold:

- Unreasonable censorship is unexpectedly likely, and\
- Accountability of policy maker is almost impossible to have.

Unfounded algorithmic censoring of a personal brand may cause irreparable brand damages that are hard to recover from or compensate for. New laws protecting personal brands against automated algorithmic censorship attacks are necessary.

V. CONCLUDING REMARKS

Regarding personal branding and censorship, Roya Ensafi [17], summarizes that Internet censorship, brutally offends the dignity of a person that censor deems undesirable. We distinguish in this paper Internet and the Web, considering Internet as a systems layer infrastructure and assuming that the Web is application layer infrastructure. Internet is powered by a set of systems protocols known as TCP/IP suite, while the Web covers standardized set of application protocols such as HTTP, MIME, FTP etc. In addition, we state that all censorship activities are initiated in the L8 semantic layer of the extended ISO-OSI 7+1 layers model where censorship policies are created and managed (See Fig. 2). We also stress that using AI driven algorithmic creation of these policies can constitute the most devastating form of an attack on the personal brand in the cyberspace.

In democracies such as USA or UK, government-imposed direct censorship is not legally permitted. However, indirect censorship of personal brand owner activities is possible. Specific legal Web censorship was established in the USA as “Digital Millennium Copyright Act of 1998,” (DMCA law) which allowed preventing online publishing of the copyright content. This law has initiated the development of surveillance and automated censorship mechanisms, which are currently used beyond the copyright protection domain.

Besides Internet Service Providers (ISPs) in this paper we define WPSP type of a company as Web infrastructure service provider. Powerful transparent and non-transparent interest groups operating in the L8 layer can influence WPSP censorship policies.

While ISPs operate on the lower or systems infrastructure plane, WPSPs operate on the higher application plane. Although unconstitutional in many countries (e.g., USA), government censorship can be exercised indirectly through the private sector actors such as ISP’s or WPSP’s.

Non-transparent powerful interest groups are at convenient liberty to provide ad hoc definitions of the acceptable or unacceptable semantic content and impose those definitions upon ISPs or WPSPs. The lack of censor’s visibility results in the lack of censor’s accountability.

Unconstrained by laws, censors or censorship policy makers are free to impose definitions of acceptable context to be published. Censorship policies are frequently driven by the interest groups that favor persistence of the overall economic and political establishment leaving limited operational space for any critique, challenging discourse, corrective activity, or creative personal brand building activity.

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