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Determining Strategic Value of Online Social Engagements

Carlos Buskey and RajniGoel
School of Business, Howard University

ABSTRACT: *Over the past few decades social networking connections through individuals and open publishing in general have rapidly became a popular tool for maintaining relationships, communicating and expanding businesses. Individuals invest hours in building social capital and their social identify (SID) via online engagements. We present a methodology to quantify the multitude of artifacts that can be derived from online social engagements and develop a framework that measures the value of an individual's online social engagements. ASID value is used to deliver a score for each individual user; a score that will assist you in understanding your return on investment (ROI)and social capital from your online social networking activities. The framework creates a score to support and determine which specific engagements add and increase your personal value chain. This score can provide benefit to users for career, personal, and business opportunities.*

I. INTRODUCTION

The popularity of online social engagements has increased in social popularity, critical business decisions, and relationship building. Today, 7+ Billion people are registered users on social media today and Facebook alone is sharing over 250 million post per hour. Facebook has over 1.3 billion users and just released that the average user spends at least 55 minutes per day strolling through social media timelines (Simos, 2015).As individuals engage in social network platforms, meta data is being recorded, creating a record of artifacts which collectively reveal a infinite amount of behavior characteristics from as simple as categorized interest ("likes") to moods based on a specific subject ("reactions"). Also, firms have realized the potential value it can provide; from more product and service awareness, to customer relationship management, and trade.

This strong influence of social networks formed by social ties (personal, professional, community related) in our daily livesgenerates the critical need to understand if and how usage patterns influence onespersonal and professional value chain online. For example, the users of social media platforms assist business in planning, building and executing an effective strategy to use these networks to cultivate and grow the business to ultimately support the business model. Hence, individual users and businesses (driven by ROI) are now searching for implementable formalized methodologies which can assist them in deriving the immediate value from the analysis of this usage data from social online engagements.

Themotivation of our research stems from this immediate need to systematically describe the value observed from social network exchange: utilize social network behavior identities to measure bonding and bridging social capital. We create a qualitative and quantitative framework that relates social media behaviors to social capital. More specifically, relationships among associated metrics are indicators of which types of social capital is needed to best manage the three types of desired value. People utilize social engagements to create a personal network to better manage networking, sharing of ideas and self-promotion. Self-promotion is directly related to managing actual or virtual connections in an attempt to protect an established social perception. This social perception is stabilized by a *Social Identity (SID)*; *SID* value is a function of social reach and identity usage (Goel, 2014).

This research extends utilizing the SID measurements and introduces a framework that can be used to measure SID more discreetly and demonstrate an immediate return on investment of online engagements (time, location, relationships) to strategically impact your social capital. Traditionally, social networks individuals with benefits (social capital) as emotional support and diverse set of perspectives (Granovetter, 1973), (Putnam, 2001). We introduce a new framework for measuring social engagement value streams relative to your SID Value. This includes identifying which types of measures are best suited for assessing social capital (in a personal, business or academic environment) derived from social media, to creating social media content sharing policies that match your personal value chain, match career goals or direct business value.

This will assist network users in identifying potential variables that explain how individuals obtain more or less social capital from social medial usage; the individual is empowered to purposefully engage to create value of high or low SID or use the framework to understand social network sites return oninvestment (SNS_ROI). Social media platforms (e.g. Facebook, Twitter, LinkedIn, Instagram, etc.) are designed to increase the social engagement experience (share, micoblog, host, plan, voice). Typically, social capital is the end goal of online engagements; which, is not limited to social reach, relationships, interest, membership, likes, quantitative information, and sometimes used to establish trust. However, social behaviors are built from

engagements and activities over time with quantitative (time spent, amount of data, connections, number of likes) and qualitative (opinions, reactions, interest) artifacts. The framework links the artifacts to a map and provides a measurement to understand a users social identity score. Ultimately, the study seeks to assist users in understanding the value of high or low SID and how to use the framework to understand online social ROI.

II. BACKGROUND

The measuring of user behavior on the online social web has been receiving attention recently by researchers. Some have created a measurement framework to observe user activity and provide comprehensive measurement analysis of total usage and behavior as examined on popular Online Social Networks (ONS) and further classify users into groups based on their usage patterns (Gyarmati& Trinh, 2010). Others have provided timing information of active users based on packet level traces (Benevenuto, 2009). But little work has been done in relating online usage behavior to the attribution of value to the usage patterns on OSNs. This research is an extension of the notion Social Web identity established upon trust and reputations (Goel, 2014).

That research introduces a social identity value (SID) to measure accountability and trust for registered users of Social Network Sites (SNS). The framework establishes a value (score) based on how long users is on a site, the volume of data transmitted, the number of friends likes, dislikes, friends request, and online community relationships. The outcome measures the confidence level and an estimation of character for SNS users leading to the quality of individuals and firms you should connect with online. Measurements to calculate a *Social Identity (SID)* value would include the following:

1. Number of social networking groups an individual belongs to (on the average).
2. Probability that an individual accepts or rejects an invitation to join a group, or the individual accepts and rejects someone asking to join his/her group.
3. Number of relationships an individual maintains at a given time (on the average)
4. Amount of individual traffic volumes and then compare to the others on the social networking site.
5. Individual size or membership compared to the other social networking sites
6. Individual usage statistics – and then compare them to other social networking sites
7. Individual target social groups are broken down by age, gender, race, education, religion, etc.

Social reach imperatively is valuable in the number of individuals a user can establish contact with across SNS. However, the value is embedded in the quality of relationships, types of memberships, quality of data, and like connections in online communities. The study will expand SID to include social reach and social engagements as a strategic class to include SID personal '[three classes create the core components of this framework establishing the motivation for a high SID score for SNS.

The benefits people seek and receive from their social media networks (*i.e.*, informational, instrumental support,and/or emotional support); (2) how tie strength influences which benefits people receive; and (3) the underlying processes, e.g., the role of self-disclosure or relationship maintenance strategies

As explained by others (Utz & Muscanell, 2015), (Granovetter, 1973), (Putnam, 2001), benefits people derive from their social networks in terms of social capitol are two pronged:

(1) the bonding capitol (strong ties provide them with emotional support)
(2) The bridging capitol (weak ties provide them with non-redundant information and different perspectives).

Managing social capital involves quantifying and evaluating multiple dimensions of social identity that is created by actions and artifacts recorded in the digital social platforms. The recorded data includes items such as likes and dislikes, views towards issues, pictures with valuable metadata, insight into subjects of interest, medical and health vitals, and a host of other valuable data. With metadata providing the most value to businesses (ecommerce), the behavior patterns formed will aide users in establishing social media best practices while using social platforms. These artifacts may also be used to understand a user's behavioral characteristics. The characteristics provide a direct impact on users social identity. With so many options and interest, users require a framework to aide in managing social engagements, leading to awareness and better control of social network activity.

Social media policies are firm in business and professional settings loosely established by technology organizations. In a recent article published by DebShinder in TechRepublic, she establishes that corporations reacted to social media polices by simply banding or limiting certain sites akin to the "Prohibition in the 1920's." Today social media best practices are common and important to business because social media platforms are critical to the success of company's philosophy and business practices. However, at the personal tier (assuming the tiers are business, personal, academic) users best practices are not used and closely related to principles and values. More than ever, measuring social media activity via SID score encourages users to establish better social network patterns.

III. METHODOLOGY

Branching of the prior SID attributes, we extended, adjusted, and formalized the measurements and their relevancy to social engagement value streams(Goel, 2014). The relationships among these enhanced SID attributes, while socially engaging online, provide various levels of social capitol. The personal value chain online is a qualitative notion derived from attributes as value of communities, strength of network, breath of social reach, social trust (from SID) and social media quotient. Table 1:Social Identity (SID) Attributes provides the new attributes from which SID is derived.

SID Attributes	
APR	Users *Approval* rating based on number of Likes/Dislikes of shared content
INV	Probability that an *Individual* accepts someone asking to join a group
MEB	Individual size of *Membership* compared to other social networking sites
REL	On average the number of *Relationships* an individual maintains at a given time
SNG	Number of *Social Networking* groups to which an individual belongs
TFC	*Traffic volume* of usage compared to other users on SNS
TSG	Individual *Targeted Social Groups* demographics (age, gender, education, ethnic background etc.)
USG	Individual users *Usage* traffic compared to other SNS users

Table 1: Social Identity (SID) Attributes

Value is subjective; for example, it can potentially be measured by an increase in items such as business, career, academic opportunities, amount of personal growth, and many others. We formalize value in three categories: Business Value (SID-BV), Personal Value (SID-PV) and Career Value (SID-CV).Business Value (SID-BV) is based on social capital that leads to economic gain, reinforcement of business practices, and other business outcomes. Personal Value (SID-PV) offers a pattern of attributes that closely demonstrates a user's value chain. Career Value (SID-CV) is established whena user is seeking to maximize SNS to advance one's career (group networks, relationships, career specific groups, etc.).

The Social Capital Framework (Figure 1) maps the social engagements and reveals how SID attributes are categorized based on a user's SNS activity. SID-PV is mapped to those attributes that provide greater bonding capital. SID-BV is closely tied to bridging capital in the social capital stream. And SID-CV draws from both SID-PV and SID-BV because both level of capital is required to streamline opportunities to advance the users career.

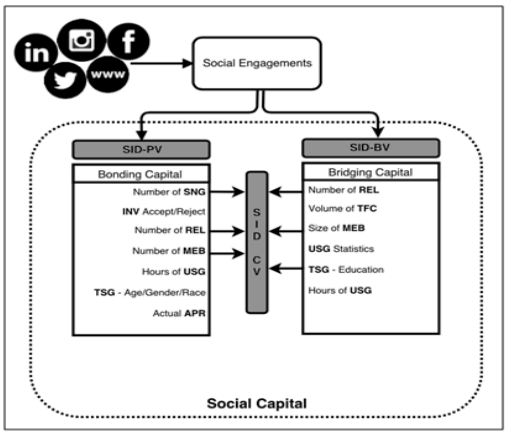

Figure 1. Social Capital Framework

IV. SOCIAL CAPITAL THRESHOLD EXPLAINED

The Social Capital Threshold diagram (SCT_8) is framework used to measure the SID value per attribute and graphically depict if the user social network activity is bonding or bridging. This graph will also reveal the immediate benefit of SNS use and links to a user's social value stream (personal, business, or career value). The SCT_8 threshold analysis is beneficial in charting and comparing SID scores for a particular user and mapping it to the true social network patterns that represents the natural way a user interacts with SNS and resources. Ultimately, the threshold diagram will aide users with changing social practices, patterns, and methods which is most effective and desired when investing in SNS and resources. Future development will improve this tool to analyze a group of users.

The SCT_8 consist of eight spokes representing the main attributes in the SID score. Spokes are evenly disbursed to form a radii. The spokes are labeled by SID attributes: APR, INV, USG, TFC, TSG, SNG, MEB, and REL (See Table 1). Lines are drawn to each attribute to measure whether the quantitative values are high or

low and how they correlate with bonding or bridging capital. In this study the SCT_8 is proposed as part of the SID score framework to reveal an ideal footprint of bridging vs. bonding capital.

The user's approval rating (APR) is based on the number of likes/dislikes a user acquires for shared content (Goel, 2014). APR provides a user's instant feedback for shared post and data from its directly connected relationships and more one-on-one and one-to-many communication(bonding). APR also validates relationships, provide immediate approval/disapproval of ideas, and quantifies interest and values(bridging). SNS users create stronger ties with connections based on approval and create deeper networking opportunities based on common interest, validation of services, and connections. Approval rating is largely the stimuli for users on SNS and forms the huge value add in the driving force of social media adoption. APR should be high for bonding and medium for bridging capital.

Social network sites provide special interest groups which has garnered huge adoption over the years (Brocke, Richter, & Riemer, 2009). Users and corporations create groups and SNS users will join the group based on subject matter or mission. The probability that an individual accepts or rejects a user asking to join a group represents INV. Because bonding capital pay close attention to acceptance and seeks to create greater bonds through closer one-to-one relationships, group ties may be viewed as disposal and a user may not care if accepted into a group. Bridging Capital creates a larger network of quarantined users with like interest. INV is a global form of acceptance and relationship connections on SNS. This study recommends INV is low for bonding capital and bridging capital is medium.

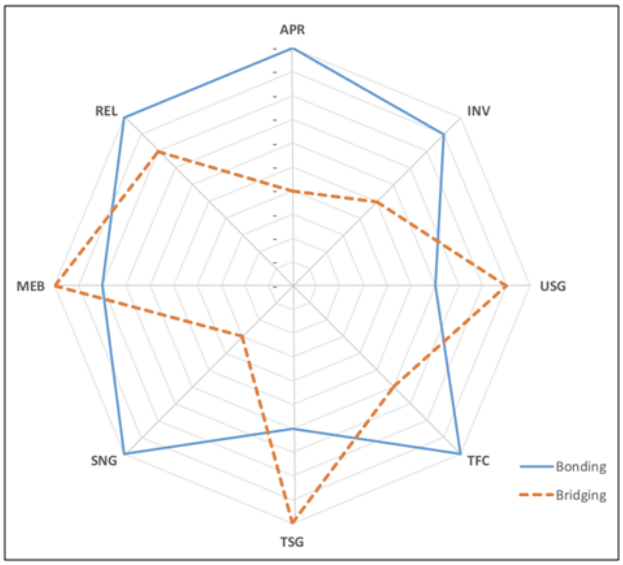

Figure 2. Social Capital Threshold (SCT_8)

If users are accepted to a social network group (SNG), bonding capital increases offering greater support which may be grouped by demographics (age, religion, race, gender, etc.), special interest, careers, and other areas. Groups offer weaker ties because communication is more direct than indirect and bridging opportunities loses control over what is communicated in these special interest groups. The number of SNG and users belongs to on average should be low for bridging capital and high for bonding capital.

Another attribute that affects a user SID value is an individual users social network site (USG) traffic compared to other SNS. USG takes into account users volume across heterogeneous social networks. Greater relationships are established and maintained across heterogeneous networks creating stronger connections (J. Vitak.,2014). In addition, bridging capital is established because of the advent of relationship management across multiple SNS. Bonding capital has a low concern for other sites if the support is lower; direct communication is lower; and trust is higher on more homogenous platforms. However, popularity may have some level of interest for users seeking bonding capital. We recommend that bridging capital should be high and bonding capital is medium.

Social network users participate in multiple SNS each providing a different purpose or service. The amount of registered users varies across different SNS platforms. The SID score attribute MEB represents the size of memberships compared to other SNS, which is measured by the average number of connections a user has on a given platform. Using SNS Facebook and Twitter as an example, the average user has 338 connections (Friends) on Facebook and 208 Followers on Twitter creating a measure of Low, Medium, or High (Smith, 2014)/ (Muruganandam, 2016). A user with 627 friends on Facebook would be close to medium and a friend with 140 followers on Twitter would be considered low.

The more connections on a SNS the better access to resources, emotional support across heterogeneous SNS platforms, access to a global community of users and increasing bonding capital (Vitak, 2014) . Bridging capital benefits from higher connections increasing one to many relationships, creating a wider network of opportunities, and consistent messaging. This study recommends that MEB should be high for both bonding and bridging capital.

The more connections a user maintains on a SNS the greater chance of cultivating relationships. The greater the SNS connections will create greater opportunities for likes, satisfaction and confirmation (approval) which directly impacts bonding capital. Higher connections also provide access to unique and diverse perspectives benefiting more to bridging capital but also some direct bonding capital (Burke, Kraut, & Marlow, 2011). As MEB focuses on the number of memberships across heterogeneous SNS, REL represents the average number of relationships maintained on a single SNS (homogenous SNS). Based on research, REL should be high for both bonding and bridging capital.

An additional SID attribute that measures the individual targeted social groups which are partitioned by age, gender, race, education, religion, etc (TSG). Users may only join and participate in group that support a specific cause or addresses issues that support its social value chain. The number of diverse groups may be lower because users may only seek support from groups that support a specific demographic (eg. race, religion, etc). Weaker ties may be higher in target groups to increase focused or tiered communication. TSG is high for bridging capital and medium for bonding capital.

SNS users generates traffic as users exchange and post information through updates, communication, and participating microblogs (Knapp & Vangeslisti, 2003). The information exchanged by initiating and consuming broadcast messages allows one to keep in regular contact through a stream of small updates. The amount of individual traffic volume uses (TFC) compare to other SNS will affect the users SID. Greater bonding capital is generated through increase traffic spawned by direct communication, post approval (live/share), responding to postwith comments, etc (Allan, 1979). Rich communication increases with traffic and response reciprocity (Burke, Kraut, & Marlow, 2011). Bridging capital's TFC reflects direct communication but may in reduce the level of traffic if users receive no value from the electronic dialog. TSG should be high for bonding capital and medium for bridging capital.

V. CONCLUSIONS

The impact of this framework provides a footprint to establish a baseline for measuring and outlining the value of high or low SID value. In the finance industry, a user's credit score reveals the individual ability to repay debts. The lower the score the lease likely a person would be granted credit and/or it will result in a higher interest rate. High credit scores yield better borrowing potential and interest rates. A high SID Value for users who is seeking to promote a business (SID-BV) might adjust its online practices and policies to maximize the value bridging capital.

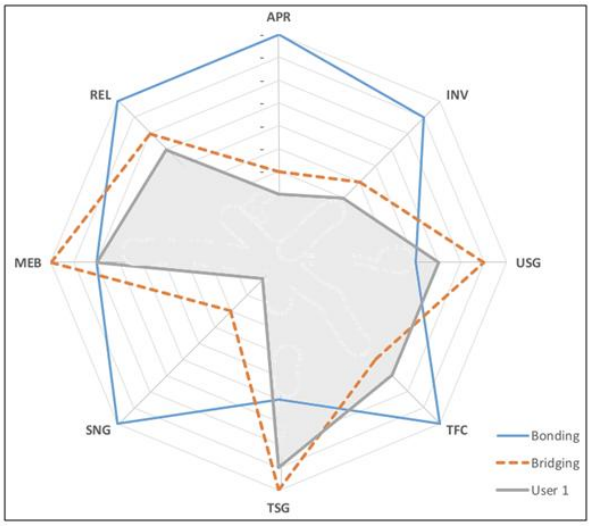

Figure 3. SCT_8 applied.

A SNS user would look closely at their individual SNS attributes and use the framework to measure the type of capital derived from social network activity. The user quantitatively uses their score from each SID attribute and enter it into the SCT_8. Below is an example of SID attribute score from a user that mostly uses SNS for news and networking opportunities(See Figure 3). User 1 SNS activity maps closely to bridging capital

which will reveal to the user the investment in SNS and will aide what activities they should maintain or increase to yield greater value. (Gyarmati, 2010)

In summary, the framework provided in this study will provide a user with a graphical representation of how a SID score provides immediate value. Based on a user's score, High or low will establish a foundation to create and maintain establish polices when using SNS. In future studies, we will validate this framework by using SNS data based on a user's objectives and outcomes of social network activity. We will also study use cases and demonstrate how the SCT_8 can be deployed as instrument to provide ROI of online engagements and benefit of social capital.

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