

# WHITE PAPER

## Social Realization Framework



### Abstract

This paper discusses the methods and techniques for organizations to harness the social media components to actively engage its customers and employees and create a social community to collaborate and encourage participation and contribution. We will also discuss a social media realization framework which can be readily adopted by organizations to social-enable their online platform. The framework can also help in various aspects of business that includes collaboration, marketing, and understanding user insights. The social media realization framework also offers the Software as a service (SaaS) based model wherein the services can be deployed and exposed through cloud. We will also discuss the benefits and techniques to create a social platform for mobiles and tablets.

## Introduction

The popularity of Web 2.0 is bringing the social media integration into the mainstream online platform. Social Media technologies help us to harness the potential of the Internet in a more collaborative and peer-to-peer manner, helping users to communicate and collaborate, while at the same time contribute and participate. It is shaping the way we work and interact with information on the Web and is shifting the focus to the user of the information.

Another aspect of this is the “pervasive computing” which involves the proliferation of devices. Users expect seamless experience across various channels and there is a proliferation of devices that includes the mobile, tablets, PDAs etc.

## Social Media Computing

<b>User Generated Content</b> <ul style="list-style-type: none"> <li>• Upload/Create Content</li> <li>• Moderate content</li> <li>• Rate/review content</li> <li>• Flag/Block content</li> </ul>	<b>Wiki</b> <ul style="list-style-type: none"> <li>• Information management</li> <li>• Collaboration</li> </ul>	<b>Feeds</b> <ul style="list-style-type: none"> <li>• Exposing the content as feed</li> <li>• Consuming the feed</li> </ul>
	<b>Micro-blogging</b>	<b>Mashup</b> <ul style="list-style-type: none"> <li>• Aggregate data from multiple sources</li> </ul>
	<b>Communities</b> <ul style="list-style-type: none"> <li>• Create/Manage groups</li> <li>• Manage/moderate discussions</li> </ul>	<b>Widgets and Gadgets</b> <ul style="list-style-type: none"> <li>• Pluggable Client-side components</li> </ul>
<b>Forums/Blogs</b> <ul style="list-style-type: none"> <li>• Post/ Upload/Create Content</li> <li>• Manage user permissions</li> <li>• Search Content</li> </ul>	<b>Media Sharing</b> <ul style="list-style-type: none"> <li>• Upload media</li> <li>• Share/Moderate media</li> </ul>	<b>Forums</b> <ul style="list-style-type: none"> <li>• Forums based on discussion topics</li> </ul>
	<b>Instant Messengers</b> <ul style="list-style-type: none"> <li>• Chats and mails</li> </ul>	

Broadly this whitepaper provides a ready reference architecture for the organizations in laying out and realizing the social media strategy. The paper provides guidelines for organizations in devising a social media strategy considering various factors.



Once the social media strategy is designed, the paper provides a reference framework of components (including user and business components) to realize the social media strategy.

## How social media can

### transform the business and user experience

Social media is transforming the way business works and end user experience at the same time.

### Change in user experience

Following are instances/usage scenarios of social media touch-points:

- **Collaboration :** Users can collaborate through online communities for sharing information, actively participating in online activities.
- **Knowledge sharing and learning :** Use social media information sharing platform for knowledge management.
- **Review/rating :** Provide review and rating for the products and content
- **Shared participation :** Share the media including movies, photos, shared gaming, news etc.
- **Contribution to the collective pool of knowledge**
- **Collective decision making in online polls and surveys and product evaluation**

## Business benefits

Benefits can leverage social media platforms for gaining useful customer insights and for identifying emerging trends:

- **Integrated collaborated platform :** Organizations can provide an integrated platform for its internal and external users to share the knowledge, talk about its products, get technical support etc.
- **Brand and sentiment analysis :** Organizations can listen to the users in social platform to understand the positive or negative sentiment about the company brand, products etc.
- **Provide intuitive customer experience** by personalizing and aggregating the topics of interest from social media platforms.
- **Effective customer relationship management** by actively engaging users and involving them in collective decision activities
- **Analyze trends and emerging patterns** in social interactions to understand the success of recent launches, hidden demand patterns and future directions.
- **Use social media marketing** to promote new products and services

Let's elaborate this concept of an online e-commerce site as compared to a social-enabled site to get the deeper understanding of harnessing a social media platform

Here is the comparison of a normal online e-commerce site as compared to a social media enabled site:

Business Goal	Normal Online e-Commerce	Social Enable e-commerce
Marketing	<ul style="list-style-type: none"> <li>• Pay and market the site by placing ads, carrying out campaigns, search engine ads etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Leverage more effective social-media marketing with minimal cost</li> <li>• Harness word-of-mouth marketing that includes custom blogs, communities, review, and ratings</li> <li>• Provide rating widgets to facilitate user rating and ranking</li> <li>• Leverage user's review comments</li> <li>• Create and encourage customer online communities, blogs, and wikis</li> <li>• Leverage social media based viral marketing techniques</li> </ul>
Cross-sell and Up-sell	<ul style="list-style-type: none"> <li>• Provide custom bundles or packages</li> <li>• May not be effective and accurate</li> </ul>	<ul style="list-style-type: none"> <li>• Use the customer's action to suggest more effective bundles</li> <li>• Leverage user's recommendation/rating for showcasing the product</li> </ul>
Expand the reach of customers and markets	<ul style="list-style-type: none"> <li>• Launch geo-specific/language specific sites</li> </ul>	<ul style="list-style-type: none"> <li>• Create the page in popular social media platforms to reach the existing community</li> </ul>
Provide holistic information and serve as one-stop-shop for customers	<ul style="list-style-type: none"> <li>• Custom build all required functionalities</li> </ul>	<ul style="list-style-type: none"> <li>• Provide the mashup by aggregating the feeds and services from existing social media platforms</li> </ul>
Get customer insights	<ul style="list-style-type: none"> <li>• Conduct paid market survey to understand how the product is performing</li> </ul>	<ul style="list-style-type: none"> <li>• Get more instant and accurate feedback by providing review and rating functionalities</li> </ul>

Table 1 : Online vs social enable online comparison

## Devising social media strategy: social enable the business

We will discuss the foundation steps for Social Media Realization Framework (SMRF) in this section laying out the initial steps before using the SMRF. Following are the crucial steps in an organization's social media strategy



Figure 1 : High level steps in social media strategy

- **Trend and Industry analysis :** Firstly assess the general trends in the industry domain about the social media opportunities. For instance industries like e-commerce and retail have more opportunities to leverage the social media, than industries like manufacturing<sup>[1]</sup>.

This would be the crucial step in deciding the social media strategy including the road map, resource allocation etc. The industries with low social media adoption can also take the opportunity to experiment with social media introduction after critically analyzing the areas where social media really works.

- **Engagement strategy and audience analysis :** This involves identifying the key target audience and choosing the appropriate social media platform applicable for them. A sample audience-social media platform is given below :

Target Audience	Most effective social media platform	Most effective medium
Young Audience /Teenagers	<ul style="list-style-type: none"> <li>• General purpose Social media platforms like Facebook, twitter</li> <li>• Social gaming channels</li> </ul>	<ul style="list-style-type: none"> <li>• Mobile</li> <li>• Web</li> </ul>
Business executives	<ul style="list-style-type: none"> <li>• Business networking sites like LinkedIn</li> </ul>	<ul style="list-style-type: none"> <li>• Smart Phone</li> <li>• Web</li> </ul>
Technologists	<ul style="list-style-type: none"> <li>• Existing technical communities, forums eg. Oracle Technet IBM forums</li> <li>• Develop custom communities in existing site</li> </ul>	<ul style="list-style-type: none"> <li>• Web</li> <li>• Smart phone</li> </ul>
General purpose buyers	<ul style="list-style-type: none"> <li>• Cross-channel integration</li> <li>• Product support communities</li> <li>• Product review/rating features</li> <li>• Social media marketing</li> </ul>	<ul style="list-style-type: none"> <li>• Mobile</li> <li>• web</li> </ul>

Table 2 : Effective social media platform based on audience<sup>[3][4][5]</sup>

- **Choosing effective channel** : As the next step, the business needs to understand the most efficient channels to enable social media. As the mobile devices are gaining larger significance, social media enablement should be done for both web as well as mobile interfaces. I have given a sample medium in table II.
- **Inform-Engage-Analyze** : This is the key step in the social media strategy wherein the business needs to identify all opportunities to keep its user informed about their products and services., Engage them by effectively leveraging social media platforms and analyze the impact to fine tune the engagement model. This involves identifying all the critical business functions where end-users can be more effectively engaged and which can have social media touch points. Functionalities like production information page, managing group of users, aggregated information display etc. are good opportunities for enabling social media. Following table provides a sample functionalities which can have social media touch points :

Business Functionality	Potential Social media enablement
Product/Service Sell	<ul style="list-style-type: none"> <li>• Market the product in popular social media platforms</li> <li>• Create user communities to share their product experiences</li> <li>• Create support community to get timely support</li> <li>• Provide rating and review functionalities</li> </ul>
Understand brand and product	<ul style="list-style-type: none"> <li>• Perform brand and sentiment analysis from social media platforms</li> </ul>
Analyze the effectiveness of intended strategy	<ul style="list-style-type: none"> <li>• Use social analytics to understand how the social media strategy is working</li> <li>• Analyze the ratings and reviews using text analytics to understand the customer sentiment</li> </ul>
Understand emerging strategies/patterns and gain customer insights	<ul style="list-style-type: none"> <li>• Actively look for patterns by watching trends in social media platforms</li> </ul>

Table 3 : Sample business Functionalities with social media touch points

- Adopt the **Social Media Realization Framework** (SMRF) discussed in the next section once we identify the right social media integrations, right channel and right set of functionalities
- **Monitor and measure** the effectiveness of the social media strategy and fine tune the SMRF for maximum impact. Social analytics and text analytics tools can be used for measuring the effectiveness that includes data mining, topic identification etc.

## Social Media Realization Framework

An indicative framework for implementing the social media strategy is given in figure 2. The framework provides components and services that an organization can use to implement their social media strategy as discussed in the previous sections. If many of the components and services are pre-built, organizations can realize benefits in reduced time-to-market and reduced effort, risk and costs.

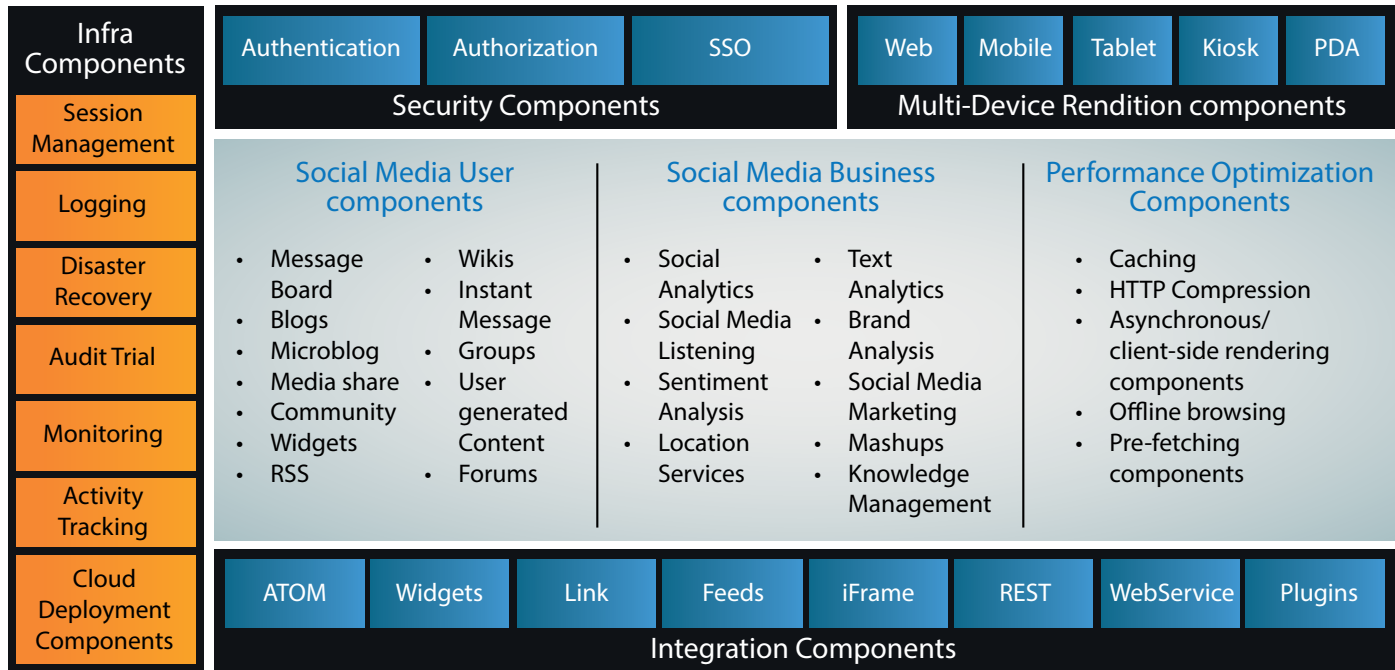


Figure 1 : Social Media Realization Framework (SMRF)

### A. Social Media User components

This is one of the key set of components of the SMRF which contains the collaboration components that will be pre-dominantly used by the end user:

- Message board wherein end-users can post and respond to messages.
- Really Simple Syndication (RSS) component which and integrate with any RSS source and display the feed in a formatted fashion.
- Blog component which allow the users to write, maintain and manage their blogs
- Wiki component which can be used to share and collaborate information.
- Microblog component which interfaces with popular micro-blogging sites like twitter
- Instant message component which user can use to connect and communicate with online community members

- Media share components which provide interface to share the media (pictures, video, audio, document) with popular media sharing sites.
- Groups allow the users to create public and private groups based on interest.
- Community which help the users and organizations to create and manage communities.
- User generated content component which manages all the content generated by users including blog posts, review comments etc.
- Widgets which allow plugging-in any third-party social media widget.
- Mashup component to aggregate the social media information from variety of data sources to provide an aggregated view for the customer
- Forums can be used by users and organizations to create forums related to technical support, product support etc.

### B. Social Media Business components

The components provides in this category is pre-dominantly used by business to realize their social media strategy:

- Social analytics to gain customer insights into their social activities
- Text analytics to analyze huge amount of social content to understand the social trends, emerging patterns, topic/data mining etc.
- Social media listening which involves listening to their customers to understand the effectiveness of campaigns.
- Brand analysis helps in understand the brand affinity/loyalty among customers.
- Sentiment analysis component to understand the positive or negative sentiment among its customers about the business/brand etc.



- Social media marketing components involve leveraging popular social media platforms to perform cost-effective marketing
- Location services which is the picking trend. This provides the user with location specific offers/discounts etc. on various devices. More on this in next section

### C. Knowledge management component

to help the organizations build a social-based knowledge base which encourages and promotes users to share, collaborate and learn from collective knowledge.

### D. Infrastructure components

Infra components mainly contain components to provide infrastructure services to the framework including:

- Manage the session of logged-in user using session management components. This includes components like authentication providers, authorization providers and Single-sign-on components. In order to perform single-sign-on with various social media channels, components like Open ID can be leveraged. For the social sites which don't support open ID, API/services based authentication/session management can be used. For example facebook provides plugin APIs for custom interaction which can be used for this purpose.
- Loggers to provide application logging
- Cloud deployment components which enable the framework to be deployed on the cloud via SaaS model
- Disaster recovery components which enable the code replication across geographically distributed data centers
- Audit trail components to audit the sensitive user activities
- Real-time monitoring components to notify the site administrator during application/network outage.

- An optional activity tracking using web analytics to provide insights into user activity and behavior while using framework components.

### E. Security Components

These components help in implementing the security of the framework which includes:

- Authentication component which provides authentication service with the configured data source
- Authorization components which provide fine-grained security for allowing access to individual functionalities and components.
- Single-Sign-on (SSO) components which enable seamless single sign on with subscribed third party applications.

### F. Multi-device rendition components

As we know that one of the key aspects of social media strategy is "Run on any device run from anywhere" which is basically a multi-channel, multi-device strategy. To support this SMRF supports the rendition on multiple devices. Device specific rendering components are provided for variety of output devices including web, mobile devices, tablets, PDAs and Kiosks.

The main controller intercepts the request and identifies the user agent who has made the request. It then routes the request to the appropriate renderer which renders the information in most optimal way for the specific device.

### G. Performance Optimization components

These sets of components are mainly involved in optimizing the end page performance. This is especially relevant in emerging economies where the network bandwidth is constrained:

- Caching components provide various caching services including content caching, configuring and controlling web server/browser caching

- HTTP compression component can compress the HTTP data to reduce the bandwidth consumption
- Asynchronous components involve providing client-side widgets which perform partial page rendering
- Pre-fetching components can pre-fetch the frequently used content/pages

### H. Integration components

The integration components provide the technical aspects of integrating the SMRF with 3rd party services. This section provides methods and means to both expose the SMRF components to outside world and also to consume the services/content from outside world within the framework.

The integration components provide the interface of the SMRF components to the outside world and also the SMRF internally uses these integration components to retrieve content from outside world:

- ATOM component helps in exposing and consuming the feed in ATOM format.
- Widgets are pluggable components which expose the framework's functionality to the outside world.
- The framework components can also be integrated through simple link and iframe based integration
- The framework's services can also be exposed as feeds in RSS format.
- The webservice integration component both exposes and consumes webservices
- SMRF would also consume the feeds and other external content using REST based services.
- There are various plugins available for connecting to social media sites. The plugins are usually implemented through custom APIs/SPIs.

## Social Local Mobile (solomo)

The convergence of social media with location sensitive services, delivered via mobile is promising to be one of the greatest utilities of social media.

SMRF provides location services delivered on multi-device platform which can be used by organizations to pro-actively reach out to their potential customers<sup>[6][7]</sup>.

Let's extend our understanding of social media enablement discussed in table III in the context of SoLoMo:

Business Functionality	Potential Social media enablement	SOLOMO enablement
Product/Service Sell	<ul style="list-style-type: none"> <li>• Market the product in popular social media platforms</li> <li>• Create user communities to share their product experiences</li> <li>• Create support community to get timely support</li> <li>• Provide rating and review functionalities</li> </ul>	<ul style="list-style-type: none"> <li>• Provide the e-coupon as soon as the potential customer comes in proximity of physical store</li> <li>• Send the sales offers to all devices in the given radius of store based on its geo-location</li> </ul>
Understand brand and product	<ul style="list-style-type: none"> <li>• Perform brand and sentiment analysis from social media platforms</li> </ul>	<ul style="list-style-type: none"> <li>• Provide a promotion offer for the feedback when user accepts a SOLOMO service</li> </ul>

Table 4 : Sample business Functionalities with social media touch points

Small businesses can use the SoLoMo services to market their services/products and target the customers within the vicinity of their service area. SoLoMo offerings also involve location based search and other proximity based mobile applications.

The steps in devising the generic social media strategy very well apply even for devising the SoLoMo strategy. So the very step here is to understand the industry and business trends and see if SoLoMo really adds value to the business and to the consumers.





## A. Cloud model (SaaS model)

An important aspect of any platform or framework is its deployment model. In this regard cloud based deployment is strategically positioned to handle massive data required by social platforms and abstract the hosting complexity from the organizations. Major analyst's surveys indicate that cloud adoption is going to increase dramatically in the near future <sup>[8][9]</sup>. Most organizations are planning to move to cloud based deployment to

- Reduce their IT operations' cost
- Improve scalability
- Improve responsiveness
- Reduce time-to-market.

As cloud is assuming the role of key driver of delivery of huge data, SMRF supports the cloud deployment model. All the major components have services' interface which can be deployed as "Software as service" (SaaS) model on cloud platform. Individual organizations have the flexibility to choose and pay only for the required services.

## B. Emerging Economy Scenario

Emerging economies face challenges mainly in infrastructure. Following are some of the issues which are visible mainly in emerging economies:

- Poor infrastructure including low bandwidth and intermittent network outages.

- Popularity of social media especially for e-commerce is limited to mainly urban geographies.
- Due to lack of supporting ecosystem, not all aspects of social dimensions can be fully utilized. This includes map services, geo-location based services etc.

SMRF offers solutions to some of the challenges mentioned above. The framework has performance optimization components which would be more relevant in emerging economies for delivery in poor infrastructure:

- SMRF provides array of caching components to provide the cached data at various levels. This includes cache controls for browser caching headers, web server caching controls, cache at individual component level etc. Cache components are designed to auto-detect the network bandwidth and automatically adjust its "update frequency". For instance a feed aggregator component would normally refresh every second in good bandwidth regions; whereas in the areas which have low bandwidth this component would refresh once in an hour or couple of hours to sacrifice "freshness" for performance.
- Out-of-box compressors will minimize the overall packet size transferred over the wire which would be handy in low bandwidth regions.

- Client-side-aggregation plays a crucial role in performance optimization. Almost all the components or widgets of SMRF are AJAX based to perform partial page rendering which would avoid costly full page refresh.
- A new concept of offline browsing which leverages HTML 5 feature to provide downloading the web contents locally to enable offline browsing feature.
- Pre-fetching components also pre-fetch some of the required data for efficient rendering.

In addition to these components an effective online strategy in emerging economies should also look at other performance optimization best practices including but not limited to:

- Keeping the page (especially landing pages) light and simple
- Adopt performance best practices including usage of CSS sprites, merging and minification of assets, minimizing HTTP calls

## Summary

In this paper we started the discussion with a brief introduction of social media platform with various utilities and examples. Then we analyzed how the social media can reinvent the experience for both an end user and for the business and how it is proving out to be a game changer in the overall experience management.

We then analyzed the key steps in devising a social media strategy with social media touch points for sample business functionalities. We discussed a sample social media realization framework (SMRF) with the explanation of all components and how those components address the required functionalities required for implementing social media strategy. We then briefly touch based the SoLoMo which is an emerging trend in social media space. We also saw how the SMRF supports SaaS deployment model in cloud. We then look the SMRF through the prism of emerging economies and how the performance optimization components of SMRF can be leveraged to address some of the challenges in emerging economies.



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