



Providing Focus via a Social Media Exploitation Strategy

Bruce Forrester, PhD

19th ICCRTS
June 2014

Canada 

DRDC | RDDC



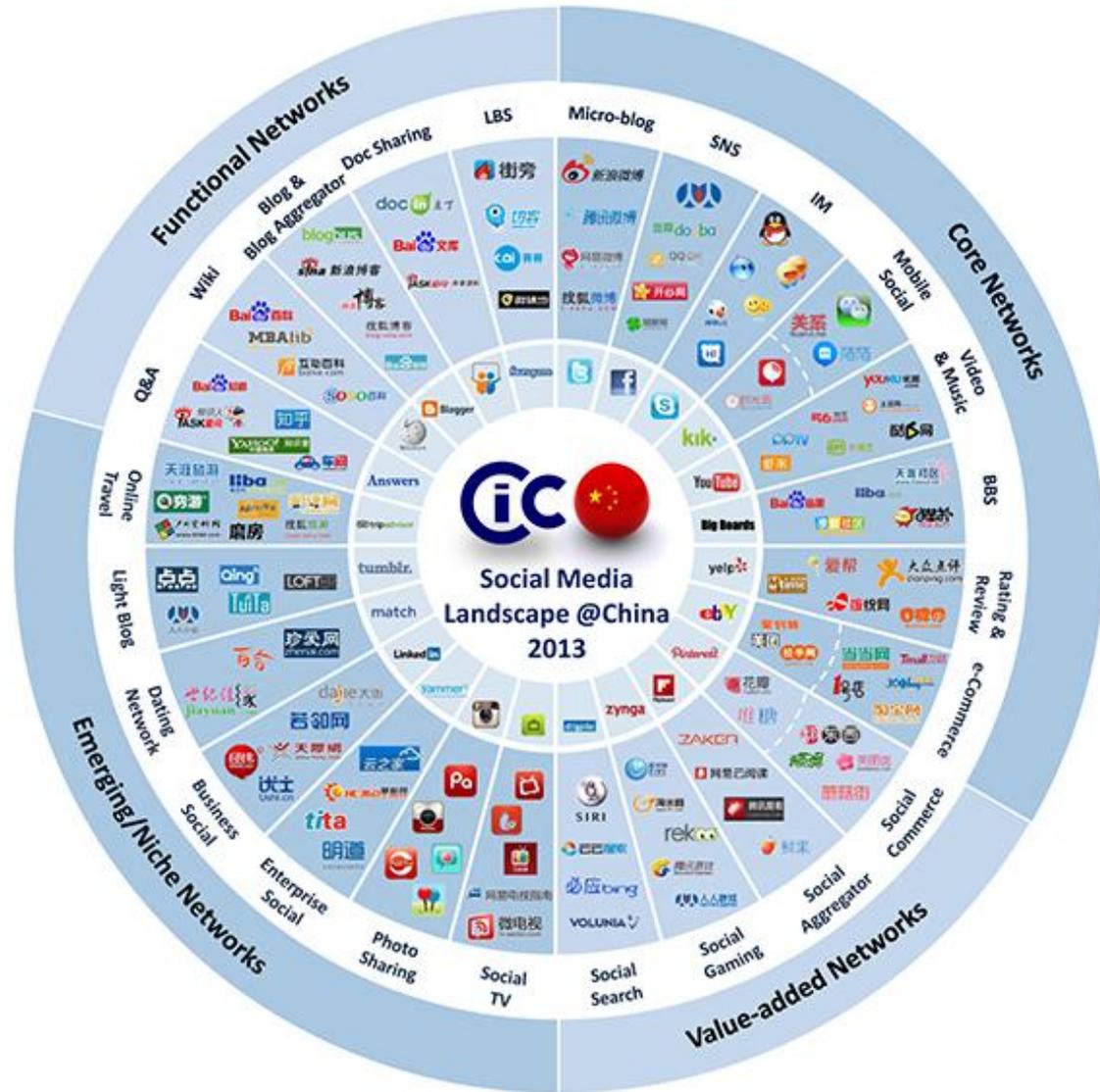


“Huh. So Iran just friended us on Facebook ... Like, do I accept?”

What to monitor?



China's SM sites



- Unique platforms
- Many COTS tools and companies
- Lack of understanding
- Little training
- Few resources



Feeling Overwhelmed

Significant challenges (based on analyst interviews)

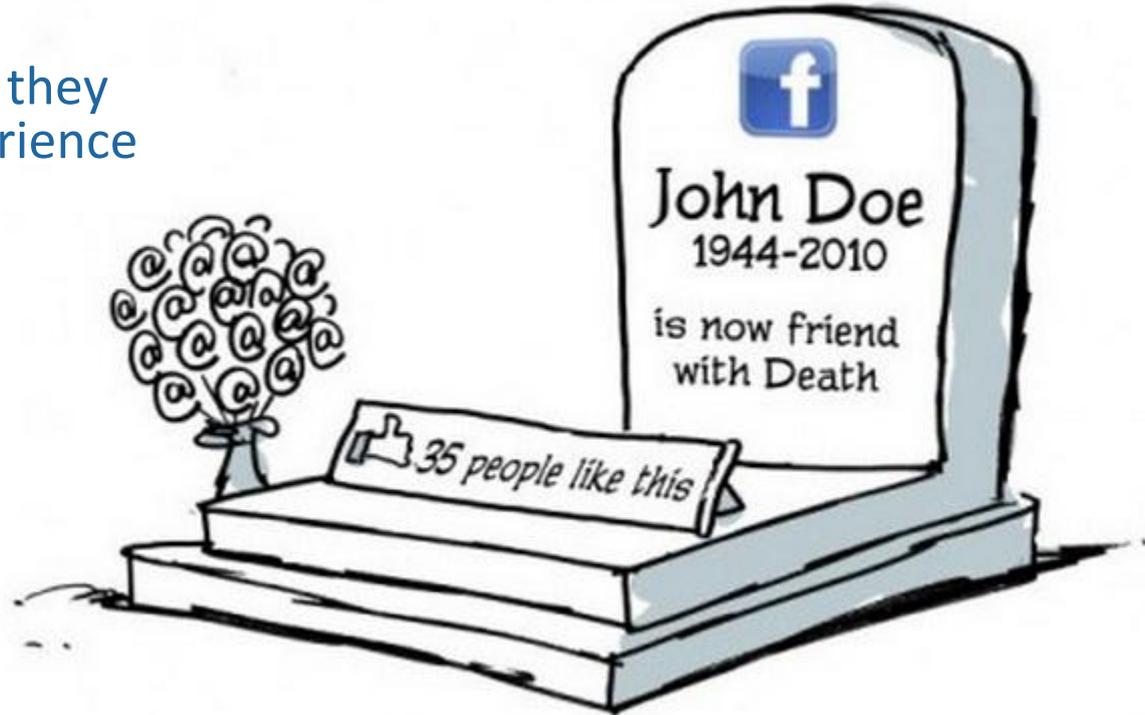
- IM & IT policy, & security issues
- Anonymous access close to their workspaces
- IC attitudes
- Tools, methodologies, and training



Sorry, but it's gotta go. Management says it could be used to access Facebook.

Early 2014 – A brief moment of clarity

- Everyone wanted to get something started but not sure how to proceed
- Analysts “kind of knew what they wanted” but have little experience
- Knew we could not do it all!
- So we had to jump in
- Feel better through action



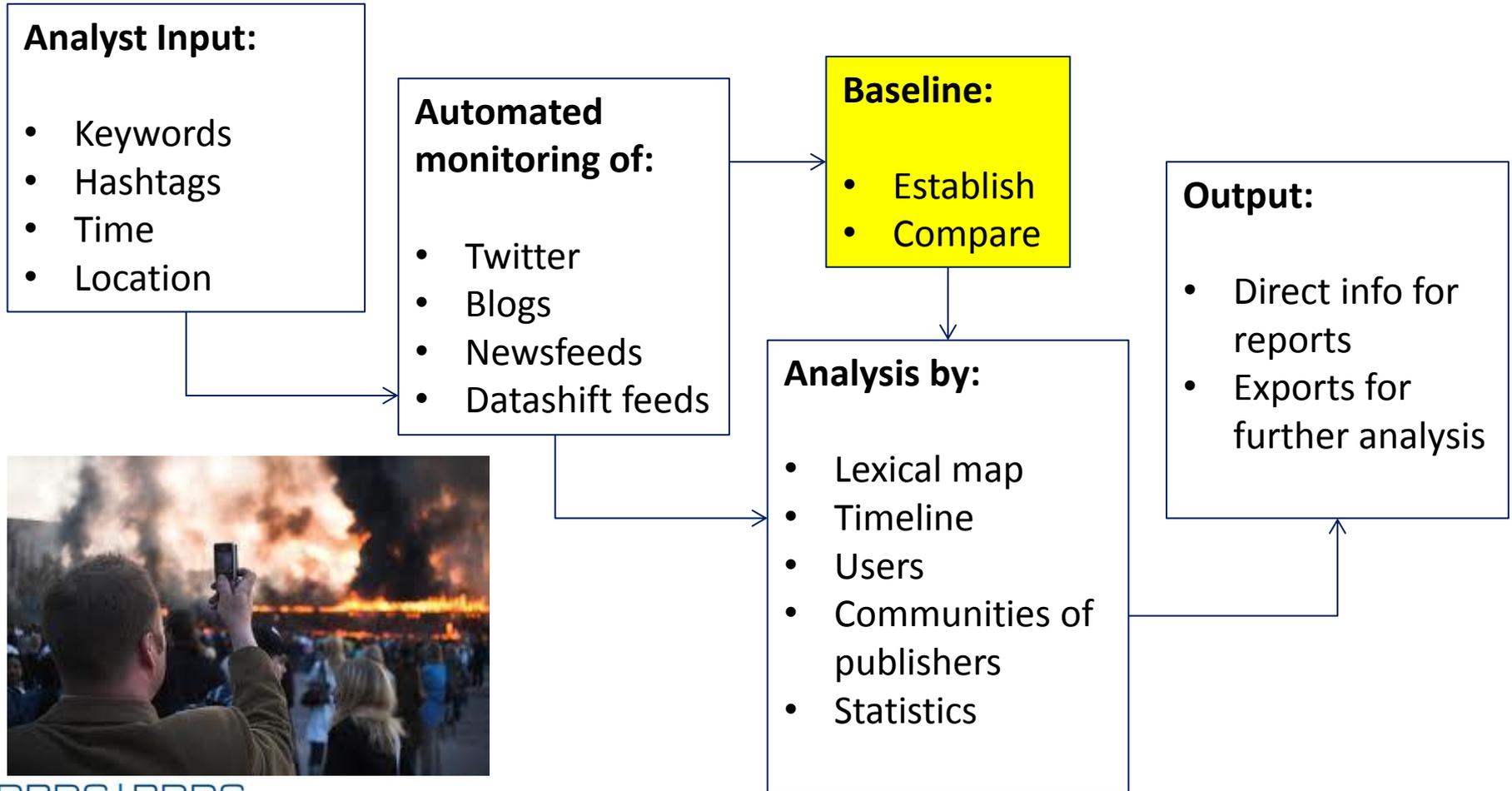
Three-Pronged Approach to SM Exploitation

- i. Day to day monitoring
 - Automated as much as possible
 - Good ability to filter – get to the data that matter
 - Ability to export data

- ii. Country SM Profiles
 - Ability to quickly decide relevance of SM
 - Keeps track of important by more stable indicators

- iii. Deep dive analysis capability
 - Toolbox of important analysis types

I. Monitoring for Situational Awareness



Media richness vs Self-disclosure of select social media

	Media richness		
Self-disclosure	Low	Moderate	High
Low	Forums, Wikis	Video and image sharing communities	Virtual games
High	Blogs, Microblogs	Social Networks	Virtual worlds

Intelligence usage	Social media source
<ul style="list-style-type: none"> • Near-Real time Situational Awareness • Trend watch • Early warning and indicators • Alerting service • Threat assessment 	<p>Micro-blog (e.g. Twitter)</p> <p>News feeds</p>
<ul style="list-style-type: none"> • Targeting (non-kinetic) (i.e. profiling); identifying and getting information about particular person of interest, groups, organizations. • Social Network Analysis 	<p>Social networks</p> <p>Genealogy</p> <p>Location</p> <p>Event posting</p>
<ul style="list-style-type: none"> • In-depth content about a subject or content Profile • Structure of orgs • Understanding the ideology 	<p>Blogs</p> <p>Collaborative projects (e.g. Wikipedia)</p> <p>Forums</p> <p>Content communities (e.g. comments on YouTube)</p> <p>Document and Presentation sharing sites</p>
<ul style="list-style-type: none"> • Collateral damage assessment • Targeting • Standing products • Basic intelligence (baseline) • Country reports 	<p>Images (e.g. Instagram, Militaryphotos.net)</p> <p>Video (e.g. YouTube)</p>
<ul style="list-style-type: none"> • Social Network Analysis • Structure of orgs • Understanding the ideology 	<p>Virtual game-worlds (e.g. World of Warcraft)</p> <p>Virtual social worlds (e.g. Second Life)</p>

What still needs to be added to monitoring?



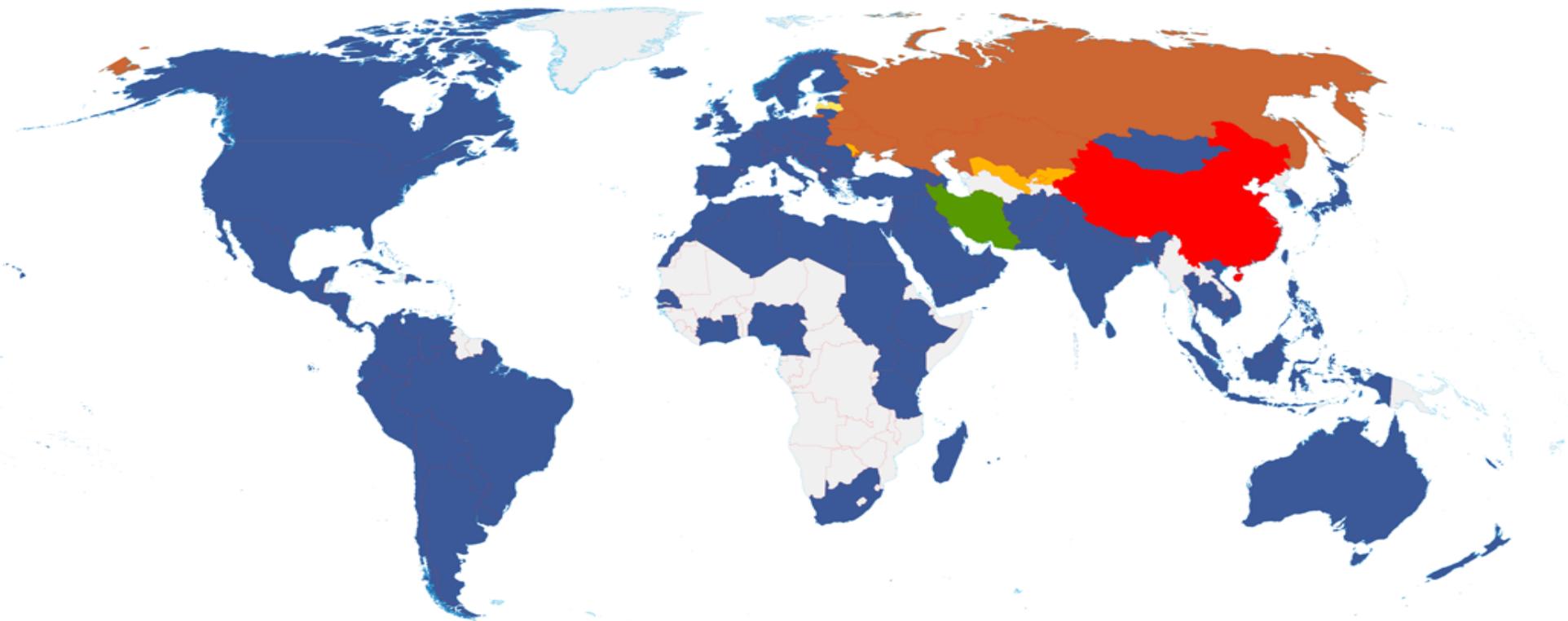
- Auto-alerting
- Automated baseline and trend analysis leading to an alert
- Language capability
- Deep-dive analysis follow-on

II. Social Media Country Profiles

- Metadata about social media usage is likely to change at a much slower rate than the actual content produced on the platforms
- Maintain profile for a country of interest that allow for fast ramp up
- Gives ability to determine if SM will be a viable source (right population, right focus for INT collection)
- Also provides focus for platform research and training needs

WORLD MAP OF SOCIAL NETWORKS

December 2013



Facebook QZone V Kontakte Odnoklassniki Cloob Draugiem

FEB
2014

GLOBAL DATA SNAPSHOT

FEB 2014 UPDATE

7,095,476,818

TOTAL POPULATION



52%

URBAN

48%

RURAL

2,640,432,161

INTERNET USERS



37%

INTERNET PENETRATION

1,858,450,660

ACTIVE SOCIAL NETWORK USERS



26%

SOCIAL NETWORKING PENETRATION

3,424,960,000

ACTIVE MOBILE USERS



48%

MOBILE USAGE PENETRATION

6,966,523,000

ACTIVE MOBILE SUBSCRIPTIONS



98%

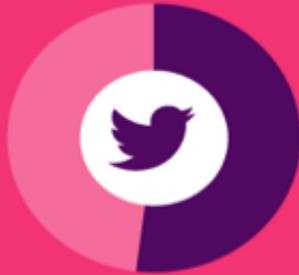
MOBILE SUBSCRIPTION PENETRATION

Social Networking in the Arab World

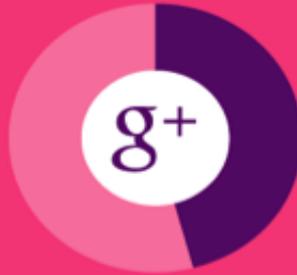
Results based on responses from social network users



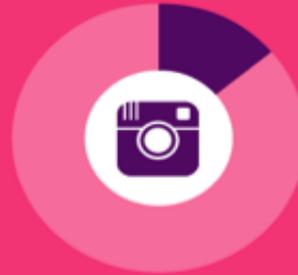
FACEBOOK
94%



TWITTER
52%



GOOGLE+
46%



INSTAGRAM
14%



LINKEDIN
6%

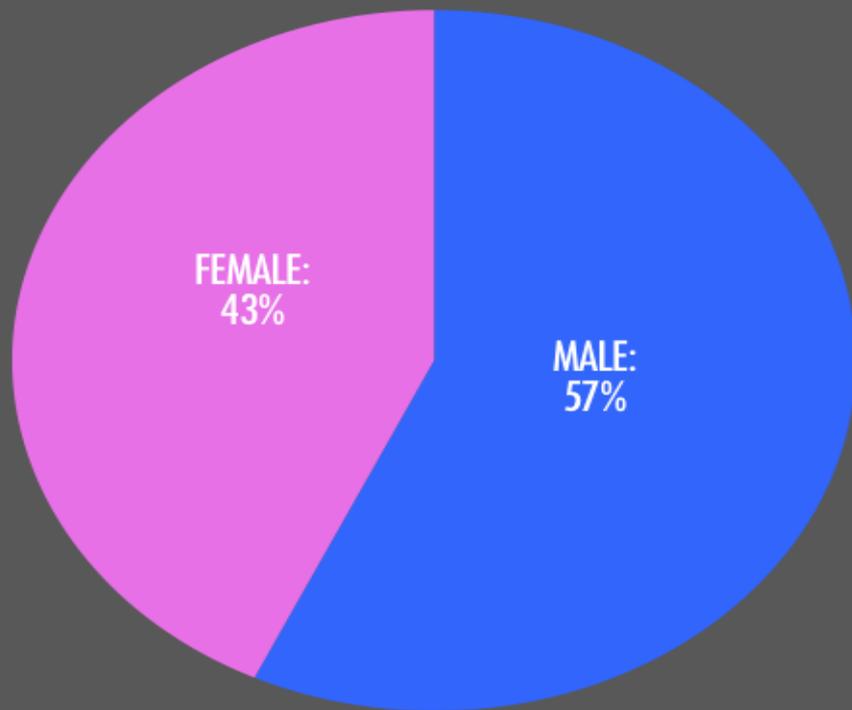
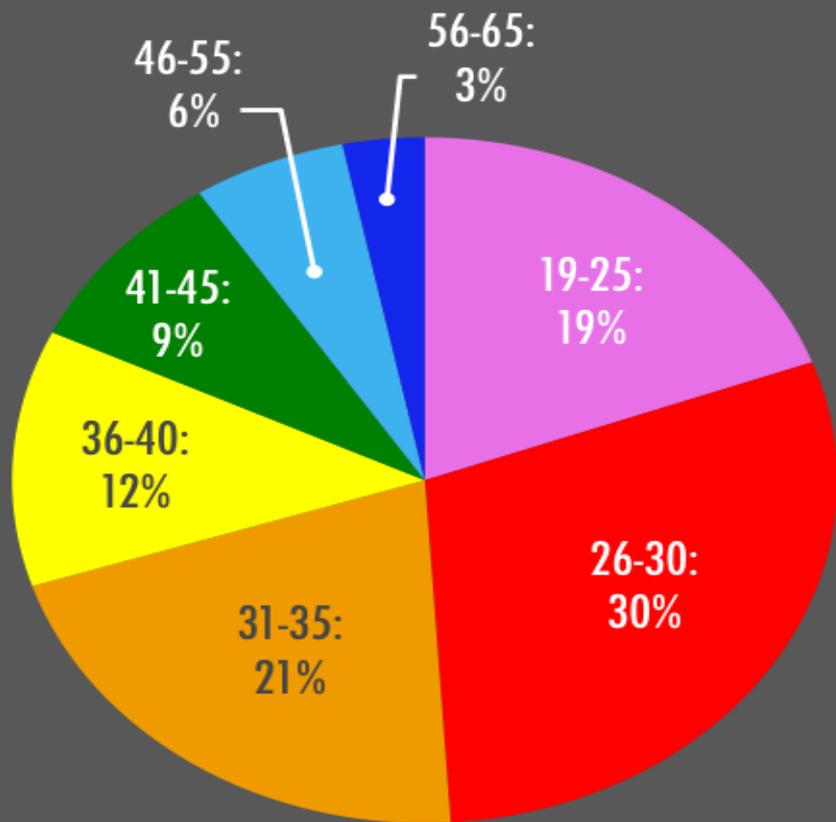
COUNTRIES SURVEYED: QATAR, LEBANON, EGYPT, JORDAN, TUNISIA, KSA, UAE, BAHRAIN

NORTHWESTERN UNIVERSITY IN QATAR, 2013

To explore the findings in detail go to <http://menamediasurvey.northwestern.edu>

OCT
2012

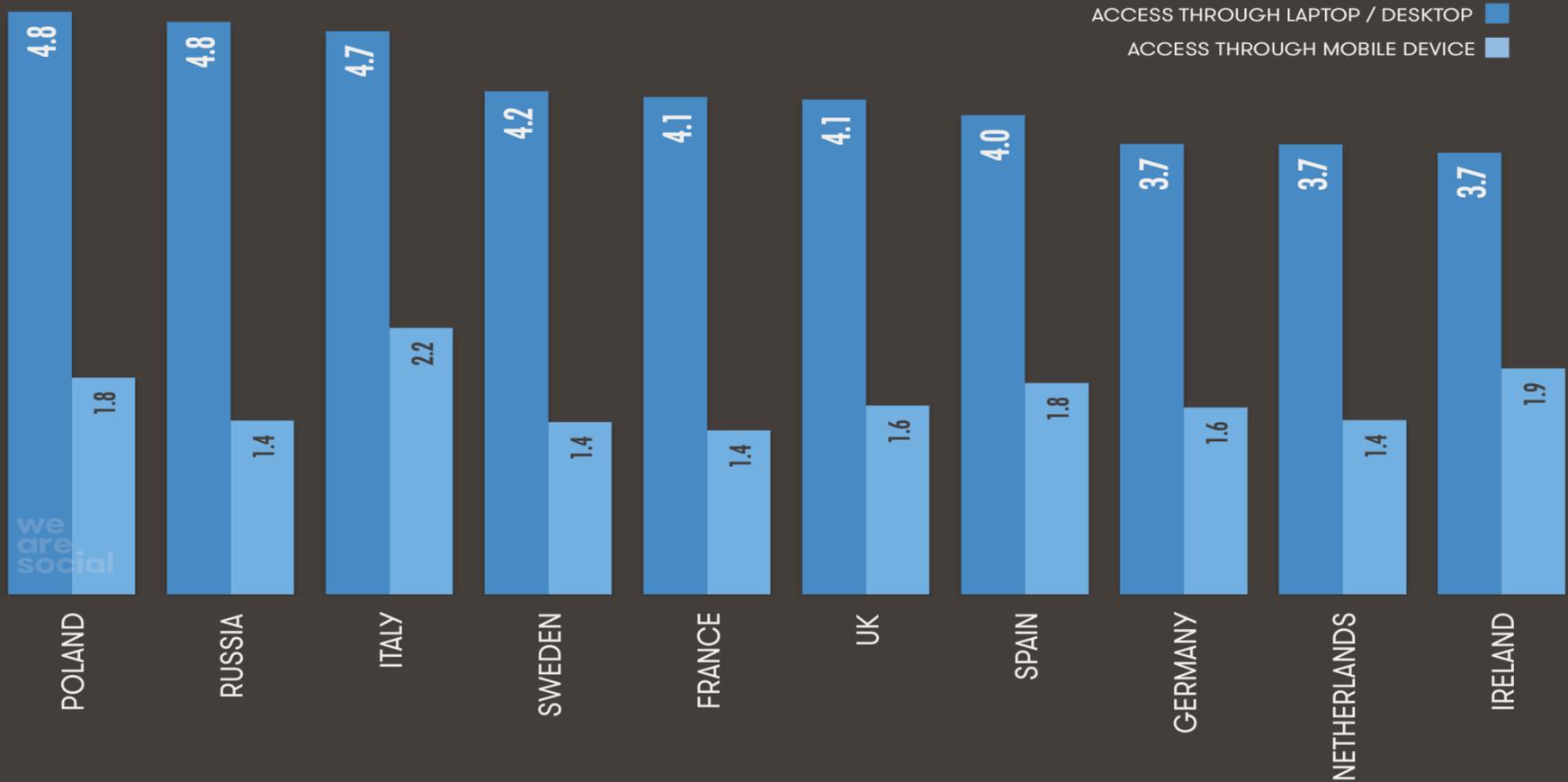
THE DEMOGRAPHICS OF WEIBO USERS



FEB
2014

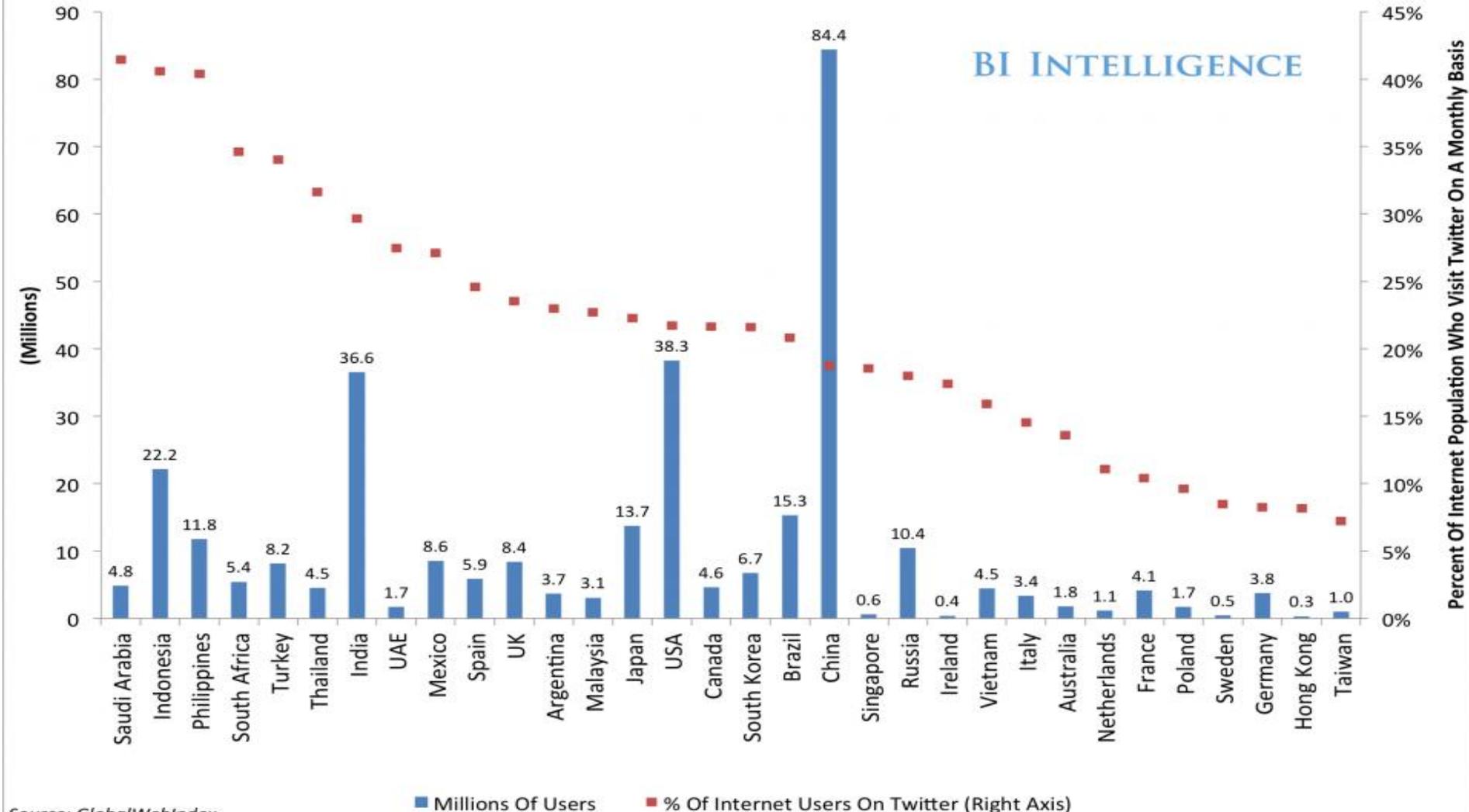
TIME SPENT ON THE INTERNET

AVERAGE NUMBER OF HOURS PER DAY SPENT BY INTERNET USERS ON THE INTERNET



Countries Ranked In Order Of The % Of Twitter Users In Their Internet Populations

BI INTELLIGENCE



Source: GlobalWebIndex

Country SM Profile - Template characteristics - 1

- What are the main social media platforms being used?
 - Types most frequently used (blogs, video, image etc.)
 - Who are using each?
 - Age
 - Sex
 - Religion
 - Method of access – PC, Mobile
- What are the main topics of interest discussed
 - Blogs
 - Mico-blogs
 - Videos



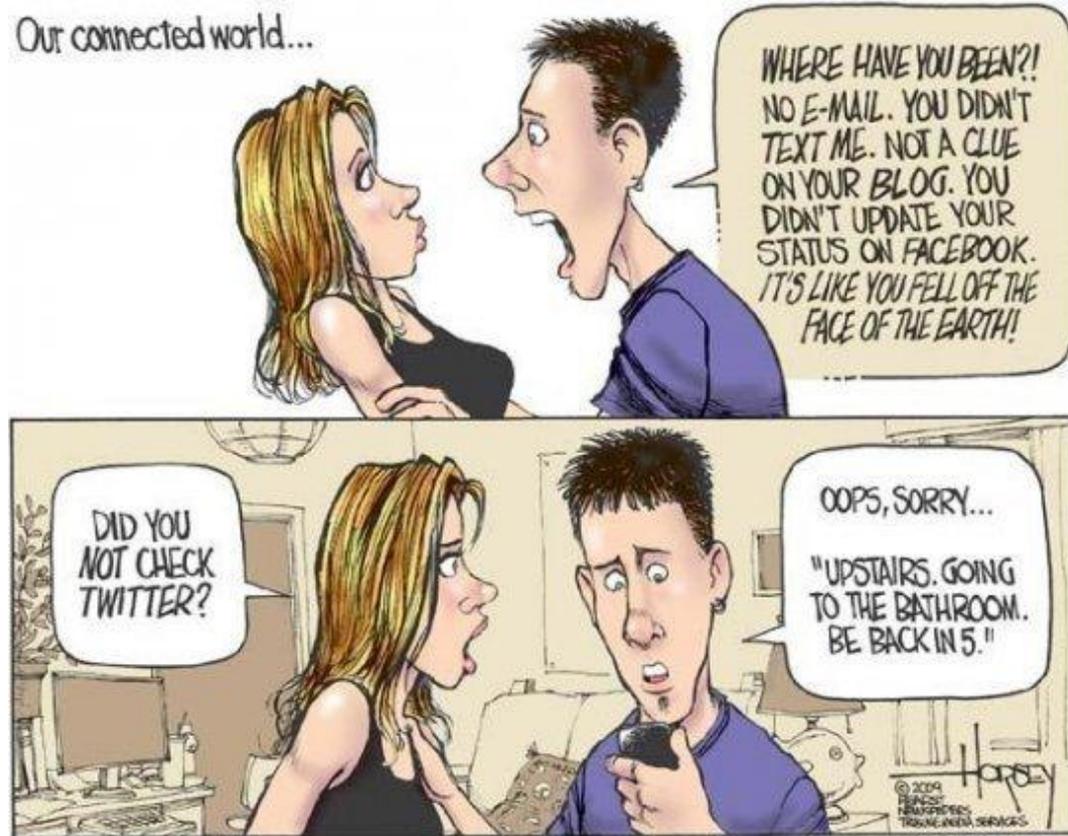
Country SM Profile - Template characteristics -2

- Cyber concerns
 - What types of deception originate from this country?
 - Use of bots
 - Criminal activities
- Who has control of these platforms?
 - What is the level of government monitoring of these platforms?
 - What types of actions are taken against SM users?
- Geolocation data
 - What other countries are sharing these platforms?
 - What are the main other countries that contribute for the popular discussion for the country of interest?



III. Deep Dive Analysis

- Constantly changing platforms and features
- Different platforms used around the world
- Hundreds of media formats
- Many COTS tools, methods and services
- High level of language and cultural understanding
- High level of trg. for analysts



Interview results sample – Analysts think that SM is good for:

- Monitoring of remote location events (for validation purposes) - YouTube has proven to be very useful and used to complete INT reports about damages and armaments used.
- Follow tweets from influencers.
- **Perceive sentiment about an evolving conflict situation (predict what's next)**
- **Perceive reaction and local population attitudes about some decisions on foreign policies.**
- Quickly analyse the effect of operations on local population (assess kinetic effect, measure success, understand social reaction to operation, define influence requirements).
- Corroborate quickly some information from other INTs (need many sources).
- **Identify the real intent of individuals and groups (identify contradictory discourses) - variations of intent.**
- **Identify patterns of life of individuals.**
- **Identify, understand, and monitor social networks.**
- **Dig information triggered by SIGINT activity.**
- **Perceive the extent of misinformation about a situation.**
- **Perceive the difference between what media is advertising and what people are thinking (on what side do they stand).**
- Stay up-to-date about how people exchange information.
- **Monitor influence - Identify both strong leaders and soft leaders in the SM world.**
- **Force protection (monitor exposure of critical military assets and operations to outside world).**
- **Rumor detection.**
- Monitoring “friendly” SM for Counter Intelligence, OPSEC and the adversary’s perception of us.

Types of Analysis

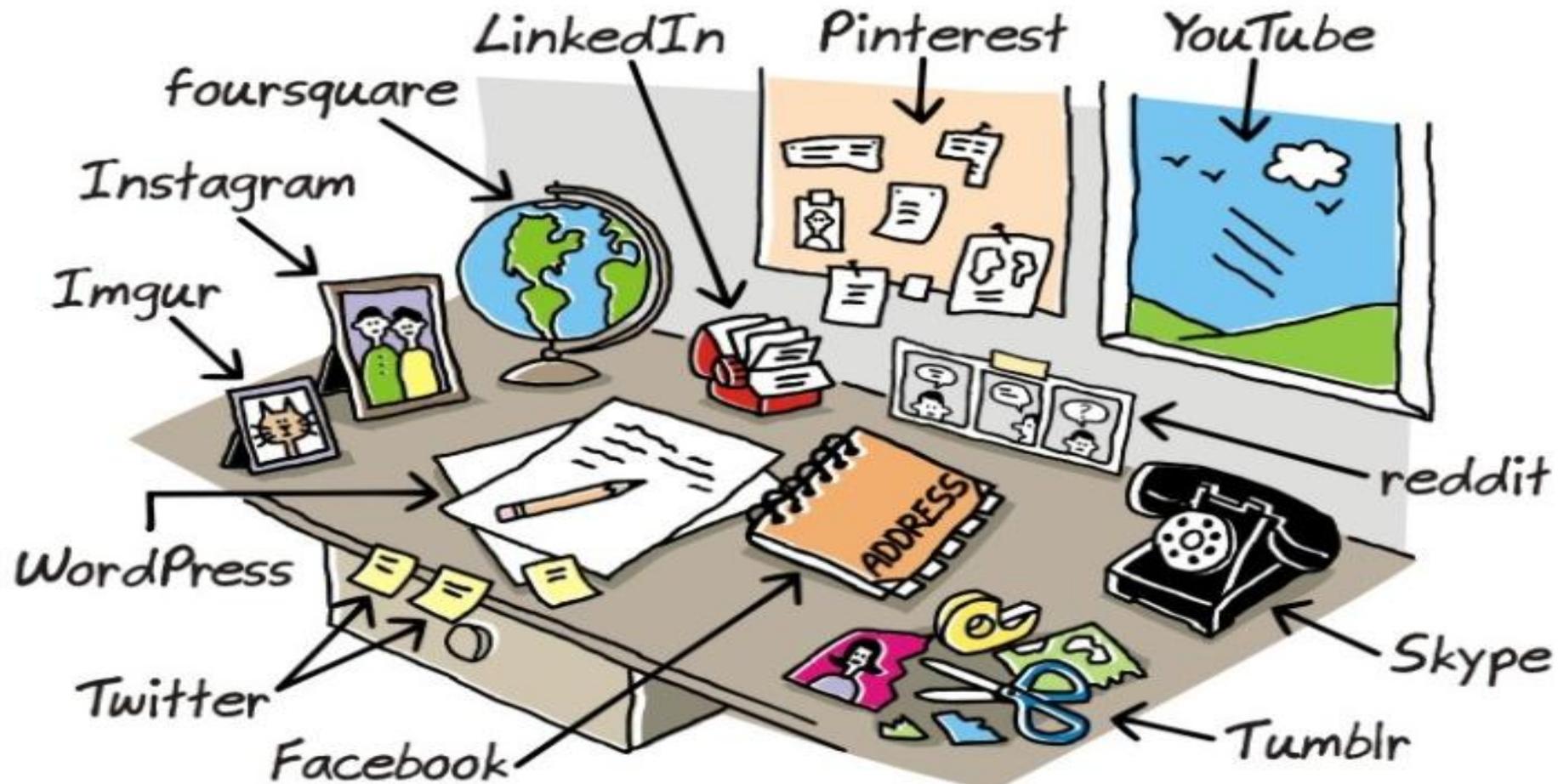
- **Trend analysis and Prediction**
- **Geo-location**
- **Opinion and Sentiment**
- **Social Network Analysis**
- **Temporal**
- **Finding influencers**
- **Patterns of life**
- **Semantic analysis**
- **Anomaly detection**

- Discovery
 - Visual analytics
 - Data mining
 - Network and link analytics
 - For example: Community detection, information flow
- Data reduction
 - Fusion
 - Filtering
- Relevance assessment
- Credibility and reliability assessment
- Classification and clustering
 - Cultural analysis
 - Theme detection
 - Rumour detection
 - Dialect detection
 - Pattern detection
- Statistical analysis
 - Techniques particular to large data collections
 - What stats are being produced?
- Narrative structure analysis
- Intent analysis

How we will Proceed:

- Let our analysts gain some experience with the SM data
- Conduct research into the likely deep-analytic types
- Look for COTS, or develop, deep dive analysis tools and techniques
- Prioritize based on countries of interest for SMCP and Platforms
- Incorporate different language capabilities
- Add cultural meaning analysis

vintage social networking



DRDC | RDDC

SCIENCE, TECHNOLOGY AND KNOWLEDGE
FOR CANADA'S DEFENCE AND SECURITY

SCIENCE, TECHNOLOGIE ET SAVOIR
POUR LA DÉFENSE ET LA SÉCURITÉ DU CANADA

