Unveiling Online Perception toward "1Malaysia" Over Time: A Social Impact Analysis

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Research Objectives

- To understand the impact of "1Malaysia" through an analysis of citizens' online perception toward the concept

- To develop a prototype that would provide an ontological representation of citizens' perception toward '1Malaysia'

Research Motivations

- Why is there the need to conduct social impact analysis?

  - It allows one to analyze, monitor, and manage the social consequences of policies, programs, and projects

  - It facilitates the assessment of whether a program meets its social objectives

  - The consequences of social impact analysis may be positive or negative, intended or unintended, direct or indirect, short-term or long term
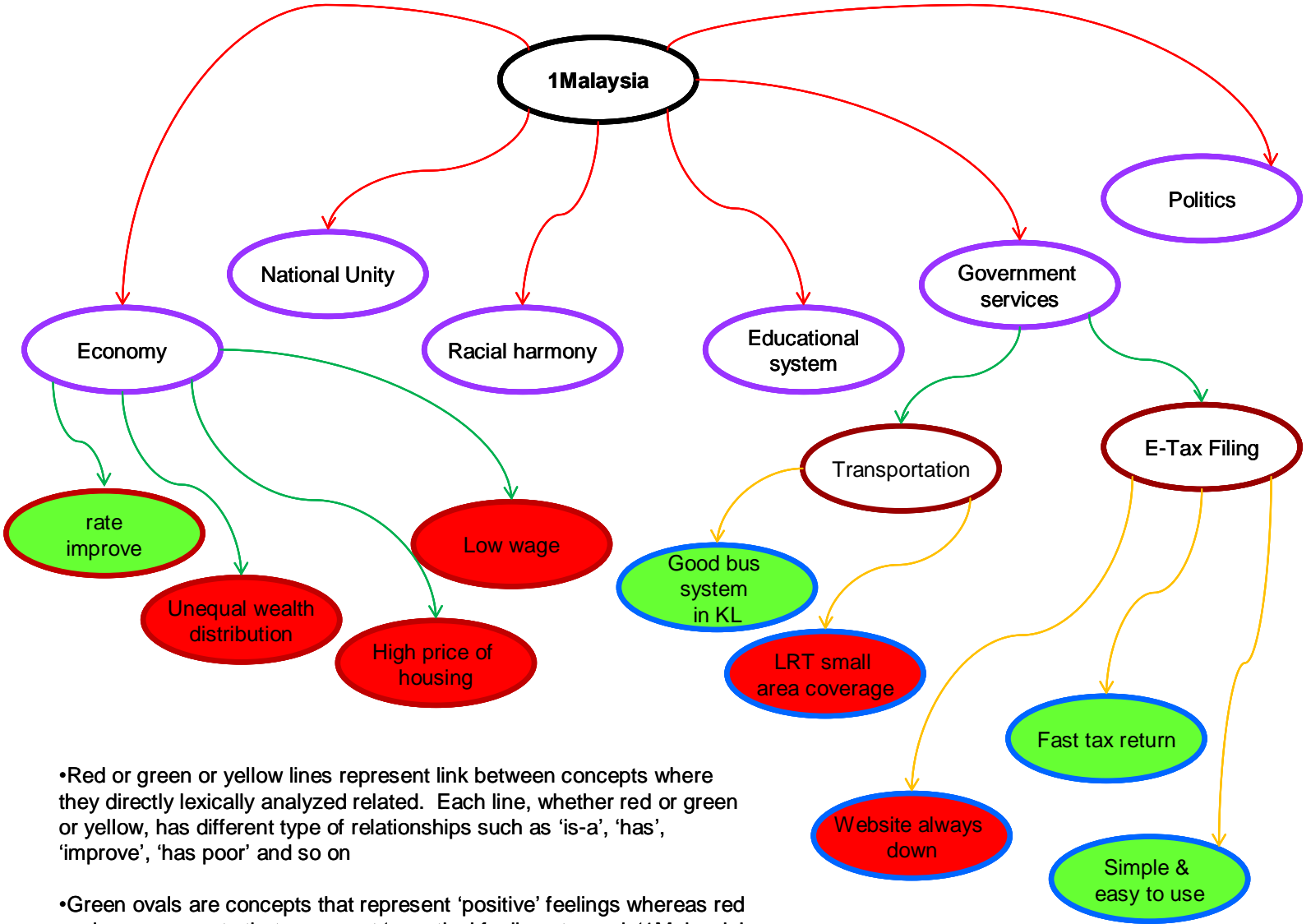
Research Motivations

- Why would one perform blog mining?

  - Humongous amount of data and information available on web blogs

  - Blogpulse.com identifies 170 million blogs, over 6 thousand new blogs being added in the last 24 hours (as of Sept 12, 2011)

  - It is valuable to have the ability to mine, understand, monitor, and manage the data and information

  - Precious source of intelligence and feedbacks

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Research Motivations

- Deficiencies with existing blog mining tools

  - Focus on high level analysis of a topic without narrowing down to factors that make up a topic
  - Conduct analysis based on frequency of keywords

- This project uses an ontological approach to understand a topic and its contents by constructing relationships among different key concepts within that particular topic

•Red or green or yellow lines represent link between concepts where they directly lexically analyzed related. Each line, whether red or green or yellow, has different type of relationships such as 'is-a', 'has', 'improve', 'has poor' and so on

•Green ovals are concepts that represent 'positive' feelings whereas red ovals are concepts that represent 'negative' feelings toward '1Malaysia'

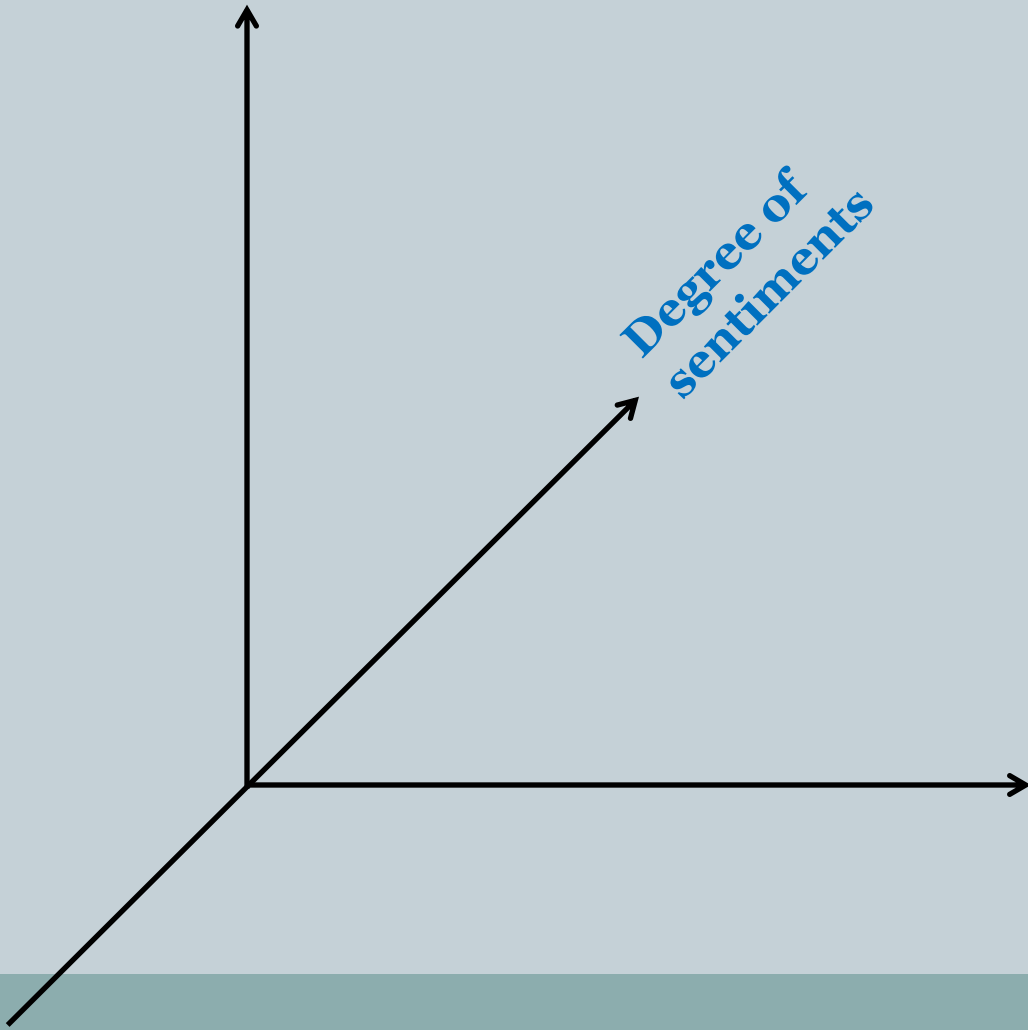# A Preliminary Framework of Social Impact Analysis
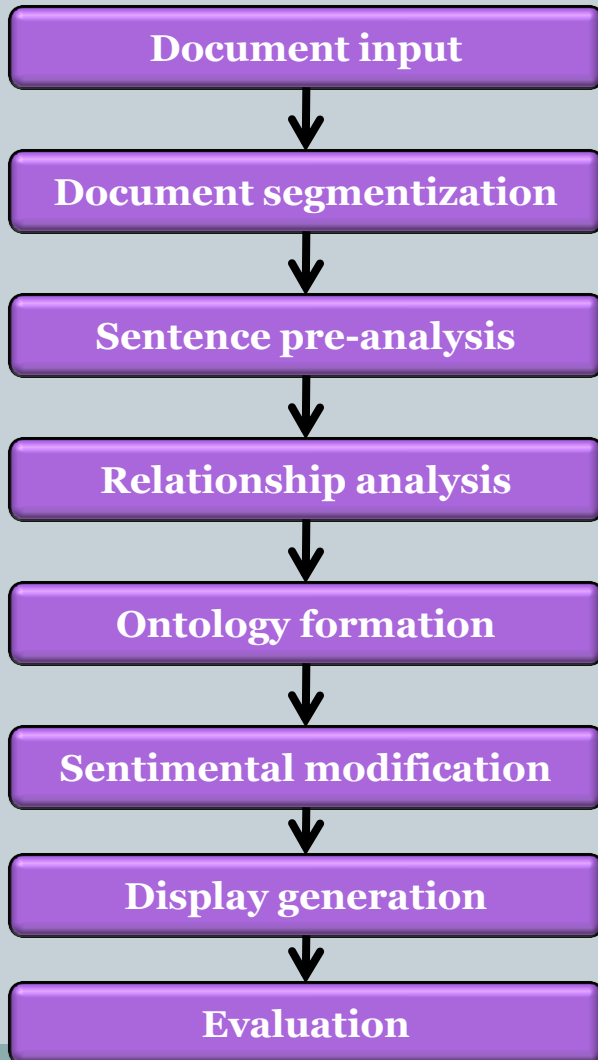

Level of impact

Degree of sentiments

Categories of factor

Alignment with initial objectives of 1Malaysia

Prototype Development Process

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┌─────────────────────────────┐
│      Document input         │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│   Document segmentization   │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│    Sentence pre-analysis    │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│    Relationship analysis    │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│     Ontology formation      │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│   Sentimental modification  │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│      Display generation     │
└─────────────────────────────┘
              │
              ▼
┌─────────────────────────────┐
│         Evaluation          │
└─────────────────────────────┘
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Prototype Development Progress

Preliminary Research	Complete
Background	Done
Statistical Ontological Techniques	Done
Linguistic Manipulation	Done
Ontological Ranking Methods	Done
Document Input	Pending
Web Crawler API linkup	Pending
HTML Processing & Cleaning	Pending
Document level linkage	Pending
Document Segmentization	Partial
Processing Unit Breakdown	Done
Timestamping units.	Pending Web Crawler
Tokenization	Done
Sentence Pre-analysis	Partial
Part-of-Speech Tagging	Done
Token Reduction	Pending
Weight Assignment	Partial(Scale is +1.0 to -1.0)
Relationship analysis	Complete
Construct Noun-phrase units	Done
Construct Verb-phrase units	Done
Assemble conjunction blocks	Done
Identify Relation patterns	Done
Construct Relations	Done
Perform conjunctions on relations	Done

Ontology Formation	Pending
Merge linkages	Partial
Migrate base weights	Pending, depending on Weight Assignment
Merge similar base token units	Pending, depending on Token Reduction
Merge similar relation patterns	Pending, depending on Token Reduction
Weight-by-Time subnet	Pending, Time-chunk & Token Reduction
Propagate Weights via network	Pending, depending on Weight Migration
Sentimental Modificaton	Pending
Assign Positive Sentiments	Pending Ontology Formation & Expert
Assign Negative Sentiments	Pending Ontology Formation & Expert
Propagate Sentiments via network	Pending Ontology Formation
Display Generation	Partial
Basic Display for debug purpose	Done
Restriction by timeline	Pending Ontology Formation
Generation by timeline	Pending Ontology Formation
Display of Weight by timeline	Pending time-chunk net
Display of sentiment spread	Pending sentiment net
Display of change over time	Pending time-chunk net
Display in detail	Pending detail availability.
Evaluation	Pending
Sentiment Accuracy	Pending Expert & Completion
Sentiment Propagation	Pending Expert & Completion
Sociological Significance	Pending Expert & Completion
Impact over Time	Pending Expert & Completion
Impact over Events	Pending Expert & Completion

Tentative Schedule

- Prototype development to be completed by December 2011

- Social impact analysis to start on January 2012

Thank You