A Framework for Analyzing Change Management in Geomatics Development Projects
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From Pharaohs to Geoinformatics FIG Working Week 2005 and eSDI-8, Cairo, Egypt April 16-21, 2005

Change Management in Geomatics?
- change may involve new technologies, new processes, integrated resources/sections, diverse project teams, new contexts
- management of change can assist the process
- results of non-, or poor management:
  - Budget overruns
  - failure to achieve the objectives of change
  - extended timeframes
  - dissatisfied employees and customers
  - change is not sustained
  - etc...

What is a “Development Project”?
- Development addresses (Seers, 1997):
  - poverty,
  - unemployment, and/or
  - inequality
- Geomatics development projects generally have primary goals relating to:
  - Poverty alleviation
  - Redressing inequality

Why Analyze Change Management?
- to improve the way we do it
- challenging process: knowledge, skill and understanding

Is a new perspective required?
- Traditional project perspective:
  - initial, transitional, and closure stages
  - defined budgets and timeframes
  - measurable interim and final goals
  - closed systems (most are open systems)
  - linear processes (most are cyclical)
  - non-complex scenarios (most are complex)

Change and Complexity
- Changes in
  - the environment
  - organizational priorities
  - organizational structures
  - the way work is done
  - personnel policies
  - roles
  - culture
  - many of these = complex change

Looking for a Framework of accepted norms of change management

(Reichard and Harris, 1987)
Forces of the System Driving Change

- conflict between forces driving change
- strategic management
- strategy = set of choices from this tension
- Framework from Fahey (1994) adapted and extended to internal organizational forces

Principles underlying transformation

- General ethos/“bottom line”/guiding principles/unstated rules by which the change game must be played
- May be part of mission, goals, vision of organization
- May be legislated (esp. in public organizations)
- Must be communicated effectively
- So, they must be determined
- Examples: fairness, transparency, inclusivity

Resistance To Change

- Systemic resistance
  - Cognitive: due to a lack of knowledge, information, or skills
    - communication and information
  - Behavioural resistance
    - Emotional: derives from reactions, perceptions, and assumptions.
    - natural individual and group processes of addressing prejudice, assumptions, perceptions, and conclusion formulation

Kotter’s Eight-Stage Process

- Stages: 1–4: creating the climate in which change can take place.
- Stages 5–7: introduction of new practices into the organization
- Stage 8: changing the organizational culture

Stage 1: Establishing a Sense of Urgency

- Why?
  - overcome complacency
  - generate energy for change effort
- How?
  - examination of market and competitive realities
  - identify/generate/discuss a crisis or potential crisis
  - identify major opportunities
Stage 2: Creating the Guiding Coalition

- Guiding coalition = core group.
- Characteristics:
  - powerful
  - expertise for informed and intelligent decision-making
  - credible/respected
  - some should be proven leaders
  - some should be proven managers

Stage 3: Developing a Vision and a Strategy

- Vision
  - directs the course for change
  - is imaginable, desirable, feasible, focused, flexible and communicable
- Strategy
  - identify change priorities
  - set timeframes for changes
  - set timeframes for required feedback (may result in changing the targets)

Stage 4: Communicating the Vision Internally

- Vertical Communication:
  - Guiding coalition: role model changed behaviour
  - Communicate vision in many ways
- Horizontal Communication:
  - Communication across different sections of the organisation/system e.g., IT division to production division

Stage 4: Communicating the Vision Externally

- Why?
  - Outside role-players
  - Retain political mandate
  - Many and diverse constituencies
- Challenges: illiteracy, language diversity, educational levels

Stage 5: Empowering Broad-based Action

- Bridge the ‘knowing-doing gap’
- Create an environment for change actions
- Remove obstacles through
  - Communication
  - Training
  - Removing managers who block change
  - Aligning systems and structures with change
- Encourage risk-taking and non-traditional approaches

Stage 6: Generating Short-Term Wins

- Why?
  - Sustains the vision, encourages participants
- What?
  - Early positive feedback – interim targets
  - Visible, unambiguous and genuine achievements
  - Clearly related to the overall change effort
  - Visible recognition and reward
  - Cannot be left to chance – generated/planned/managed
Stage 7: Consolidating gains and producing more change
- Systems, structures, policies may be further adapted to be in line with the vision
- Hiring, promoting and developing people
- Process can be reinvigorated with new projects, themes, and change agents

Stage 8: Anchoring new approaches in the culture
- Cultural change occurs through the process, but it can easily reverse
- New behaviours → organisational success
- Change should not hinge on a particular leader/coalition: succession policy
- Change in organizational culture should be consolidated

Additions to the Kotter model
- Issue 1: Politics
  - Extra-organizational politics and public relations: developing and nurturing power contacts
- Issue 2: Engage Your Adversaries
  - Continuous engagement in dialogue
  - Minimize polarization
  - Maximize chance of finding common ground
- Issue 3: Legalwise
  - Legislation relating to the process of change
- Issue 4: Managing Race and Gender issues

Conclusions
- Forces driving change
  - Systematically identified
  - Categorized as exogenous or endogenous to the system
- Kotter’s 8 stage process
  - Plus some additions
  - An appropriate model for managing change in geomatics development projects

Systematic management - sustainable reform
- Framework for change management is identified for analysis of the effectiveness of a change process in geomatics development projects in the developing context
- Design is holistic, multifaceted
- Explores context of complexity, resistance to change, principles underlying reform

Conclusions
- Forces driving change
  - Systematically identified
  - Categorized as exogenous or endogenous to the system
  - Categorized into social, political, technological, legislative and economic dimensions
- Kotter’s 8 stage process
  - Plus some additions
  - An appropriate model for managing change in geomatics development projects

Acknowledgements:
- School of Architecture, Planning and Geomatics, University of Cape Town
- Dept of Geomatics Engineering, University of Calgary
- Lincoln Institute of Land Policy
- The City of Cape Town

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"Steering the Course" of Complex Change requires

- awareness of the need for constant feedback and new input to the system,
- knowledge that the process is cyclic rather than linear,
- understanding of the organizational system including its environment
- knowledge of how to get best performance out of the system and, more importantly
- knowledge of the vision, or destination

Forces of the System Driving Change

External Organizational Environment

- Social:
  - nature, level of service demanded
  - technology required: lag behind the state-of-the-art, rather the norm expected by the society (or a client subset of society).
- Political:
  - retain mandate (especially public organizations)
  - respond to new policies and goals
  - reactive or proactive action
  - substantial political reform → group and individual reform (cultural reform)

Forces of the System Driving Change

Technological:

- requirements of end-users and clients
- speed of delivery

Legislative:

- Legislative reform can drive change
- Change can also drive legislative reform
  - Risky, unpredictable
  - Time consuming
  - Defensible in a cyclic rather than linear approach to change

Forces of the System Driving Change

Economic:

- Economic forces of the client society of geomatics development projects
  - poverty of a community is a force for pro-poor housing initiatives
  - redistribution of wealth may drive changes in property valuation and taxation

Forces of the System Driving Change

Internal Organizational Environment

- Social: reflection of external societal changes – HR changes etc.
- Political:
  - internal reform may lag behind societal legislation
  - internal organizational politics – power struggles – can be a catalyst for reform if strongly polarized
  - intra-organizational politics – organizations in the system can have different political paradigms and agendas
**Forces of the System Driving Change**

- **Technological:**
  - Advances improve possibility of achieving goals
  - Goals can be changed/expanded
- **Legal:**
  - Internal structures and processes – must comply with current legislation
- **Economic:**
  - Income generated by an organizational unit w.r.t. cost of the unit
  - E.g., teaching geomatics in an economically sustainable manner

**Resistance To Change**

- Individual, group, and organizational attitudinal impediments to change
- Temporary suppression or true transformation?
- Consolidating change → sustainable transformation