



Best Practice in Change
Management
ECRI Update presentation
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What is the secondary impact of change?

- Definition is “The impact of change on unchanged work”, i.e.;
 - Impacts that affect the contractor’s ability to perform the unchanged work at planned productivity
 - In other words, the impacts that a change (or group of changes) has on the cost of performing the unchanged work
- This is also known as...
 - ...disruption
 - ...productivity loss
 - ...secondary effects
 - ...knock-on impact
 - ...ripple effects
 - ...etc

Why manage the Secondary Impacts of Change?

- Secondary impacts of change can destroy project performance for many project participants
- Millions of dollars and countless hours of industry effort are expended annually to resolve disputes over project changes
- Very poor project performance is all too common in large complex construction projects, for example;
 - U.S. Navy's Littoral Combat Ship - currently \$100 million over the original budget estimates
 - The Channel Tunnel - \$10 billion over original budget and two years late
 - Boston Central Artery - \$10 billion over original budget and seven years late
 - U.S. Department of Energy's National Ignition Facility - \$1 billion over original budget and six years late

Three most likely causes of cost overruns and schedule delays

- Failure to recognise changes that have occurred on the project
- Failure to use best current project controls practices
- Inadequacy of the project controls practices themselves
 - Impacts of project change on cost of performing unchanged work are not systematically addressed in current project control methods

The Secondary Impacts of Project Changes

- ECRI's Change Management Working Group recognised that current change management methods do not adequately address all the effects of secondary impacts of project change on project success following interviews of ECRI member firms on practices in managing the secondary impacts of project change
- There are considered to be two possible perspectives to secondary impacts of project change
 - Reactive perspective - Acceptance that secondary impacts are inevitable, capturing these as best possible when they appear, and presenting claims to owner to recover cost and lost time
 - Proactive perspective - It is better for all project participants to anticipate and mitigate or knowingly accept secondary impacts than to let them occur and potentially disagree on their resolution after-the-fact
- Mitigation requires foreseeing the impacts of changes accurately and as early as possible to plan and implement effective mitigating actions

Documenting Best Practice for secondary impact of change

- ECRI Sub-Committee has documented a deliverable based on the pro-active approach to develop best practice for addressing the results of secondary impact of change as articulated in ECRI-CM-004 completed in January 2009
- The complete document is available in the documents handed out and on the ECRI website
- The deliverable addresses covers the following broad areas:
 - Introduction
 - The Secondary Impact Problem
 - Barriers to Managing Secondary Impacts of Project Changes
 - A Framework for Explaining Secondary Impacts of Project Change including a model for assessing the Secondary Impacts of project changes
 - Improving the Management of Secondary Impacts of Project Changes

Documenting Best Practice for secondary impact of change (cont)

- The deliverable addresses the proactive approach and covers
 - Discussion of the challenges of managing the secondary impacts of project changes
 - Explanatory framework and implementation of recommendations to improve management of secondary impacts
 - Nature and size of challenge of successfully managing the secondary impacts of project change
 - Description of primary barriers to easy, fast, and inexpensive solutions
 - Framework to explain secondary impacts and suggested actions for improving management of secondary impacts
 - Implementation issues based on the successful implementation of the framework by an ECRI member organisation
- Primary audiences include contractors, subcontractors, and owners and developers of constructed facilities

Barriers to Managing the Secondary Impacts of Project Change

- Can be widely separated in space and time from precipitating events
- Can act synergistically across a large number of changes
- Can create impacts not easily traced to the original change
- Are fundamentally about productivity and rework
- Drivers are often difficult to discern
- Difficult to communicate the causes and drivers to the impacts
- Relationships are difficult to identify and may change with time
- Difficult to quantify the nature and size of the impacts, and
- Difficult to know what mitigating actions will be the most effective

The framework: Imperatives for effective management of change

- Identifying and understanding underlying causes of secondary impacts and their influence on project performance
- Understanding of how proposed management decisions will affect secondary impacts and project performance
- Causes and explanations must be process, resource, and operations based
 - Actions that influence project performance must first influence project processes, resources, operations, or how they interact
 - To proactively manage secondary impacts, project teams must have a reliable set of tools and methods for developing a deep understanding of causes and drivers of secondary impacts

The framework: Formal Model capabilities

- Link cause and effect when they are separated in time and space
- Accumulate impacts across large numbers of individual impacts
- Model the impacts of productivity and rework
- Explain variations in productivity and rework
- Quantify the sizes of both direct and secondary impacts separately
- Reflect conditions specific to individual or groups of related projects
- Reflect conditions both with and without the project change
- Distinguish among the impacts due to the changes and other circumstances
- Assess what would happen under alternative conditions
- Facilitate explaining the causes, the impacts, and how the causes generate the impacts, to facilitate contractor – customer interactions about changes
- Describe the causation that ties effect to precipitating event(s)
- Account for and explain cumulative impact of many individual events
- Permit validation of the model and testing for its usefulness

- Traditional methods of assessing impact of change on projects overlook one very important influence
 - The impact of change on the ability to perform the base scope of work (the "uncharged" work) at the original, planned productivity
 - The secondary impact and under certain conditions has the potential of being large.
 - Meaningful analysis of secondary impact should be part of every change impact assessment
- A conceptual framework known as the "Rework Cycle" has been found to best explain this influence
 - Various methods can be (and have been) used to quantify secondary impact
- Pro-active mitigation of secondary impacts is only possible when analysis takes place early in the project life cycle

Secondary Impact of Change – Power Point Presentation

- A detailed presentation is being developed as deliverable ECRI – CM – 005 to covering:
 - Definition and effects of the Secondary Impacts of change
 - Conclusion as to what the Secondary Impacts of Project Change can be on a project
 - General Introduction
 - Issues that usually prevent a rational analysis of secondary impacts of change
 - Barriers to managing secondary impacts of project change with examples
 - Requirements for managing secondary impacts of project change
 - Detailed worked example of the analysis of the Secondary Impact of Change on a project
 - Best practices approach that could be used by organizations on their projects
 - Conclusions

Secondary Impact of Change – Power Point Presentation (Cont)

- In addition to providing the methodology to understand and undertake the analysis of the Secondary Impacts of Change on the project the presentation will contain the following 3 key messages;
 - ❖ Traditional methods of assessing the impact of change on projects overlook one very important influence – the impact the change has on the ability to perform the base scope of work at the original planned productivity. This influence has the potential of being large and is called the Secondary Impact of Change on the project
 - ❖ A conceptual framework known as the “Rework Cycle:” has been found to best explain this influence
 - ❖ Pro – active mitigation of the Secondary Impacts is only possible when the analysis takes place early and continuously in the project life cycle

Secondary Impact of Change – Power Point Presentation (Cont)

- The presentation will be approximately 45 minutes long
- Will provide the requisite detail and end explanation of the Secondary Impacts of Project Change and analysis techniques
- Will include the necessary explanatory text to ensure that the presenter is able to answer all the relevant questions that may be raised and ensure that a consistent message on the deliverable can be given to diverse audiences

- Secondary impacts of change affect contractor's ability to perform the unchanged work at planned productivity
 - Can often have large and deleterious affects on project performance
 - Rarely managed to the mutual satisfaction of all project participants
- ECRI committee has developed best practice to address results of secondary impact of change
 - A proactive, causal approach to ensure success
- Objectives:
 - To assist member firms in explaining the secondary impact of change to their internal stakeholders
 - To ensure consistent message from ECRI to all member firms across the industry
- Final deliverable to be completed by end July 2009