

# EVENT CHAIN METHODOLOGY

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## Introduction

In the initial stages of a project, complex processes and the many risks involved make it impossible to accurately model. A model of a project is necessary for efficient project management.

Event Chain Methodology, an improbable modelling and schedule network analysis technique, is a solution to this problem. This technique is used to manage events and event chains that influence project schedules.

It is neither a simulation nor a risky analysis method but rather works using existing methodologies such as Monte Carlo Analysis and Bayesian Believe Network. Also, event chain methodology is used for modelling probabilities for different businesses and many technological processes of which one is project management.

## Principles of Event Chain Methodology

Event Chain Methodology is based on six main principles

### Principle 1

**Moment of Risk and State of Activity** - In a real life project process, a task or an activity is not always a continuous procedure. Neither is it a uniform one. A factor that influences tasks is external events, which in turn transform tasks or activities from one position to another.

During the course of a project, the time or moment when an event occurs is a very important component of the event. This time or moment is predominantly probabilistic and can be characterized using statistical distribution. More often than not, these external events have a negative impact on the project.

### Principle 2

**Event Chains** - An external event can lead to another event and so forth. This creates event chains. Event chains have a significant impact of the course of a project.

For example, any changed requirements to the materials needed for the project can cause the activity to be delayed. The project manager then allocates resources from another activity. This leads to missed deadlines and eventually leads to the failure of the project.

### Principle 3

**Monte Carlo Simulations** - On the clear definition of events and event chains, Monte Carlo Analysis is utilized in order to quantify the collective consequences of the events.

The probability of the risks occurring and the effects they may have are used as input data for the Monte Carlo Analysis. This analysis gives a probability curve of the project schedule.

### Principle 4

**Critical Event Chains** - Critical events or critical chains of events are those with the potential to impinge on a project the most. By identifying such events at the very beginning, it is possible to lessen the negative effect they have on projects.

These types of events can be detected by examining the connections between the primary project parameters.

### Principle 5

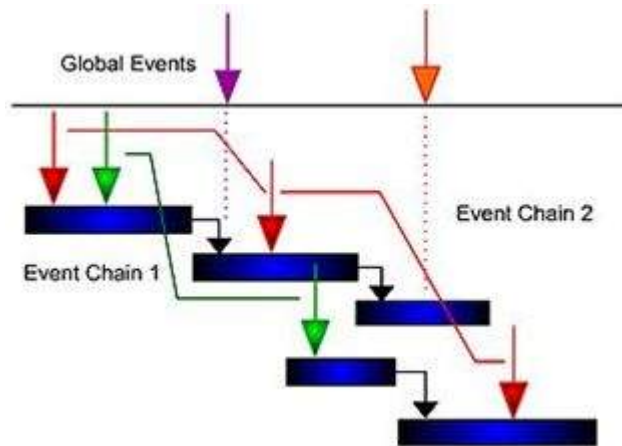
**Performance Tracking With Event Chains** - It is important for a manager to track the progress of an activity live. This ensures that updated information is used for the Monte Carlo Analysis.

Hence during the duration of the project, the probability of events can be calculated more accurately using actual data.

## Principle 6

**Event Chain Diagrams** - Event Chain Diagrams depict the relationships between external events and tasks and how the two affect each other. These chains are represented by arrows that are associated with a particular activity or time interval on a Gantt chart.

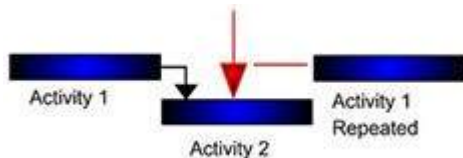
Each event and event chain is represented by a different color. Global events affect all the tasks in a project while local events affect just one task or activity in a project. Event Chain Diagrams allow for the simple modelling and analysis of risks.



## Event Chain Methodology Phenomenon

The use of Event Chain Methodology in project management produces some interesting phenomenon:

- **Repeated Activity** - Certain external events cause the repetition of activities that have already been completed.



- **Event Chains and Risk Mitigation** - When an event occurs during the course of a project, a mitigation plan, that is an activity that expands the project schedule, is drawn up. The same mitigation plans may be used for several events.
- **Resource Allocation Based on Events** - Another phenomenon that occurs with Event Chain Methodology is the reallocation of resources from one activity to another.

## Conclusion

Using existing techniques such as the Monte Carlo Analysis, Event Chain Methodology manages events and subsequent event chains in project management.

Working by six principles, this methodology simplifies the risks and reservations associated with project schedules. Therefore, the project managers and other senior managers, who are responsible for project accounts should have a clear understanding on the Event Chain Methodology.

Since Event Chain Methodology is closely related to many other techniques used in project management, such as Gantt Charts and Monte Carlo Analysis, the project management should be thorough with all supporting techniques and tools for Event Chain Methodology.