

# THE DETERIORATION FROM AN ORGANIZATIONAL LOSS OF STABILITY INTO AN ORGANIZATIONAL LOE

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## Abstract

This paper correlates the pattern of organizational behavior symptoms discussed in the Theory of Organizational LOE's (Goetz and Hamner, 2003) to behavior documented within two organizations during the process of introducing new technology. The methodology chosen for this research is the critical incident technique. This method identifies significant events within the organization and then analyzes their impact on the organizational environment. The critical incidents considered in this paper are the introduction of new technologies. Significant disruptions during the new technology implementation phase that result in slippage in the timeline for completion of the project are defined as churn. Churn results from a loss of stability within the organization and may ultimately have an impact on productivity, morale, absenteeism, turnover, motivation, and conflict as was first described in the Theory of Organizational LOE's. The data analyzed for this research was originally collected into individual databases by an independent consulting firm.

## Introduction

The Theory of Organizational LOE's (loss of effectiveness) proposed by Goetz and Hamner (2003) hypothesizes the existence of a syndrome that may result from a loss of stability within the organization. The essence of this theory is that if an organization experiences a loss of stability, such as the introduction of new technology into the organizational environment, the potential exists for a decline into an organizational LOE. The metrics used to define an organizational LOE are based on the organization exhibiting four or more of following six symptoms: loss of productivity, morale, absenteeism, turnover, motivation, and conflict.

Individuals or groups within organizations become accustomed to "leaning on" familiar technology. When it becomes advantageous to replace old technology with newer models, it can cause a disruption within the organization. When this occurs, the organization suffers from loss of stability. This research hypothesizes that the churn, which may occur during the implementation phase of new technology, may be a consequence of an organizational loss of stability. This loss of stability and subsequent churn is then correlated to the symptoms associated with

organizational LOE's. The foundation for this analysis relates to whether or not the tracking of project churn in a new technology implementation project can predict an organizational LOE.

The current analysis is based on the data collected in two separate databases which were provided by an independent management consulting firm. These databases contains records which chronicle the incidence of churn during a new technology implementation project and assign a reason code to identify the reason the churn occurred. The reason codes are then equated to the symptoms of organizational LOE's in the original introduction of this theory in Goetz and Hamner (2003). This research seeks to validate the Theory of Organizational LOE's by exploring the integral relationship between the symptoms of an organizational LOE and the standard reason codes for project churn elucidated in these databases.

## Theory of Organizational LOE's

In 1945, Dr. Rene Spitz identified a condition he termed Anaclitic Depression. Dr. Spitz's research focused on the manifestation of symptoms that occurred in certain people who were deprived of something that was important to them. The word anaclitic is derived from the Greek word Anaclisis which means to "lean on." The result of his analysis was a set of symptoms which were characteristic of individuals suffering loss based on the removal of an object they were previously accustomed to "leaning on." The symptoms are frustration, anxiety/apprehension, withdrawal, refusal to participate, retardation of development, and rejection of the environment.

For the purposes of this research, the object referred to as having been "leaned on" is the old system or technology that is being replaced by a newer one. The Theory of Organizational LOE's (loss of effectiveness) is based on the correlation between the behavioral symptoms originally identified in individuals by Spitz (1945), and organizations. The loss of organizational stability is equivalent to the removal of an object an individual had been accustomed to "leaning on." Exhibit I displays the organizational equivalents of the individual behaviors.

**Exhibit I:** The Individual Behaviors and Corresponding Organizational Behaviors

Symptoms of Individual Anaclitic Depression	Corresponding Behavior in the Work Environment
Frustration	Loss of Productivity
Apprehension (Anxiety)	Morale
Rejection of the environment	Conflict
Withdrawal	Turnover
Refusal to participate	Absenteeism
Retardation of development	Motivation

The correlation of the individual symptoms to the organizational equivalents is based on the symptom connection to existing organizational behavior theories as described by Goetz and Hamner (2003).

**Research Study Design**

The Theory of Organizational LOE’s proposed by Goetz and Hamner (2003) postulates that a syndrome previously identified in individuals can be correlated to organizational behaviors. This study specifically focuses on the loss of stability associated with the implementation of a new technology and its possible effects on an organization.

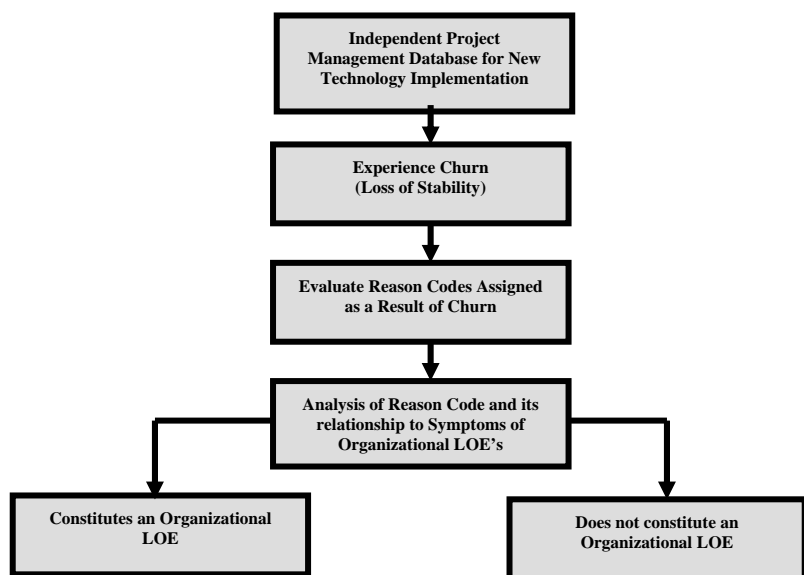
The *Critical Incident Technique* developed by John C. Flanagan and colleagues in 1954 is the methodology chosen to initially identify the loss of organizational stability. “*The critical incident technique consists of a set of procedures for collecting direct observations of human behavior in such a way as to facilitate their potential usefulness in solving practical problems and developing broad psychological principles.*” (Flanagan, 1954) The graphical representation of the research study is shown in Exhibit II. As indicated in the graphic, the proposed critical incident is the loss of stability which results from a project to replace older technology with newer technology. This has the potential to manifest itself into an organizational LOE as defined by Goetz and Hamner (2003).

Métier Corporation is a management consulting firm located in the Washington D.C. metropolitan area. Métier was founded in 1998. The mission of Métier Corporation is to provide project management software and management consulting services that assist with the analysis of and prediction of work. The software program is called WorkLenz. WorkLenz is a comprehensive software package that provides statistical analysis and graphical reporting of current project progress and future forecasts. The software combined with the management consulting services of Métier assist in decision making for project costs, schedule, performance, and resource allocation of current and future tasks.

The data for this research was extracted from the databases of two different Métier Corporation projects. Both projects spanned multiple years. They were tracked for several thousand separate tasks, and were analyzed with respect to the final completion dates as compared to the estimated completion dates. The difference between the estimated and final completion dates is significant because it indicates the effect of project churn.

Webster’s dictionary defines the verb *churn* as producing or being in violent motion or to stir or agitate violently. Although the concept of project churn might not be considered violent in nature, the movement of a project over a timeline can certainly be extremely volatile and at times impossible to control. Churn can be positive, negative and/or unanticipated. This research focuses on the evaluation of the occurrences of churn that are negative and/or unanticipated.

**Exhibit II:** Basic Research Diagram



For the purposes of this research, the definition of churn is the slippage of a task based on the preliminary time to completion estimates. This analysis focuses on identifying and evaluating the occurrences of churn as each relates to the overall timeline of the project. The occurrence of churn is evaluated in terms of its significance and what is occurring for the project during that time. The definitions of the three types of project churn as characterized by Métier are shown in Exhibit III.

**Exhibit III: Definitions of Churn**

<b>Churn Type</b>	<b>Definition</b>
Right/Positive Churn:	a task that occurs prior to the estimated start date.
Left/Negative Churn:	a task that occurs after the originally estimated start date.
Vertical/Down Churn:	a task that is the result of an unanticipated event.

The analysis of project churn focuses on churn that detrimentally impacts the time, budget, and overall success of the completed project. For each occurrence of churn within the database, a reason code is assigned that documents the primary cause for that particular incidence of churn.

The reason code is a unique identifier that is assigned by the project manager to provide a description for why the churn occurred. Métier provides a master list of reason codes to each of its clients. The client then chooses the codes most applicable to their respective project. The customized list then becomes an integral part of the WorkLenz software. Reason codes from this list are then assigned to each incidence of churn that occurs during the life of the project. Exhibit IV is a master list of the reason codes and the respective definitions as provided by Métier. It is noted that several of the definitions simply mirror the code name itself. The specific definitions for the more generic reason codes are assigned by each respective client.

**Exhibit IV: Reason Code Master List**

<b>Reason Code</b>	<b>Reason Code Definition</b>
Unknown	Reason code not captured
Time Constraints	Time Constraints
Higher Priorities	Higher Priorities
Resource Unavailable	Resource Unavailable
Planning Issue	Planning Issue
Communication Issue	Communication Issue
Product Malfunction	Third-Party product issue.
Client Unexpected Request	Unexpected client request caused task to slip.
Budget Considerations	Task included due to excess budget or task pushed due to budget constraints.
Client Pushed Project	Client moved project dates out due to their own internal issues.
Issue Unexpected	Issue arose during implementation that was not anticipated.
Inadequate Information	Inadequate Information
Morale Issue	Morale Issue
Equipment Issue	Equipment Issue
Client Delays	Client Delays
Staffing Issue	Staffing Issue
Scope Issue	Scope Issue
Vendor	Vendor
Prospect Request	Prospect Request
Data Entry Error	Data entered incorrectly
Accounting Transition	Change in accounting practice
Software Bug	Unplanned problems with the functioning of the software

Project churn can directly impact the success or failure of a project and possibly the economic well-being of the organization. The current research on churn data revealed that a large number of technology implementation projects experience a high rate of churn or slippage from their original timeline. The Métier website states that complex projects are over budget, behind schedule, or abandoned 84% of the time ([www.metier.com](http://www.metier.com)). The New Zealand Public Service Information Technology Stocktake research of the industry standards of project slippage has revealed that

only 9% of IT projects in the United States in the public and private sector are completed on time and within budget. Thirty-one percent are cancelled before completion; and of those completed, 53 percent cost, on average, 189% of their original estimate (<http://www.executive.govt.nz>).

Exhibit V introduces the correlation between the reason codes as prescribed by Métier with the corresponding equivalent organizational response as described by the Theory of Organizational LOE's (Goetz and Hamner, 2003).

**Exhibit V: Equivalents to Organizational LOE Symptoms**

Churn_Reason_Code	Organizational LOE
Planning Issue Product Malfunction Equipment Issue Data Entry Error Accounting Transition Software Bug Vendor	Productivity
Morale Issue	Morale
Communication Issue Client Unexpected Request Issue Unexpected Inadequate Information Budget Constraints Client Pushed Project Scope Issue Client Delay	Conflict
Staffing Issue	Turnover
Resource unavailable	Absenteeism
Time Constraints Higher Priorities Prospect Request	Motivation

**Study Analysis (preliminary)**

The data provided by Métier includes both graphical and numerical data for churn. Graphical representation of the churn over the life of the project is analyzed in order to determine the point on the timeline where the highest levels of churn were occurring. Although the graphics provide a visual representation of churn on a monthly basis, further analysis of the numerical data is needed to determine a specific range of days that the churn actually occurred.

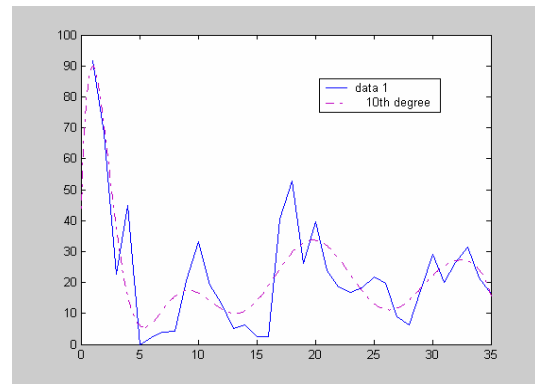
The 10<sup>th</sup> degree polynomial is used to define a curve fit for each graphic within the respective database. Curve fitting refers to the mathematical techniques involved in trying to find the curve which best "fits" a particular set of data points (<http://www.agocg.ac.uk/train/delta/pc/curvefit.htm>).

The inflection point is then calculated to isolate the dates of the highest churn rate. The inflection point is a exact point in the graph where the slope changes direction. (<http://www.qcalculus.com/cal06.htm>).

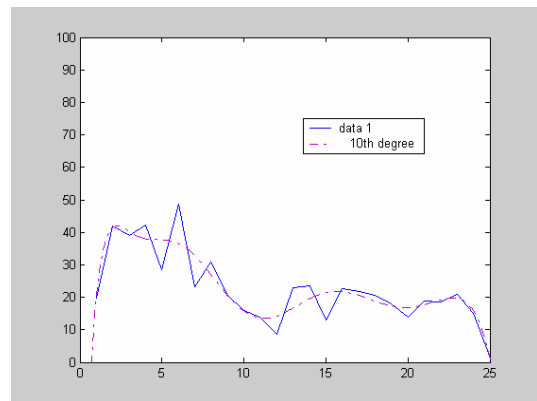
These respective inflection points are then matched to the churn reason codes listed in the database. The date range for churn is established and matched against the churn reason codes occurring at the same time on the project timeline.

Exhibit VI and VII represent the monthly churn graphic for each of the projects. The X-Axis represents the timeline for the life of the project. The Y-Axis is the percentage of churn occurring over the life of the project. The solid line represents the original curve and the dashed line represents the 10<sup>th</sup> degree polynomial curve fit.

**Exhibit VI: Graphical Representation of Project Churn for Database I**



**Exhibit VII: Graphical Representation of Project Churn for Database II**

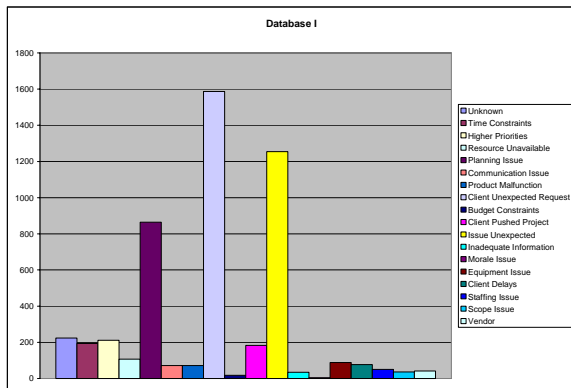


A separate and independent database constructed from the numerical data provided by Métier has been

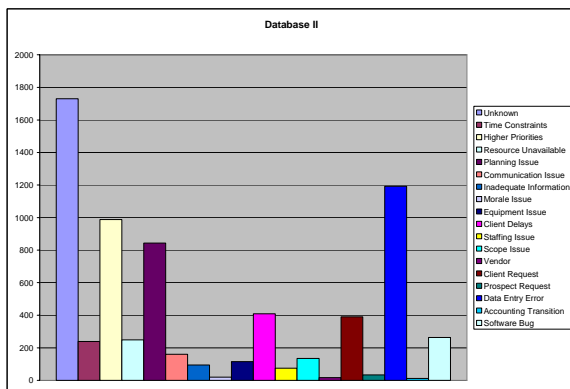
established to evaluate the number of specific occurrences of churn and the respective reason code assigned by the client. This information provides for an overall analysis of the churn percentages as well as the most common reason codes assigned during the life of each respective project.

The analysis of database I is reflected in Exhibit VIII. The X-Axis represents the distribution of each reason code. The Y-Axis is the number of occurrences of the reason code over the life of the project. The reason codes with the most significant levels of churn are Unknown at 25%, Data Entry Errors at 17% and Higher Priorities at 14%. During the interviews previously mentioned clarification is being conducted with individuals associated with this database to clarify the basis for classifying churn occurrences with an unknown reason code and to determine whether or not there is significant similarity in the assignment of this particular reason code. Exhibit IX reflects the churn reasons that occurred during the life of database II. The reasons that appeared most frequently were Client Unexpected Request at 31%, Issue Unexpected at 25%, followed by Planning Issue at 17%.

**Exhibit VIII-** Analysis of Churn Reason Codes for Database I



**Exhibit IX-** Analysis of Churn Reason Codes for Database II



The most common reason code assignments for both databases correlated with the organizational LOE symptoms of Productivity, Conflict and Motivation. However, all of the symptoms are represented in each database as they relate to project churn.

The date range calculations for the inflection points are in process and an interview phase of the analysis will immediately follow. The interviews with the individuals directly involved with the management of each respective project are intended to serve as further validation of the date ranges established by the calculation of the inflection points, as well as help determine whether or not the churn was sufficient to result in an organizational LOE.

### Conclusions

The exact percentage of overall project churn as well as the number of the symptoms that must be present in order to rise to the level of an organizational LOE has not been determined. In the initial analysis of each database, the level of churn is significant. Both projects were negatively impacted by cost overruns, delayed completion dates, and aspects of the technology implementation that failed to meet expectations. Does this churn deteriorate into an organizational LOE? If so, what can be done about it?

Future research to determine the percentage of churn that constitutes an organizational LOE is significant in the evolution of this theory. Additionally, broadening the scope of this research to include the relevance of the Theory of Organizational LOE's to general organizational change. This could include organizational changes such as leadership, organizational structure, and process.

The data for this study was provided by a single organization. In order to generalize a theory of this nature, studies that span across multiple organizations are necessary. A study that extends to additional organizations would provide new facets to this ongoing research of an organization's decline into an organizational LOE as a result of a loss of stability. This continued research might also include procedures to mitigate or at least decrease the impact of change on the overall functioning of the organization.

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