# DIGITAL STORYTELLING IM ENTERPRISE 2.0

### AGENDA

I. Motivation und zentrale Fragestellung

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1. Motivation und zentrale Fragestellung

2. Drei Paper über Digital Storytelling im Enterprise 2.0

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2. Drei Paper über Digital Storytelling im Enterprise 2.0

3. Zusammenfassung und Ausblick

# MOTIVATION UND ZENTRALE FRAGESTELLUNG

### MENSCHEN

## LIEBEN

GESCHICHTEN

### WARUM?

Gute Geschichten lösen Emotionen aus, die unbewusst zu einer Identifikation mit dem Inhalt führen



Durch die Assoziation wird die Aufmerksamkeitsfähigkeit gesteigert



Durch die bewusste und persönliche Auseinandersetzung mit dem Inhalt, kann er kognitiv besser aufgenommen werden und bleibt leichter im Gedächtnis



Interaktivität und Einflussnahme auf die Geschichte steigert die Identifikation zusätzlich



Multimedialität spricht mehrere Sinne an und verstärkt den Effekt von Geschichten noch

Aufmerksamkeit?

Gedächtnis?

Aufmerksamkeit?

Gedächtnis?

Aufmerksamkeit?

Das klingt doch perfekt für die Verbesserung der Kommunikation und des Wissensmanagements in Unternehmen? Aber...

Kunst



Kunst

CIVIL WAR

THE FIRMAL SEV

THE LEGACY OF ANTANAS

BABOONAS

No to traverse

Interactive pillars of light creating social interactions

S-VALLEY

MORPHALITY

MORPH

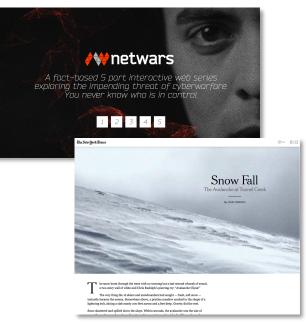
Medien/ Journalismus



Kunst



Medien/ Journalismus



PR/Marketing



### ...UND INTERNE KOMMUNIKATION?

### ...UND INTERNE KOMMUNIKATION?

Storytelling hat eine lange Geschichte in der internen Kommunikation!

### **Learning Histories: A New Tool For Turning Organizational Experience Into Action**

by Art Kleiner and George Roth

Editor: Suzy Wetlaufer

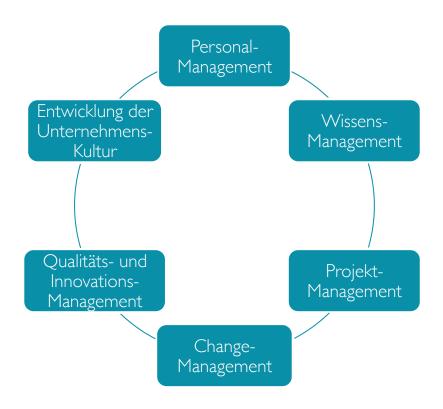
Date: June 3, 1997

In our personal lives, "experience is often the best teacher" or so the old saying goes. Why not, then, in corporate life? After a major event, a new product failure, a wild business breakthrough, a downsizing crisis, or a merger, many companies seem to stumble on in ways that miss the lessons of the past. Mistakes get repeated, while smart decisions do not. Most importantly, the old ways of thinking which I to past mistakes are never talked about; which often means that they are left in place to spawn new mishaps ad infinitum.

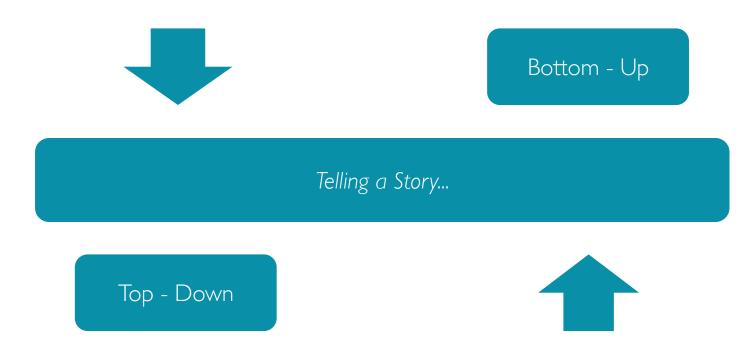
Ask individuals within a company about such major events, however, and they will often tell you they understand exactly what went wrong (or right). You might hear that the new product fizzled because no one in marketing listened to the people in manufacturing, or vice versa. Or the new product soared larg because R&D, or distribution, "finally got their act together." Each of these points of view represents a valid, but limited, piece of the answer to the puzzle of what happened and why. If all these perspectives could somehow be melded together coherently, the organization as a whole might learn what happened why it happened, and what to do next.

Yet these kinds of insights about organizational experience are rarely shared openly, and they are analyzed, debated, and ultimately internalized by the whole organization even less frequently. In other words, in corporate life, even when experience is a good teacher, it's only a private turtor! People in

### ANWENDUNGSBEREICHE



### ZENTRALE ANSÄTZE



### ... DIGITALE MODELLE?

Im Forschungsbereich Informatik gibt es kaum digitale Ansätze für das Storytelling in der Internen Kommunikation!

### ... DIGITALE MODELLE?

Dabei liegen im Enterprise 2.0 sowohl Anforderungen als auch die nötigen Potenziale für das Digital Storytelling vor!

Verteiltes Arbeiten

Flexibilität & Agilität

Home Office

Offenheit & Transparenz

Projekt- & Teamarbeit

Verschiedene Anstellungsmodelle Hierarchiefreie, netzbasierte, multimediale Kollaborations- und Kommunikationssoftware

Anforderungen

Möglichkeiten

vgl. Stecher 2012, S. 28

### 3 PAPER AUS VERSCHIEDENEN ANWENDUNGSBEREICHEN

### DAS NOCH KURZ

Geschichten in Unternehmen werden definiert als:

"sequences, actions or events, that involve characters, in which a business challenge or an opportunity, need to be faced."

### DIGITAL STORYTELLING IN DER

# PROJEKTARBEIT

### "CODETIMELINE: STORYTELLING WITH VERSIONING DATA"

#### Wer?

- Adrian Kuhn, University of British Columbia
- Mirko Stocker, University of Applied Sciences Rapperswil

#### Wo & Wann?

- International Conference on Software Engineering, Zürich
- 2012

#### Was?

Entwicklung eines Prototypen zur IT-Projektdokumentation anhand einer halbautomatisierten Zeitleisten-Visualisierung

#### CodeTimeline: Storytelling with Versioning Data

Adrian Kuhn Software Practices Lab<sup>1</sup> University of British Columbia

Mirko Stocker
Institute for Software
University of Applied Sciences Rapperswil

Abstract—Working with a software system typically requires knowledge of the system's history, however this knowledge is often only tribal memory of the development team. In past user studies we have observed that when being presented with collaboration views and word clouds from the system's history engineers start sharing memories linked to those visualizations. In this paper we propose an approach based on a story-telling visualization, which is designed to entice engineers to share and document their tribal memory. Sticky notes can be used to share memories of a system's lifetime events, such as past design rationales but also more casual memories like pictures from after-work beer or a hackathon. We present an early-stage prototype implementation and include two design studies created using that prototype.

Keywords-Software Visualization; Software Evolution; Humans and Social Aspects; Tools and Environments

#### I. INTRODUCTION

Understanding and working with a software system typically requires knowledge of the system's history and understanding the rationale of past design decisions. This kind telling visualizations are designed to invite their reader to get engaged with the visualized data by establishing a personal connection between the reader and the presented data [1], [2]. While some story-telling visualizations are purely "readonly," such as CNN's interactive map linking casualties in Iraq to their US hometown<sup>3</sup> (see Figure 1), others are "readwrite" and encourage their readers to collect or label data sets, such as The Guardian's crowd-sourcing of expense reports of parliament members<sup>4</sup>. More recently Facebook announced Timeline<sup>5</sup>, a story-telling overhaul of the user's profile page which has been designed to charm users to share past lifetime events, such as holidays and family events.

Given our experience with the Ownership Map [3] and the Sourcecloud<sup>6</sup> visualizations we conjecture that story-telling visualizations has the potential to encourage software engineers to share and document their tribal knowledge. We observed during past user studies that the visualization of code ownership and word clouds from a system's history evokes strong emotional response in software engineers and

### MOTIVATION

Mangelhafte Projekt- und Code-Dokumentation durch Entwickler



Erschwerte Einarbeitung von neuen Team-Mitgliedern



Erschwerte Rekonstruktion der Entwicklung für ähnliche Projekte

### HERANGEHENSWEISE

- Automatische Visualisierung des Projektverlaufs mit datenjournalistischem Ansatz
- Entwickler können Geschichten und Erinnerungen als Lifetime-Events (Kommentare, Fotos, E-Mail-Threads, Chat-Protokolle) kollaborativ in die Visualisierung eintragen

Stärkere Verbindung zwischen Entwicklern und Code



Verstärkte Bereitschaft Erinnerungen und Geschichten über das Projekt zu teilen

### DER PROTOTYP

- CodeTimeline = Storytelling Visualisierung als dynamisch veränderbares Pinboard
- Implementiert durch Eclipse Plugin (Entwicklungsumgebung) und steht auf Github zur Verfügung
- 2 Ansichten, die verschiedene Dimensionen der Geschichte des Systems darstellen können:
  - Collaboration View
  - Sourcecloud Flow View

### **COLLABORATION VIEW**

Paper I

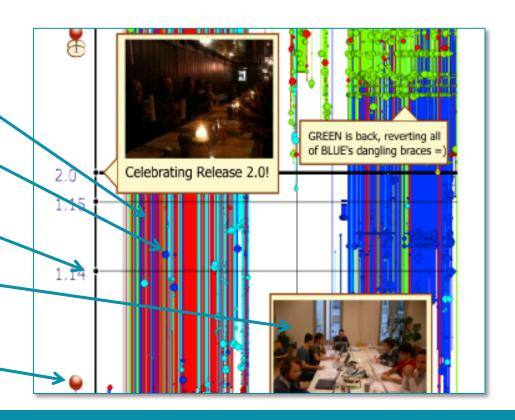
Farbliche Linien = CodeFiles nach Entwickler

Punkte = Commits (inkl. Autor und Commit-Message)

Horizontale Linien = Major Releases

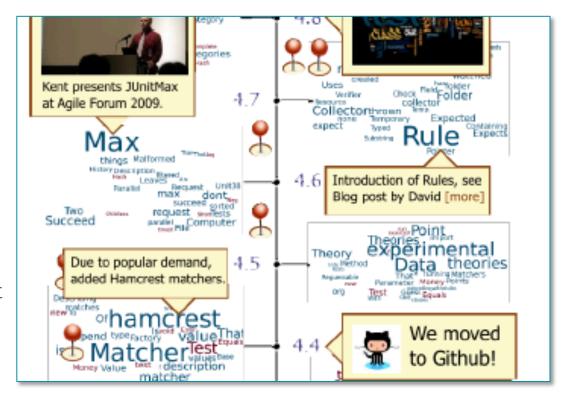
Sticky Notes = Kommentare zu Releases oder Commits

Pins = Allgemeine Kommentare



### SOURCECLOUD FLOW VIEW

- Darstellung der Identifier & Wörter der Kommentare exkl.
   Stop Words
- I Wordcloud pro Release
- Blau: Häufigkeit seit dem letzten Release gestiegen
- Rot: Häufigkeit seit dem letzten Release gefallen
- Schriftgröße: Absolute Häufigkeit
- Klick zeigt die entsprechenden Code-Fragmente



### ZWISCHENFAZIT

- CodeTimeline ermöglicht:
  - halbautomatische Dokumentationserweiterung (geringer Zeitaufwand)
  - Überblick über den aktuellen Projektstand und Projektentwicklung
  - Dokumentation vom implizitem Wissen durch Emotionalisierung
  - Dokumentation der Entscheidungsprozesse
  - Erleichterung von Einarbeitung neuer Mitarbeiter und nachträglichen Reviews durch Visualisierung
- CodeTimeline fehlt:
  - Usability + UX
  - Entfernung von Dubletten
  - Kommunikation innerhalb der Anwendung selbst

### DIGITAL STORYTELLING IM

## INNOVATIONS-

MANAGEMENT

### "A METHOD OF CAPTURING INNOVATION FEATURES USING GROUP STORYTELLING"

#### Wer?

 Rafael Escalfoni, Vanessa Braganholo, Marcos R.S. Borges; Universidade Federal do Rio de Janeiro

#### Wo & Wann?

- Expert Systems with Applications 38 (2011) 1148–1159
- 201

#### Was?

Entwicklung eines Prozesses zur Evaluierung von Innovationsfaktoren in Unternehmen mithilfe von kollaborativem Storytelling



#### Nataet Escationi, Vallessa Diagannoio

Programa de Pós-Graduação em Informática, Universidade Federal do Rio de Janeiro (UFRJ), Brazil

#### ARTICLE INFO

Keywords: Innovation Group-storytelling Organizational culture

#### ABSTRACT

Innovation is the fundamental source of value creation in organizations. Despite its importance, many companies fail to systematize the innovation process. The innovation process depends on a complex combination of factors related to organizational culture, which are not easily identified. This paper proposes a collaborative method to identify innovation factors from a successful project that led to innovation. Our method uses group storytelling to capture, organize, and share organizational knowledge. We then use a set of innovation indicators to extract collaboratively innovation features from the gathered knowledge. The method has been applied to a real project and generated a set of indicators to management.

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#### 1. Introduction

The dynamics of changes on the environment can lead organi-

future replication. This task, however, is not straightforward. As a way to overcome the difficulties in identifying the activities that comprise the innovation process, we propose a collaborative ap-

### MOTIVATION

Innovationsfreundliches Klima im Unternehmen = Grundlage für Innovationen



Gezieltes Schaffen und Optimieren dieses Klimas durch "Lessons Learned" aus erfolgreichen Innovationsprozessen

### HERANGEHENSWEISE

Literatur-Review zu Stärken und Schwächen bisheriger Innovation Management-Methoden

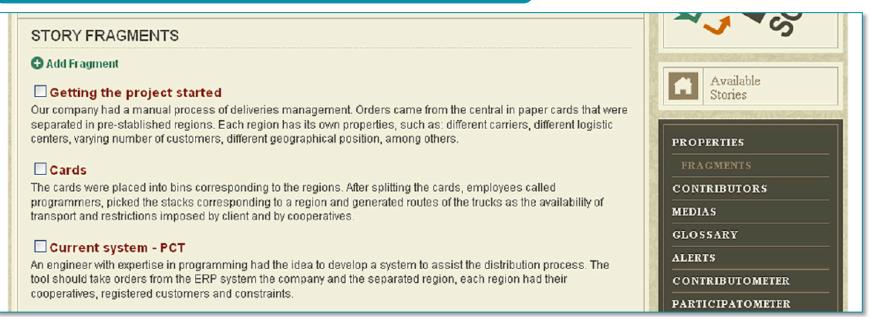


Entwicklung einer Methode zur Bündelung der Stärken und Aufhebung der Schwächen durch Verwendung von Collective Stories und Group Storytelling in einer Kollaborationsplattform



Prototypen-Entwicklung und Proof-of-Concept in einem Mineralöl-Konzern

### Phase I: Defining Stories in innovative Projects



### Phase I: Defining Stories in innovative Projects

A Brazilian distributor company had a manual process of managing deliveries. The orders came from the call center in paper cards, which were separated according to pre-established regions. These regions have their own characteristics, such as cooperatives, transport, central logistics, number of customers, geographic location, among others.

The cards were placed into bins corresponding to the regions. So, every day thousands of orders arrived at the central and they were organized by some staff. After splitting the cards, staff members (called programmers), picked the stacks corresponding to a region and generated routes of the trucks according to the availability of transport and restrictions imposed by customers and by cooperatives.

The constraints imposed by customers are special equipment for delivery, delivery time, size of the truck. Additionally, the constraints imposed by cooperatives are shift, region, trucks and equipment for delivery.

Some regions supplied many customers, which brought overload for the generation of efficient routes. For this reason, several orders were pending. It was difficult to find customers who live nearby, who had the same restrictions. etc. Sometimes, cards were lost, causing many problems.

Following the daily difficulties related to the route schedule, an engineer with expertise in programming had the idea to develop a system to assist the distribution process. The tool should take orders from the company's ERP system and the separate them by region. Each region had their cooperatives, registered customers and constraints.

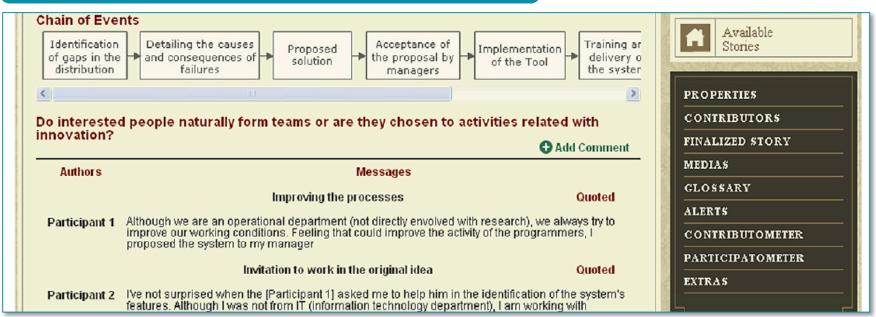
The manager received with enthusiasm the proposal of developing the system, which would be a major step forward for the distribution process. Costs and risks of deploying it showed relatively low. Thus the design of the system began.

The engineer asked for operators with different levels of experience to report their experiences with it and start developing the first version of the system. Initially the system was built with office computational tools MS Access and

some macros programmed in MS Visual Basic, which were the tools available at that moment.



### Phase 2: Forum



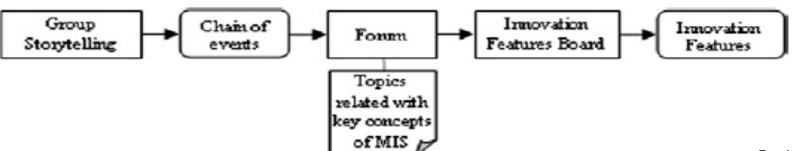
### Phase 3: Innovation Features Board



Phase I: Defining Stories in innovative Projects

Phase 2: Forum

Phase 3: Innovation Features Board



## ZWISCHENFAZIT

### • Die Methode ermöglicht:

- Nutzung des Storytellings zur Generierung von authentischen, lebendigen und "reinen" Informationen
- Intensive Nutzung von internetbasierten Kommunikationsmöglichkeiten zur Identifikation von explizitem und implizitem Erfahrungswissen
- Mitarbeiter regen sich gegenseitig dazu an, die Geschichte weiterzuentwickeln → (Fast) vollständiges Bild entsteht, das von verschiedenen Perspektiven betrachtet werden kann
- Nutzung des Erfahrungswissens für einen konkreten Anwendungsfall in einem strukturierten Prozess

### Der Methode fehlt:

- Multimediale Gestaltung der Geschichte
- Auswahl der Innovation Features durch die Storytellers z.B. durch Voting
- Evtl. Gamification Ansatz zur Steigerung des Engagements?
- Wissenschaftliche Evaluierung der Effektivität

# DIGITAL STORYTELLING IM

# E-LEARNING

### "DESIGNING TRAINING CONTENT THROUGH GROUP STORYTELLING"

### Wer?

 Ricardo Tulio Gandelman, Flávia Maria Santoro; Universidade Federal do Rio de laneiro

### Wo & Wann?

- Proceedings of the 2010 14th
   International Conference on Computer
   Supported Cooperative Work in Design
- 2010

### Was?

Entwicklung einer Methode zur Optimierung des organisationalen Lernens durch Group Storytelling

# Designing Training Content through Group Storytelling

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Abstract— Training is an important attainment for the organizations' continued existence. Despite its relevance, few training related problems are being discussed. In its majority, the traditional training is not adapted to the organizations' real needs; it is not capable to reproduce real cases and problems aligned with the organizations' processes. We present a proposal to design training content based on stories told by professionals within the organization, and therefore, expressing the application of concepts in practice, promoting the organizational learning.

Keywords- Organizational Learning, Training, Storytelling.

#### I. INTRODUCTION

Training is a research object in many science fields, because it is an important activity to the organizations' competitiveness, as well as for the employees' motivation [1, 2]. Training corrects deficiencies and allows the employees to face challenges in the performance of their tasks, and besides

produce narratives to generate training content scenarios aligned with the organization's businesses processes.

#### II. ORGANIZATIONAL TRAINING OVERVIEW

Training is a multifaceted concept, and there are many approaches in the literature. Silveira [5] puts the current training focus in the competences concept, in detriment of the traditional concept of enabling to exercise some position or function in the organization. ABNT NBR ISO 10015 defines training as "the process of developing and providing knowledge, practice and attitudes to attend requirements, and it has the goal of reducing the distance between existing and required competences" [9]. The application of knowledge, practices and attitudes (KPA) is defined as competences [9, 10]. The current training focus is the trinomial KPA, highlighting the performance improvement, or the short term adaptation to tasks or specific functions. The literature cites

## MOTIVATION

Zur Konzeption von individuellem Trainingsmaterial fehlen Personalressourcen und Zeit



E-Learning in Unternehmen bisher selten effizient



Ziel: Zeit- und kostenreduzierende Methode zur Erstellung von individuellem E-Learning-Material durch Group Storytelling

### HERANGEHENSWEISE

Extraktion von Kriterien für erfolgreiches Training aus der wissenschaftlichen Literatur

Table 1. Training characteristics classification		
Regarding	Characteristic	Relevance
Participants	Trainees fitted for the training [11]	Low
	Motivated trainees [20]	Low
Content	Content extracted from the others' experience in the organization [12, 11, 4]	High
	Pre-determined content, according to specific objectives and outcomes, in order to bring value to the business, and Effective benefits, aligned to the business [12,11, 13]	High
	Aligned to the organizational strategic planning, to its objectives and mission [13, 14, 1, 15]	Low
	Focused on skills and competences [11, 16, 13]	High
Form	Attractive and captivating in order to caught the attention [20]	Low
	High quality [11]	Average
Outcomes	Adequate duration time training [11]	Low
	Frequency or reuse impact in the work environment and relevant context [11]	High
	Reuse in others trainees' learning [12, 11, 14]	High
	Story evolution [14, 12]	High

Gandelman et al. 2010

## HERANGEHENSWEISE

Extraktion von Kriterien für erfolgreiches Training aus der wissenschaftlichen Literatur



Entwicklung eines Fragebogens für die Auswahl der Geschichten

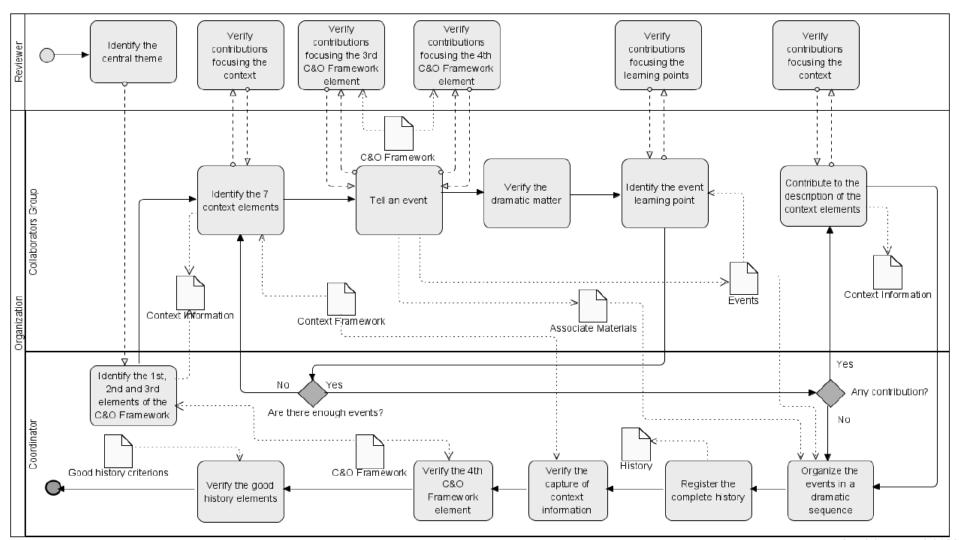


Entwicklung der Methode und Durchführung einer Case Study

With regard to	Question to be made
Content	Which outcomes or specific objectives are going to be delivered by the training?
Content	Which competences are the training focus?
Content	Do the process or the situation portrayed in the
Outcome	story represents a practices' instance from the day by day of the organization?
Outcome	Is the story flexible to allow additions and/or
Outcome	changes?

Gandelman et al. 2010

- Methode zur Generierung von Geschichten für das E-Learning im Unternehmen
- Gruppe von "Experten" erzählt Geschichten über Herausforderungen aus ihrem Arbeitsalltag
- Coordinator und Reviewer wählen Fragemente aus und arrangieren sie in einer dramaturgisch aufgearbeiteten, zusammengefassten Geschichte, die mehrere Handlungsstränge ermöglicht
- Nutzung der Collaborative Software "TellStory" für diesen Prozess (in der Case Study)
- Methode gewährleistet, dass die Geschichte :
  - ,,gut" ist
  - sich für Trainingszwecke eignet
  - den evaluierten Erfolgsfaktoren entspricht
  - Kontextinformationen enthält
  - Lernaspekte enthält



## BEISPIELE



QUEUE BOTTLENECK! SON DIRECT HOUSE THE PERSON Estimated cost = \$2.21 Measured call duration = 7.91 Measured cost = \$2.21 Hey, you do good work. Your ESTIMATED VALUES match the EMPIRICAL DATA you collected beautifully. And you've identified a key PROCESS cont inc BOTTLENECK.

"Office Brawl" Projekt-Management-Training (Spierling 2011)

"Innov8" – IBM Businss Prozess Management (He; Hu 2010)

## ZWISCHENFAZIT

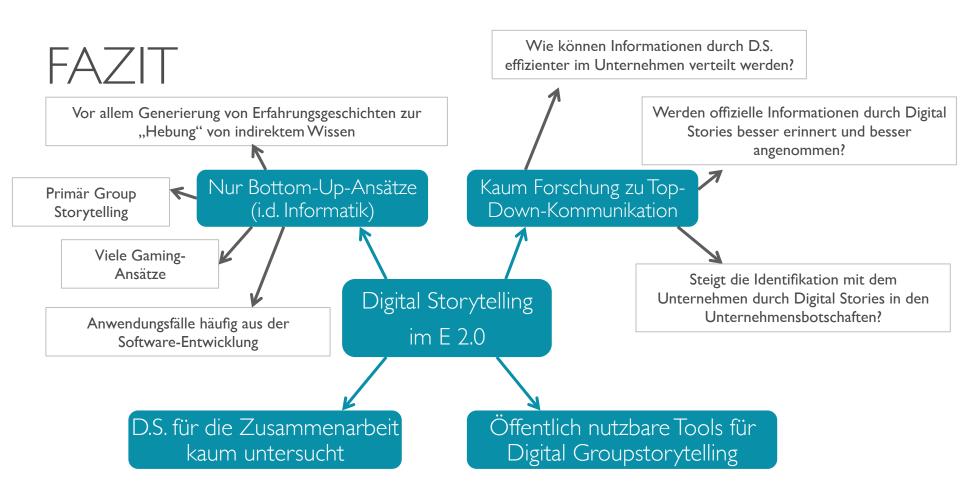
### Die Methode bietet:

- einen digitalen Kollaborationsansatz zur Erstellung von E-Learning Materialien, die an die individuellen Bedürfnisse und Arbeitsprozesse des Unternehmens angepasst sind
- die Weitergabe von Erfahrungswerten zu Schulungszwecken

### Der Methode fehlt:

 die Möglichkeiten Geschichten und Aufgaben zu schaffen, die nur von mehreren Nutzern gemeinsam gelöst werden können

# ZUSAMMENFASSUNG



## **FAZIT**

Digital Storytelling im E 2.0



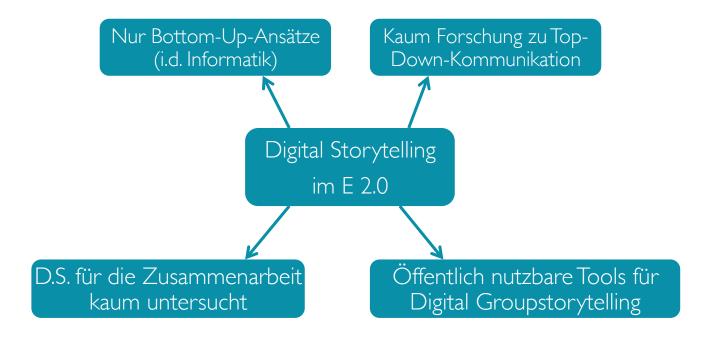
Vor allem Generierung von Erfahrungsgeschichten zur "Hebung" von indirektem Wissen Nur Bottom-Up-Ansätze Primär Group (i.d. Informatik) Storytelling Viele Gaming-Ansätze Digital Storytelling Anwendungsfälle häufig aus der im E 2.0 Software-Entwicklung



## **FAZIT**



## **FAZIT**



### MASTERARBEIT?

- Implementierung eines Group-Storytelling-Ansatzes bei Silpion zum Aufbau einer Projektdatenbank?
- Erstellung einer Digital Storytelling Methode für die Top-Down-Kommunikation?

# DANKE!