Developing a Framework for Analyzing Organizational Stories

Lin-Ping Lee, Hong-Wang Liu, Dong-Min Shi, Christopher S.G. Khoo and Natalie Pang
Wee Kim Wee School of Communication & Information, Nanyang Technological University, Singapore 637718
LEEL0038@e.ntu.edu.sg, {W090008, W090009, assghoo, nlspang}@ntu.edu.sg

ABSTRACT
Stories are becoming an increasingly important knowledge management and knowledge sharing tool to communicate ideas, values and experiences both to internal organizational members and to external stakeholders. This paper reports an initial effort to develop a framework for the analysis of organizational stories. The framework has two major parts: the story framework comprising six elements, and the interaction/communication framework. Eight selected organizational stories were analysed to assess the utility of the framework, inter-coder similarities and differences, and areas that need improvement. Relations between story type, knowledge embodied and story purpose were explored, and recommendations for crafting organizational stories are made.

Keywords: Organisational stories; Storytelling; Knowledge sharing; Framework.

1. INTRODUCTION
Organizational leaders have been using stories to espouse their vision and to promote expected organizational mindsets and behaviors. Richard Branson (2008), CEO of Virgin Group, used stories to communicate Virgin's philosophies about people, innovation, entrepreneurship, leadership and social responsibility. Bill Gates, founder of Microsoft, told stories of how Paul Allen and he made MS-DOS central to the IBM PC in 1980 (Heller, 2001).

Organizational stories can also be everyday stories about the organization told by rank and file organizational members (Buskirk & McGrath, 1992). Organizational stories can be directed at internal organizational members or to external stakeholders. They can be stories crafted by management to gain support for the company's initiatives or communicated to external stakeholders to build a certain image of the organization and its products.

Organizational stories are stories told about some aspect of the organization. They can provide an understanding of the cultural, political and emotional aspects of an organization. Stories transfer tacit knowledge and are often said to generate learning in the organization (Harris & Barnes, 2006).

Given the importance of storytelling as an organizational knowledge transfer mechanism, there is a need to develop a comprehensive and well-grounded framework for analyzing organizational stories to identify their salient characteristics, types of knowledge embodied and their likely effectiveness in achieving their
This paper reports an initial effort to develop an organizational story analysis framework. The framework has two parts: a story framework developed through literature analysis, and an interaction/communication framework based on the work of Livo and Rietz (1986). Using the framework, eight organizational stories were analyzed.

A story is generally defined as a series of related events that happen over time (Sax, 2006). Czarniawska (1998) view stories as narratives that are “temporally sequenced accounts of interrelated events or actions undertaken by characters”. Letiche, Boeschoten and de Jong (2008) suggest that narratives are “socially constitutive and performative.” They contend that narratives do not simply reflect the real state of affairs but also mould, safeguard, enhance, decline and evade social groups. Fryer (2003) has a simpler perspective of stories, defining stories as simply expressing “how and why life changes.” This study focuses on “organizational stories” which we define as a sequence of related events about the organization as a whole, organizational practices and processes, or organizational members.

2. THE STORY ANALYSIS FRAMEWORK

We developed a framework for the analysis of organizational stories through the lens of knowledge transfer. Boje (1991) defines a story as a transfer of experience between two parties. Riding on this element of storytelling, a major component of the framework is the transmittal of a story from a storyteller to the listener. The idea of stories as a knowledge transfer mechanism was held by Benjamin (2006) who defined stories as a way to move knowledge from one party to another and help the audience of the story perceive and establish reality.

The framework aims to achieve the following in terms of its function as an analytical tool:
- Easily understood and easy to apply;
- Can account for different effects of different stories in different situations;
- Can be used to evaluate an organisational story in terms of effective transfer of knowledge, and achieving the aims of the storytelling.

An overview of the framework is given in Figure 1. The framework has two main parts:

1. The Story Framework (the left half of Figure 1)—the main elements of the story and its content, and the organizational context in which the story is told.

2. The Interaction/Communication Framework (the right half of Figure 1)—the interaction between the storyteller and listener(s), and the transmission of knowledge.
2.1 Elements of a Story

We divide the characteristics of a story into six elements:

1. **Background** to the story—the context in the story itself, the prior situation and events leading up to the story.
2. **Core** of the story—the essence or summary of the story, the story in its shortest and simplest form.
3. **Type** of story—the story is classified under a category in a typology.
4. **Structure** of story—how the story is structured in terms of context, build up, climax, action, reversal, resolution and learning.
5. **Knowledge** embedded in the story—the message or knowledge conveyed, the moral of the story.
6. **Function** of the story—the purpose for which the story is told.

Underlying these six elements is the *Organisational Context* in which the story is told. An organisational story is told within a certain context to deliver a message relevant in the context. The message and elements of the story may differ when told in different contexts.

A story may have different versions, with variation in the actors, time and location. However, the cause and sequence of events may be largely unchanged. This allows us to recognize them as different versions of the same story.

### 2.2 Interaction/Communication Framework

The interaction/communication part of the framework was conceptualized from the work of Livo and Rietz (1986). They stated that the interactive nature of the storytelling process is a dynamic that exists between the teller, listener and the story. This results in as many private story negotiations and reconstructions as there are listeners in the audience. The storyteller has his own view of the story told. The listener also has his own view of the story. In the course of storytelling, what the
The interaction process which takes place during storytelling has three types of effects on knowledge transfer. These effects may occur simultaneously or asynchronously:

- Some part of the intended message is **delivered**: the knowledge which the storyteller intends to transmit is successfully absorbed by the listener.
- Some intended message is **undelivered**: part of the knowledge that the storyteller intended to transmit might not be absorbed by the listener due to his being unable to find the meaning in the story.
- Some unintended message is **triggered**: Some knowledge or insight is triggered in the listener, which is not intended by the storyteller. This will vary from listener to listener due to differences in background, motivations and experiences.

### 2.3 Story Analysis Instrument

Based on the story framework’s six elements, a story analysis instrument was constructed (see Table 1). For each element, there is a series of questions to be answered by the analyst. Some elements comprise a set of categories for the analyst to select one. Most of the questions in Table 1 are self-explanatory.

The typology of stories is derived from the work of Simmons (2006) and Neuhauser (1993). Of all the typologies suggested by researchers that we have reviewed, theirs are the most relevant and easy to use. Organizational stories are often told to advocate a point of view which puts the organization in a good light. There is some element of convincing and winning over others which makes the work of Simmons (2006) quite pertinent to our purpose. The “Who I am”, “Why I am here”, “The Vision” and “Values in action” stories are particular relevant for classifying stories that communicate about the organization and what it stands for to external stakeholders. We decided not to adopt the categories of “Teaching” stories as it overlaps with some of Neuhauser’s (1993) categories, while the “I know what you are thinking” stories described by Simmons (2006) is not so much a type of corporate story but a strategy by the storyteller to reach out to hostile listeners by acknowledging their adverse opinion.

Organizational stories are also told to internal employees to inspire them to higher performance, to teach organizational values, norms and expected behaviors and to learn from mistakes and avoid potential disasters. Neuhauser’s (1993) “Hero”, “Survivor”, “Aren’t we great”, “We know the ropes around here” and “Kick in the pants” categories are useful for classifying internal stories. We decided not to adopt “We know the ropes around here” as there is a degree of overlap with the “Aren’t we great” stories, while the “steam valve” stories defined by Neuhauser (1993) appear to serve a carthartic function of helping employees vent repressed negative feelings.

Our story structure elements are adapted from Snowden (2006) and Morgan and Dennehy (1997). Snowden’s (2006) sequence of context, turning point, action, reversal and resolution appears useful for representing dramatic stories. However, organizational stories tend to have a buildup, a climax and should contain a lesson that is the main takeaway of the story. As such, we adopted some elements from Morgan and Dennehy’s (1997) five steps to a story—setting, buildup, climax, learning and how the world changed.
Organizational stories are told to share successful experiences, build culture, pass down history or learn from failure. Thus, our analysis instrument seeks to identify the following kinds of knowledge embodied in stories:

1. **Values**: The attitudes the organization wants its employees to emulate and internalize
2. **Behaviours**: The ways in which the organization wants its employees to act
3. **Norms**: The social rules and standards of the organization
4. **Experiences**: Lessons from past encounters
5. **History**: The facts of the past, and milestones in the organization’s development.

The final part of our story analysis instrument requires the analyst to categorize the stories according to Denning’s (2004) seven functions (purpose/value) of organizational stories. Other typologies were found to be too vague or general for our purpose. Denning’s functions are broad categories compared to the story types defined by Simmons (2006) and Neuhauser (1993). As such, different types of stories may have the same function. For example, stories to spark organizational change might be a “vision” or “kick in the pants” story depending on the content of the story.

### 3. ANALYSIS OF ORGANISATIONAL STORIES

We applied the instrument to analyze eight stories to find out whether the instrument was usable, the difficulties in using it, interpretive differences, and whether it was useful in identifying the type and purpose of the story. Each story was analyzed and coded by two of the authors.

To select the organizational stories for analysis, we sourced for organizational stories in journal articles, books and the internet. We looked for examples of failure stories, success stories and stories that tell of history or origin. The stories could be told from the management’s point of view, from the perspectives of the rank and file organizational members, or from external stakeholders. We selected the stories from books as our first choice as they have more permanence than websites. In terms of story length, we selected organizational stories which are less than 2 pages long (below 1000 words). The stories chosen also reflect different cultural and organizational backgrounds, from small enterprises in The Yemen Story to national enterprises and international organizations such as The World Bank and IBM. Organizational stories are usually told verbally and in snapshots to bring across a point. As such, they should not be too lengthy and take up too much time when they are being told. The eight stories analyzed are summarized in Table 2.

#### 3.1 Interpretive differences – Same story, Different Listeners

Interpretive differences in identifying the story type, knowledge embodied and functions were analysed. They were found for five of the stories:

- **The Yemen story**: The two analysts had different takeaways from the story. One analyst categorised the story as a *survivor* story with *experience* as the knowledge to be transferred, and the function of *sparking organizational change*. The second analyst saw the story as a *hero* story, conveying *values* as knowledge and the function of *transmitting values*.

- **The Zambia story**: One analyst interpreted the story as a *vision* story, which embodies *experience* as knowledge and the function of *creating a future* for the organization. The second analyst viewed the story as a *values in action* story,
carrying values of knowledge sharing as the knowledge to be transferred, and the function of transmitting values.

- The Southwest Airlines story: One analyst interpreted the story as a values in action story, conveying behaviors as knowledge to be transferred and the function of sparking organizational change. The second analyst interpreted the story also as a values in action story but with the purpose of transmitting values.

- The World Bank story: Both analysts agreed that the story is essentially a “Who I am” story. One analyst selected experience as the knowledge to be transferred and the function of sparking organizational change. The second analyst viewed the story as an instance of the author sharing knowledge of the history of how he started knowledge management in the World Bank.

- The Post-it Note story: One analyst interpreted the story as a hero story for the purpose of sharing knowledge of the history of the product. The second analyst interpreted it as a values-in-action story with the purpose of transmitting values.

More in-depth analysis is needed to understand the reasons behind the different interpretations. Our Interaction/Communication Framework suggests that different listeners may interpret the same organizational story differently due to differences in background, experiences, motivation and the listeners' contexts.

Three of the stories had similar interpretations by two analysts. The TDC story was interpreted by both analysts to contain experience as the embodied knowledge and sharing knowledge as the function. The IBM $10M Failure story drew the same interpretations as having values as the embodied knowledge and transmitting values as the function. Similarly, the Global Consulting story was analyzed by both researchers to contain values as the embodied knowledge and to transmit values as the function. To elicit similar interpretations, all three stories had unambiguous statements of the message or take-away.

In the TDC story, the message is stated in the last paragraph which explains the failure of the TDC experience and what the listener is supposed to learn from it. In the IBM $10M story, the message of tolerating employees’ mistakes comes through in the sentence “Tom understood the value of making mistakes and learning from them.” In the Global Consulting story, the message that employees should work together rather than work at cross purposes is succinctly put across in the sentence “It showed to us the power of acting together as a global organization, rather than acting from individual countries' perspectives.”

For stories that were unambiguous in the delivery of their messages, we noted that there was a presence of a sentence or paragraph succinctly stating the message of the story. For other stories, the absence of this element resulted in triggering different interpretations by listeners. The Southwest Airlines and World Bank stories did not have a sentence highlighting the message of the story. For the Yemen story, the message is spread across three paragraphs with a few ideas intertwined. Similarly, the Zambia story engages listeners with multiple messages embedded in different parts of the story. Such narratives may very well be the intention of the story, to trigger different learning points for the listeners. This also validates part of our suggested framework, with the observation that a richer story structure may trigger multiple, rather than deliver a single message to the listener.
3.2 Relationship between Story Type, Knowledge Embodied and Function

Denning (2004) noted that “different narrative objectives had different narrative patterns associated with them”, and that “using the wrong form of story for a particular purpose generally led to an unsuccessful result” (p. xv). We analysed the relation between story type, knowledge embodied and function of the story. Because of the very small sample, we can only offer conjectures to be verified in bigger scale studies.

From our story analyses, we surmise that organizational stories which are meant to transmit values should embody values as the knowledge to be transferred and such stories tell of an organizational member modeling the espoused values in action. This seems obvious and is borne out by three stories—the IBM $10M Failure, Zambia and 3M Post-it Notes stories. However, the Yemen and Global Consulting stories are analyzed to be Hero stories, and Southwest Airlines story convey the values as “Who I am” stories.

Stories with the purpose of sparking organizational change can be values-in-action stories (Southwest Airlines story and IBM failure story), “Who I am” stories (World Bank story) or survivor stories (the Yemen story). Stories to spark organizational change typically contain knowledge as experiences (Yemen story and World Bank story), values (IBM failure story) and behaviors (Southwest Airlines story). Organizational stories which are meant to spark organizational change appear to have a more diverse typology. In crafting organizational stories to spark organizational change, there is more leeway in the type of knowledge to be embodied depending on the change which the storyteller wants to start in the organization.

If the purpose of the organizational story is to share knowledge, the knowledge embodied in the story will be clustered around experiences or history. For example, the TDC story is meant to share the experiences of the organization while both the World Bank story as well as the 3M Post-it Notes story share the history of how something came about in the organization. Such stories could be “Kick in the pants” story to warn of impending disaster or tell of a lesson to be learnt, “Who I am” stories to tell of an important organizational member’s origin or Hero stories to tell of how the organizational pioneers’ efforts set the stage for success in the history of the organization.

3.3 Problems Encountered

In applying the analysis instrument, we found that the Zambia story and the Southwest Airlines story do not fit well into Snowden’s (2006) and Morgan and Dennehy’s (1997) sequence of Context, Buildup, Climax, Action, Reversal, Resolution and Learning. The Zambia story is about how someone logged onto the Web to get information while the Southwest Airlines story is about someone who told a story of how he got his name. The Zambia story has no climax and reversal, and the Southwest Airlines story has no climax, reversal or resolution. Both stories are bland descriptions of a single event and lack the dramatic element of tension/suspense or conflict. Such stories do not fit well in our expected story structure. A different set of structural elements is needed to analyse such stories.

Though the framework is able to identify the salient features of a story and its main message and purpose, it is not yet able to determine what makes a good organisational story. It suggests that stories should fall under a particular type,
embody a certain type of knowledge and have a particular purpose. However, research is needed to identify what makes a good or effective organizational story compared to a less effective one, and how the different elements in the framework contribute to a good story.

The Interaction/Communication Framework needs further fleshing out. It is not clear what factors determine what intended knowledge is delivered and what unintended knowledge is triggered.

4. CONCLUSION AND FUTURE WORK

This paper has proposed a framework to help knowledge management professionals analyze and assess organizational stories. It is beyond scope of the study and this paper to propose criteria to define and evaluate what a good organizational story is. As a framework, it aims instead to identify and analyze the main features of organizational stories.

The application of the framework to some selected organizational stories has yielded the following insights to help knowledge management and storyteller practitioners craft stories according to their needs and determine the types of knowledge that ought to be encapsulated in the stories according to their intended outcomes. In the crafting of organizational stories, the knowledge to be transferred and the type of story to be told is determined to a great extent by the purpose of the story. For stories told to transmit values, the knowledge embodied tends to be also values and they are usually values in action stories that tell of organizational members behaving in ways that actualize these values. These stories can also be told as Hero or “Who I am” stories.

Organizational stories that are meant to spark organizational change have a more diverse typology. They could be values-in-action stories, “Who I am” stories or survivor stories. They should contain experiences, values or behaviors as the knowledge to be transferred. For vision stories which are told to create a future, they should contain an experience and prompt the listener to imagine what it would be like if the organization could get to such an experience. If the purpose of the organizational story is to share knowledge, the knowledge to be embodied in the story should be either experiences or history. The stories are meant to share the experiences of the organization or the history of how something came about in the organization.

It is also recommended that due to differences in background, motivations and experiences on the part of the listener, the organizational story to be crafted should contain a paragraph or sentence that highlights the message to be delivered in a clear and coherent manner.

The same organizational story should be crafted differently if they are to be told in different contexts to different audiences for different purposes. Several versions of the same story can be developed to deliver different messages. Although the gist of the story remains the same, there should be differences in the emphasis of the content and the way the message is couched.

Further research is needed to develop the story framework and analysis instrument in greater depth. In particular, the framework raises the following questions:

- How are different story backgrounds important? Are there additional elements that are important?
• What is the core of a story, and how can this be identified? We expect the story core to be a graded concept, i.e. some details of a story will be more core than others. We are carrying out a study to identify the core aspects of sample stories through user recall and recognition. We are also analyzing different versions of the same story to identify the core aspects.

• In the analysis instrument, we have listed the types of stories, elements of story structure, types of knowledge embodied and types of functions. However, it is not known how complete the categories are, and whether the listed categories are a good way to identify similar and different kinds of organizational stories.

Future work can also examine the effect of stories delivered through different media and communication channels. A story delivered in verbal, written and video form may elicit different interpretations and have different impact.

REFERENCES


TABLES

Table 1. The organisational story analysis instrument

1. **Background** to the story (Answer the following questions)
   - Organizational background: What is the type/industry/size of company?
   - Event trigger: What happened to trigger the event
   - Internal or external: Is the story targeted towards internal employees or external stakeholders?
   - Intention of the teller: What is the storyteller trying to convey? Why is he telling this story?
   - First person or third person: Is the story told from a first person or third person perspective?

2. **Core** of the story (Answer the following questions)
   - *A summary of the story in its simplest form – the essence of the story*
     - Actors: Who are involved in the story?
     - Time: When did the story occur?
     - Location: Where did the events take place?
     - Event: What happened in the story?
     - Sequence: How did events in the story unfold?
     - Cause: Why did the events happen?

3. **Type** of story (Select a category)
   - Who I am story (helps the audience to perceive the storyteller in the light that the storyteller wants to be perceived.)
   - Why I am here story (supplies credible reasons for the storyteller’s positive motives.)
   - The Vision story (explains what the audience can get out of the storyteller’s agenda and why they should allow his lead.)
   - Values in action story (supplies instances to encourage internalization of desired values)
   - Hero story (portrays organizational members who have displayed exemplary conduct and achieved exceptional performance.)
   - Survivor story (regale listeners with how organizational members turn round a disastrous situation and set things back to normal.)
   - Aren’t we great stories (showcase organizational achievements)
   - We know the ropes around here stories (tell stories of how organizational members do things to achieve exceptional performance.)
   - Kick in the pants stories (is used to provide early warning of potential disaster.)

4. **Structure** (sections) of the story (Answer the following questions)
   - Context – In what situation did the story take place?
   - Build up – What happened to lead up to the story?
Climax – What was the high point of the story?
Action – What did the characters in the story do?
Reversal – How did the situation change for the better or worse?
Resolution – How was the situation resolved?
Learning – What is the learning point of the story?

5. Knowledge embodied in the story (Select a category)
- Values (The attitudes the organization wants its employees to emulate and internalize)
- Behaviours (The ways in which the organization wants its employees to act)
- Norms (Social rules and standards of the organization)
- Experiences (Encounters in the past)
- History (The facts of the past)

6. Function (purpose/value) of the story (Select a category)
- Spark organizational change.
- Build trust
- Get individuals to work together.
- Transmit values
- Tame the grapevine
- Share knowledge
- Create a future

Table 2. Summary of organizational stories used in this study

**The TDC Story** (Source: Fog, Budtz & Yakaboylu, 2005)
Denmark’s largest mobile phone operator, TDC Mobile tried to introduce the company’s new name: VIC to its customers. The campaign was launched with a story that succeeded in creating curiosity. Unfortunately, it stopped there. The story had not been integrated into the long-term branding platform. People were confused. TDC’s attempt to create added value and build an emotional bond with customers that could differentiate the VIC brand from other mobile phone operators on the market, had failed. TDC Mobile soon afterwards, dropped any further work with the VIC name.

**The IBM $10M failure Story** (Source: http://changingminds.org/disciplines/storytelling/organizations/failure_stories.htm)
A senior employee of IBM made a $10M error. He was hauled up before the big boss where he expected to be sacked. Pre-empting this, he apologized and offered his resignation. Refusing the resignation, the boss said he couldn’t lose him now, because the company just spent $10M on his education.

**The Yemen Story** (Source: Denning, 2001)
A member of a task team was working with a client in Yemen on an education project and was coming to the end of its visit. The client asked for urgent advice which he was unable to provide. The team was unable to provide that advice so it contacted the Help Desk of the Education Sector. The Help Desk got in touch with their CoP. The CoP realized similar work had been done in Kenya. Results of the work in Kenya were faxed to Yemen. The team in Yemen was able to advise their client in 48 hours.

**The Zambia Story** (Source: Denning, 2001)
A health worker in Zambia is trying to alleviate malaria. He does not know how to treat malaria. He found the answer by logging onto the Centre for Disease Control Website.

The Southwest Airlines Story (Source: Denning, 2005)

A flight steward of Southwest Airlines tried to make the flight fun for the passengers. He introduced himself: “Hello. This is Bingo and I’ll be your flight steward on today’s flight from Baltimore to Orlando. Some of you might be wondering why I’m called Bingo. Simple! You see that’s the name my parents gave me. Why? Well, I was the fifth child in my family. My parents desperately wanted to have a boy and their first four children were girls. So when I showed up after four girls, it was quite natural for them to shout, Bingo! So that’s what my name is."

The Global Consulting Story (Source: Denning, 2005)

James Truscott, who works for a Global Consulting firm in London, his company was bidding for a large consulting engagement for one of the biggest industrial firms in UK-British Engines. Their competitor tried to undercut them with a lower price. James went back to British Engines with a team of experts, showed the customer the true value they could provide and explained why their price may be more expensive but their client would be getting a better deal. The client accepted their explanation. They finally won the bid.

The World Bank Story (Source: Denning, 2005)

The World Bank was facing strong competition from private banks. At the same time, Denning was not doing well in his career and senior management told him to look at information. Denning thought of selling expertise of the World Bank but he was not getting much support from some of his colleagues initially. He started to find a way how he was going to persuade this organization to change. He finally got the support he needed when he explained Knowledge Management through the use of stories. The World Bank was doing well as a lending organization and Denning wanted to move the World Bank to a new line of business that deals with knowledge.

3M Post-it Notes (Source: http://inventors.about.com/od/pstartinventions/a/post_it_note.htm)

Spencer Silver invented an adhesive in 1968 but it was rejected by 3M. 5 years later, Art Fry attended one of Spencer Silver’s seminars and used the adhesive on Post-it notes. Art Fry found the Post-it notes useful as ‘reusable bookmarks’ in his hymnal. He sees the potential of the Post-it notes in being a viable product. Art Fry tries to win support from 3M for the Post-it notes. Art Fry’s superiors were initially worried that consumers would consider Post-it notes to be wasteful, but they eventually gave it their support after samples of the product distributed to 3M employees proved wildly popular. Post-it notes were introduced across the country in 1980 and proved to be a worldwide success less than 2 years later.

ABOUT THE AUTHORS

Lee Lin Ping obtained his MSc in Knowledge Management from the Nanyang Technological University in 2011, and a Bachelor of Business Administration from the National University of Singapore in 2002. He is currently working in the Organisation Development Division of the Ministry of Education, Singapore. His current work responsibilities include facilitating and implementing Organisation Excellence and Enterprise Risk Management frameworks, tools and processes. Prior to this, he worked as a Chinese language teacher and Subject Head for data management in a primary school.
Hong-Wang Liu obtained his MSc in Knowledge Management from the Nanyang Technological University in 2011, and his Bachelor's in Applied Information Technology from the University of Newcastle, Australia, in 2006. He is currently working in Multi-fineline Electronix Singapore as a senior IT engineer dealing with IT infrastructure services and IT project management. Prior to this, he worked as an IT professional in various domains (such as semiconductor and system integration) in both technical roles (IT infrastructure support, programming and data analysis) and project management.

Dong-Min Shi obtained his MSc in Knowledge Management from the Nanyang Technological University in 2011.

Christopher Khoo is an associate professor and former head of the Division of Information Studies at Nanyang Technological University, Wee Kim Wee School of Communication and Information, Singapore. He teaches courses in knowledge organization, information behavior, and data mining. He obtained his PhD at Syracuse University and his MSc in Library & Information Science at the University of Illinois, Urbana-Champaign. He has also worked for several years as a science reference librarian, cataloger and online information searcher at the National University of Singapore Libraries. His main research interests are in text mining (information extraction, text summarization and sentiment analysis), medical decision support system, knowledge organization, and human categorization behavior.

Natalie Pang is an Assistant Professor with the Wee Kim Wee School of Communication and Information at Nanyang Technological University, Singapore. Her research interests are: information behaviour and collective action in the new media environment, social media and the knowledge commons, pragmatist information systems and social media innovations for marginalised communities. She has taught courses on social informatics, information behaviour, organisational records management, information literacy, qualitative research methods, and heritage informatics.