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# Who Says Personas Can't Dance? The Use Of Comic Strips To Design Information Security Personas

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**Abstract**

This paper presents comic strips as an approach to align personas and narrative scenarios; the resulting visual artifact was tested with information security practitioners, who often struggle with wider engagement. It offers ways in which different professional roles can work together to share understanding of complex topics such as information security. It also offers user-centered design practitioners a way to reflect on, and participate with, user research data.

**Author Keywords**

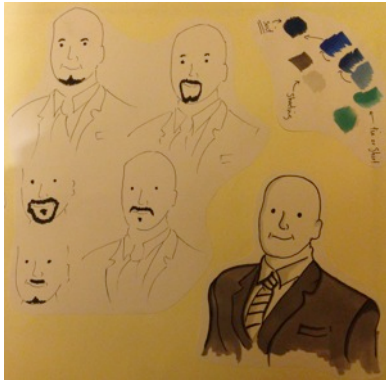
User-centered design, UCD, personas, narrative scenarios, storytelling, comic strips, empathy.

**ACM Classification Keywords**

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

**Introduction**

It is often the case that the use of personas is criticized for being superficial and one-dimensional [1]. Yet the persona is sometimes a useful means for encouraging



**Figure 1.** InfoSec community characters based on participant' observations during interviews and feedback sessions. (Top Image) sketches (Bottom Image) initial digital art.

reflection and empathy towards another person's position [2,3,4,5]. Personas offer a means of collecting and displaying multiple perspectives but their power is limited unless they can be situated within rich contexts and can be designed in such a way that they can be brought to life so that researchers and professional roles (viewers) can explore together how situations appear and feel from different perspectives. For some professional roles, which find it hard to empathize with another user's perspective, tool support is needed to gain a better insight into the multi-perspectival aspects of technology use. One example of such a user community that finds it hard to relate to the views and practices of other professional roles is the one that designs and evaluates information security (InfoSec). This paper presents the methods used to develop a current experience comic strip, an instrument that supports improved communication and aligns personas and narrative scenarios, for use by InfoSec practitioners.

## Background

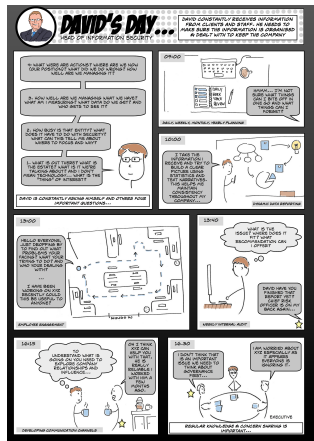
### *Persona*

The research began by exploring two popular User-Centered Design (UCD) techniques, personas and narrative scenarios, that can be used to better understand security practitioners at work [1]. A persona, or user archetype, represents a pattern of user behaviors, goals and motives, compiled in a fictional description of a single individual [6,7]. Personas help to define the product by replacing the abstract elastic user with the vibrant presence of a specific user who becomes a part of UCD [6,8,9]. The persona has since been developed and extended by, for example, [10] who stated that personas should be based on sound user research, specifically interviews

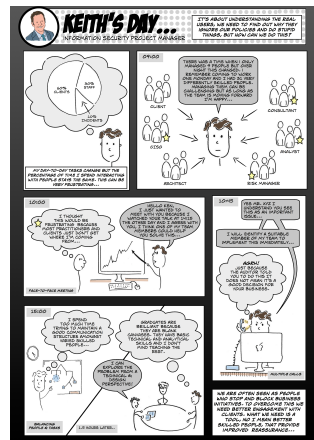
and observations that focus on representative users using qualitative and quantitative methods. Principally personas allow UCD practitioners to distill user data to the viewer in a simple and accessible manner [11]. They are beneficial as they encourage user empathy, communicate information quickly and stick with the viewer throughout the course of UCD, especially in situations where user involvement is not feasible. The value and validity of personas are often criticized, [1] identified that personas are often designed by committee with little regard for real data, and are difficult to communicate because they often consist of a resume-like text document. There are many examples where personas were successfully used in a design process: [11] showed that personas positively contributed to the conceptualization of a user interface of a TV system for older adults with chronic conditions, and [7] showed personas were successfully used to identify archetypical visitors of two different museums to better understand their needs.

### *Narrative Scenarios*

Scenarios are stories that present an entire task in narrative format. They consider context and other environmental information to help make sure the proposed task makes sense when seen from the viewpoint of the persona [6,12,13]. Scenarios can be formal, semi-formal, or informal notation. An informal scenario is a story, also referred to as a narrative scenario, which further envisions the user task [12]. Scenarios that integrate stories, stylized in natural language, allow UCD practitioners to enhance user attention and engagement, memory and organization of detailed user research data. However, like personas, narrative scenarios are difficult to engage and empathize with because they are often presented as



**Figure 2a.** David Spark, head of information security current experience comic strip



**Figure 2b.** Keith Tomb, information security project manager current experience comic strip

text documents that are not directly linked to user data. Furthermore narrative scenarios are restricted to specific user tasks or system or website performance [13]. Still narrative scenarios are most effective when positioned in conjunction with personas due to their shared attributes. [10] promote this positioning arguing that [narrative] scenarios are less effective when not developed with personas in mind due to the fact that (a) they contain little data about the users; (b) may include unrealistic assumptions about users tasks; and (c) can be difficult to reconstruct and hard to extend with confidence. Thus personas are often used to enhance their engagement and reality [2,6]. Therefore we developed a data-driven storytelling method that used visual narratives to make the storytelling more accessible and experiential. We present an initial version of this method in this paper and work in progress with this method amongst the InfoSec practitioner community.

*Comic Strips*

Comics began life in the second half of the twentieth century and are used in many professional areas for visually disseminating information e.g. by writers, designers and more recently UCD practitioners [13,14,15,16]. Comics differ from cartoons, illustrations, or other pictorial narratives since they are single-panel images. Whilst these alternatives often involve similar visual-verbal information, comics depict an increased level of detail such as objects and actors that might be present in a particular panel (photo-realism), integration of verbal content (text bubbles or taglines), inclusion of characters and emotions, and a portrayal of time [13,14,15,16,17]. Additionally, unlike narrative scenarios, comics present a less biased visual depiction of the user task. There are many formats for

comics and this paper spotlights comic strips. Comic strips use accessible and concise language that is easy to interpret by the viewer and are also remarkably rich and expressive whilst having a very standardized structure [15]. Within UCD, comics are often used to envision how an application feature could work or to generate problem or interaction design scenarios [16].

This paper presents current experience comic strips as a novel way for viewers to better empathize with another user's perspective.

**Current experience comic strips**

*Motivation*

Initial observational work of InfoSec practitioners has established that comic strips are a relatable visual form that enables storytelling. For example [18], [19] and [20] are comic strips that InfoSec practitioners view and share and often incorporate as part of their identity. The purpose of this research is to move to a collaborative visual form where InfoSec practitioners could create their own comic strips and encourage other groups to do the same therefore enabling storytelling within organizations.

*Exploratory interviews*

Our initial current experience comic strips (CECS) were developed in our research that aims to develop a tool for use by InfoSec practitioners to better understand other user communities and their security practices.

To do this, 21 interviews with InfoSec practitioners were carried out and the following questions were asked: What is your role? How influential are you within your organization? What are your daily activities? Who are the key people you are regularly in contact with and

### What are your daily activities?

"Tomorrow if I turn up mostly is going to be progressing on some of the improvement initiatives that we are trying to do and most of my time goes into having communication with senior stakeholders and guiding them also giving them a business centric view of the technology risk landscape based on the reports that we create ... a simple example of this would be there are vulnerability scanning tools that are also telling us that we have vulnerabilities and what they really mean to the business ... a lot of time I am facing CISOs [chief InfoSec officers] trying to explain to them what this means in real tangible technology risk terms and so that they don't spend money ... this feeds into their decision making process" – InfoSec consultant.

how do they impact your job? How important is the InfoSec community to you? What are your key InfoSec concerns? The interviews were transcribed verbatim and transcripts were subjected to [21]; the analysis was supported by [Atlas.Ti] software where 397 quotations were identified and associated with 61 categories. The categories alongside the quotations were separated into nine InfoSec practitioner roles (users).

From these interviews we learned that InfoSec practitioners value the challenge of their work and the complexity of the topic. This is reflected in the fact that the language InfoSec practitioners use is highly technical and difficult for non- InfoSec practitioners to follow. The term "information security" was described in many different ways showing that InfoSec practitioners have a varied interpretation of their role and value to an organisation. At the same time InfoSec practitioners often desire to build empathy skills and this perhaps reflects a deficiency in communication skills and wider engagement skills driven by the language used and the value placed on the complexity of the topic.

#### *Ken Wayne: InfoSec consultant persona*

Nine personas were developed that represented the InfoSec practitioner roles. This section illustrates the process followed by describing Ken Wayne's persona. Ken Wayne is based on three interviews with participants that identified themselves as InfoSec consultants. Similar to [1,6,9,10,11,21] development and validation, figure 3 shows the persona template that includes a fictitious picture [Figure 1] and name followed by the persona attributes, goals and motivation that is presented to the viewer as a persona card. The persona introduces the viewer to the key

features of the InfoSec consultant's personality.



**Figure 3.** Ken Wayne, InfoSec consultant persona card.

#### *Ken Wayne: InfoSec consultant narrative scenario*

Nine narrative scenarios were then developed that summarized the daily activities and interactions of each persona. During the interviews the InfoSec consultants were asked to describe their daily activities, the people they interacted with and their InfoSec concerns [Page 4 Sidebar]. As a result (similarly to [10,12,13]) a narrative scenario that represented the InfoSec consultant persona was developed.

#### *Ken Wayne: InfoSec consultant comic strip*

Nine CECS were then developed, whilst considering [16], that represented the daily activities and interactions of each persona. This section illustrates the process followed by describing the development of Ken Wayne's CECS:

1. The persona, narrative scenario and participant's interview responses were further explored to establish an overarching message.

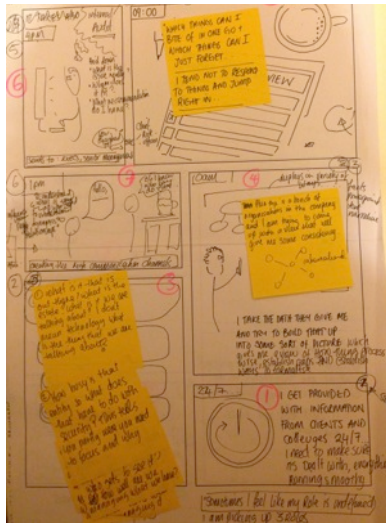


Figure 4. Frame sketches using paper, post-it notes and pen.

- Multiple draft sketches were created that depicted the InfoSec consultant story [Figure 4].
- Once completed the sketches were narrowed down and pieced together to form a CECS.
- Graphic software [Gimp.org] was used to create frames and [Comic Life 2] was used to add text and layout the CECS [Figure 2ab and 5a]. The comic strip style was influenced by [13,17,22] due to viewer simplicity and recent appeal to UCD practitioners [13] [Figure 5b].

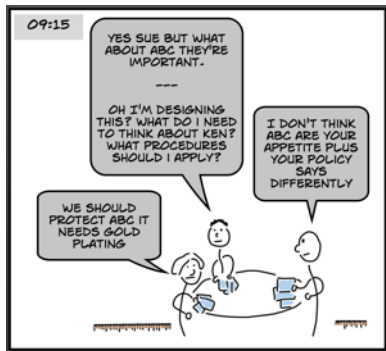


Figure 5b. Frame depicting a frequent client-side misunderstanding observed by InfoSec consultants.

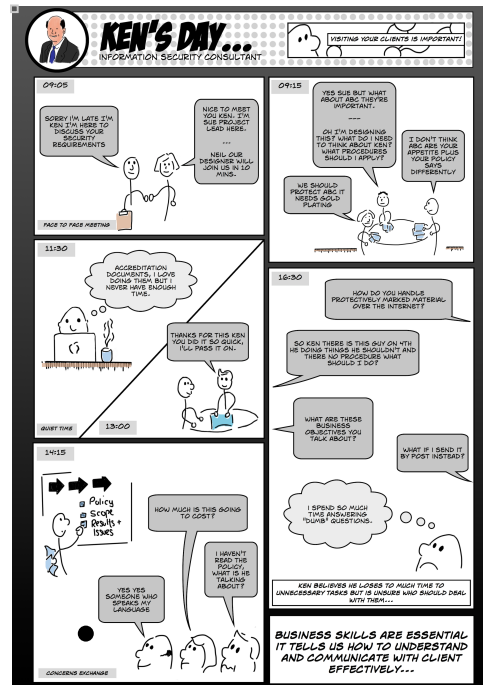


Figure 5a. Ken Wayne, information security consultant current experience comic strip.

**Work in progress**

The CECS are undergoing evaluation with the InfoSec community. Nine feedback sessions with individuals representing each InfoSec practitioner role are ongoing. The participants are asked about the relevance and accuracy of the CECS. They are also given the opportunity to make changes. Initial findings indicate that this is a form that security practitioners can imagine using in security training and awareness programmes, in enterprise modeling where it is important to understand the operational context of different professional roles and in planning exercises where it is important to think about the professional roles needed for a particular task.

Furthermore, where previously UCD practitioners have struggled to engage with InfoSec practitioners, the CECS have allowed for better viewer engagement specifically allowing InfoSec practitioners to better empathize with another user's perspective [Page 6 side bar]. We believe on completion of this research the CECS will enable UCD practitioners to better engage with the InfoSec community to provoke discussion on feelings about the field and the role they play.

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□ **Feedback session participant viewing Ken Wayne CECS**

“This is interesting I could plot where people are like [Company Name] consultant I can see his relationship with everyone who he talks do during the day and where ... It tells me what his interests are, what his background is, who he is communicating with what he believes security is ... I kind of know him now ... this is very interesting maybe it could be good for [Company Name] department awareness, so many people here just don't know what I do or the person who sits next to me does.”

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