Cloud Drops

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ABSTRACT

Cloud Drops is a pervasive awareness platform that integrates virtual information from the web more closely with the contextually rich physical spaces in which we live and work .Cloud drops consists of many interactive stamp sized displays, each showing a tiny bit of digital information .The large number of displays and their small size allows the user to flexibly instrument, orchestrate and reconfigure the personal information environment. They show different form factors for stamp sized displays, provide a device concept and a fast implementation.

I. INTRODUCTION

People intensively use physical space for accessing and remembering   paper bound information. Transforming large parts of   the formally physical information environment into the digital realm has its obvious advantages that cannot be underestimated, but this also comes at a cost: we are giving up the notion of having an information item at a meaningful place and of using our entire surroundings for managing information. Recent advances in pervasive display technologies enable high resolution yet tiny, stamp sized touch displays that include processing power and networking capabilities. These self contained devices are capable of displaying tiny information bits while being tangible and highly mobile, such that they can be situated at virtually any location. This opens up a physical design flexibility for awareness systems, which largely overcomes the possibilities of using a handled device or a static installation. The end user can flexibly arrange the set of stamp sized displays, locate them at meaningful places and thereby easily instrument, orchestrate and reconfigure his or her personal information environment, to stay aware of digital information. However, making use of such tiny displays for awareness applications poses various challenges.

This includes questions of how the content should be mapped to displays, how it should be visualized on the tiny displays, and how the user can interact with the content .It is also unclear how several displays can be used in concert and how displays can be combined with the physical aircrafts to support situated awareness .We address these challenges and contribute cloud drops , an interactive awareness platform that consists of many stamp sized displays, which provide awareness of websites, contacts and places. The end user can scatter throughout the architectural space, to ensure each piece of information is available at a meaningful physical location.

Each display represents one user   defined digital entity: a web page, contact or place. In addition they provide lightweight interactions.

II. PROPOSED SYSTEM

The proposed system provides different form factors based on six dimensional holistic view on the platform:

*Stamp sized pervasive displays , provide a device concept and a first implementation.

* Provide visualizations   and interactions for web pages and web applications that are tailored to the tiny display size. It also shows how cloud drops can support synchronous and asynchronous communication with remote persons.

* Show concepts for associating digital contents.

*Demonstrate rich possibilities the platform is enabling by showing a set of activities and applications.

III. DESIGN CONSIDERATIONS

✓ The design of an awareness platform consisting of stamp sized displays that are situated in architectural space offers degrees of freedom in various dimensions. In this section it provides an overview of the main design dimensions, which are used as the foundation for the cloud drops platform.

✓ Cloud drops come in variety of shapes and sizes. The size of the display results as a trade-off between mobility and the amount of content that needs to be displayed.

✓ Custom shapes for cloud drops allow for novel affordances but also can provide a symbolic meaning.

✓ Cloud drops represents dynamic digital content such as websites, documents or contacts. Thereby each individual content is represented as a separate cloud drop.

✓ This allows   the user to flexible attach each item on a physical place. In other direction it makes a physical place accessible remotely to provide situated messaging and communication.

The three ways in which cloud drops can be associated with content is as follows:

1. Content from a nearby device with a larger screen is associated with a cloud drop by using a simple gesture.
2. The cloud drop recognizes the object or surface it is attached to and displays dynamic situated information related to this object or surface.
3. Content is defined by one or more cloud drop in the proximity, which together form a group.

The concept of cloud drops can work in two prototype versions. Each emphasizes different aspects of the concept of a cloud drop. In order to visualize and interact with the information from the cloud, a cloud drop contains a small touch sensitive display. The display is big enough to show a small piece of information, which can be consumed at a glance

IV. IMPLEMENTATION

In prototypical implementation, each cloud drop has a full color touch sensitive screen with a diagonal of 1.5 inches and a resolution of 160x160px. It features a 600Mhz processor, a built in accelerometer and WIFI connectivity and an RFID tag attached. All cloud drops are connected to a central server. Other computing devices recognize a nearby cloud drop using an RFID reader. This implementation is compatible with standard web protocols and major application platforms and cloud drops can display and interact back with the content from web pages, gmail , skype etc.

V. CONCLUSION

It provides a platform for situated awareness of and interacting with web based information. This shows that by scattering cloud drops throughout the architectural space, people design a highly personalized and highly localized physical/digital information environment that supports awareness of persons, websites and applications as well as interpersonal communication. Future work should be examined in more detail that how people use tiny displays in architectural space over extended periods of time.

VI. REFERENCES

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