Research Proposal

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Background

Many data vendors and financial service suppliers extract information from authorised sources of real-time data. It is common to display this data in terms of simple figures, charts, or tickers[1] and to navigate via symbol lookup.

Research Summary

The purpose of this study is to determine the usefulness of the approaches above, suggest alternatives, and provide appraisal of these alternatives.

Literature Review

According to the National Association of Securities Dealers, the first widely used technology was the ticker tape in 1867. The ticker could disseminate price data across long distances, but not all traders saw the same prices reported at the same time. It took almost 100 years for the electronic quote board to debut in 1966.

Interestingly, no alternatives have replaced the ticker for 136 years. In fact, it appears to have been considered the only option so we possibly just blindly accept what we are already accustomed to.

Specific Research Objectives

- Evaluate the conventional ways of presenting and interacting with financial data.
- Suggest and implement modified ways of interaction with financial data, e.g. diversion of user's attention to more relevant figures such as high volume trade and volatile share values.
- Investigate the potential advantages of the proposed alternatives.

Research Methods

This project will use a deductive approach to building the theory. Data collection will rely on observation of a sample of people who are an independent variable.[2]

The observed process is that of the people working with the traditional systems and its aim is to derive a measure of time and productivity. Discovering the correlation between these two dependent variables and the effect of several different user interfaces and/or interactions on the observed individuals will complete the first phase of the project.

The basic hypothesis is that better HCI approaches may not yet be in use. The implementation phase of this project, which should occupy the largest proportion of the time, attempts to practically prove this. An OO computer language will be used to construct an innovative user interface that will be operated by alternative means of interaction e.g. media cubes.

Once one or more desirable alternatives have been constructed, the procedures of system evaluation, as defined before, will be applied to the new system.

Finally, comparison between the various systems can take place and conclusions on users' performance with respect to the used system used will be drawn.

[1] Dynamic repetitive display of figures.

[2] One could argue that people depend on one another and the environment.

Contribution of Research

- Providing concrete proof that some alternative interfaces:
  - may save time and effort.
  - can point users at more relevant figures.
  - are more appropriately customised to their users.
- Showing that some interaction devices will be more suitable than others in the context of financial data.
- Definition and construction of new ways of viewing and interacting with financial data. These should offer convenience, simplicity and higher usability.

Commercial interest and extensive past research in this field are highly likely to decrease the impact of this project. I am therefore aware of the possible need to readjust my research plan.

Experience and Skills

I am coming from a background of software engineering with some practical work experience in software development and data presentation.

My professional interests include graphical user interfaces, computer graphics, OO programming and global economy.