Abstract

The cyberspace has given rise to phenomenal growth in software applications, both in terms of breadth and depth. The Internet transcends national and geographical boundaries and has brought about unprecedented opportunities for software deployment to satisfy the application needs of all walks of life. The spectrum of hardware on which such software runs can range from intelligent, web-enabled devices with extremely user-friendly interfaces, to enterprise storage servers for the formal archival of electronic records which are required to carry evidential weight for use in court cases.

The classical approaches to the systems development life cycle, from inception, schematic design, to formal structured analysis, design and testing, have met some paradoxical challenges. On the one hand, the increasing speed with which applications, or components thereof, are expected to reach the users calls for highly compressed development timeframes. On the other hand, the increasing complexity of software testing, deployment, performance monitoring and tuning, is calling for renewed attention and action under very demanding schedules and operational environments. To put this into perspective, the aspects of software testing and quality assurance that need to be gone through before applications are deployed to a popular web site with literally millions of page visits and transactions a day require extremely well planned and managed techniques and processes.

The Government of the Hong Kong Special Administrative Region (HKSAR) is a major user and developer of information technology (IT) systems. The wider adoption of IT in the community is also one of its major policy objectives. To create an environment conducive to electronic commerce, the HKSAR Government places great emphasis on the principles and practices of software quality. This is manifested in our systems development standards and methodologies, covering aspects like formal development methods, metrics and measurement, establishment of a formal quality management framework, process assessment and certification. The open platform on which most new applications will run also means that the need for IT applications software to cater for information security requirements and threats is getting ever more so important. In the move towards adoption of electronic service delivery as the emerging, mainstream mode of IT applications development, we are mindful of the need for sound, engineering principles necessary in the development of quality systems. We believe this is one of the critical success factors in instilling public confidence in the quality of government IT applications to come. It will also ensure that our systems achieve the needed level of agility and maintainability in response to the ever-changing business needs.