

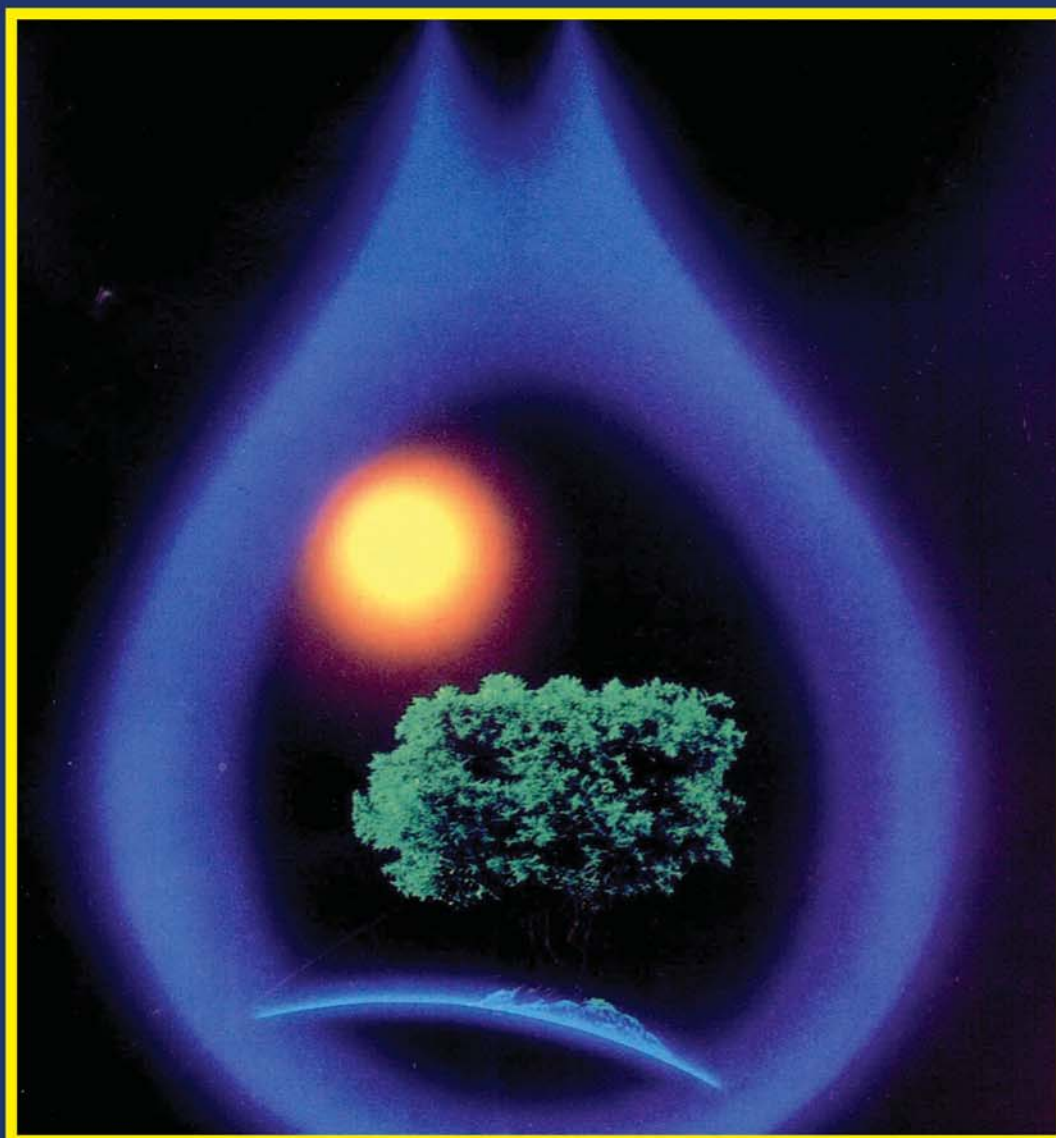


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A Modern Approach in Quality Management

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Abstract

Many organisations now have to operate in highly uncertain environments. Global competition drives organizations to reduce their capital employed and cut costs through lean manufacturing, outsourcing and extended supply or to grow by entering new markets, introducing new technologies, building unique alliances. And all this is happening at a much faster speed than even ten years ago. On a journey towards excellence, learning from past performance is always beneficial. However the applicability of the learning rapidly diminishes in a continuously structurally changing environment. One key (implicit) assumption of the theories and practices of TQM and Business Excellence is that the business environment is relatively stable and predictable. However, this is no longer the case and therefore we must also accept that much of our current theory and practice is no longer as effective as in the past. In particular, we need to develop a strategic and practical approach to sustaining Business Excellence to support executives and their organisations that face uncertainty and instability in their particular market environments. Our approach is an application of well-tested theories of complexity analysis using Simons' Four Levers of Control model. It analyses all the organization's systems and structures which might be driving the behaviour of the people involved and examines the degree to which these systems and structures support or undermine efforts to maintain business excellence. It then considers how this situation can best be managed now; what needs to be changed in which direction in the future; and how and when this can best be achieved, given the operating environment of the company. We have found that crucial processes in an uncertain environment have to be managed through the use of all four levers of control according to Simon's model, however, the interactive control mechanisms are becoming more important. Quality Management approaches should therefore cover not only the tools and instruments to measure and control performances in order to find deviations from the goals, but should also include methods to stimulate and improve the more interactive management activities in order to be able to cope with the uncertain environments.

Keywords: Management Control, Uncertainty, Simon's Levers of Control, Quality Management

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Qualification of Concrete Durability under Different Aggressive Environments with Optimized Accelerated Test Plan

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Abstract

La fabrication du béton dans le domaine de la construction respecte des spécifications prescriptives. En Europe, c'est la norme EN 206 qui est la référence pour la production du béton. Cependant, avec l'innovation, l'exigence d'une durabilité supérieure à 100 ans pour les nouvelles structures et les contraintes liées au respect de l'environnement, il devient de plus en plus difficile d'utiliser les seules spécifications prescriptives pour justifier la fabrication du béton. En effet, les normes existantes, limitent la durabilité du béton et sa composition. Pour compléter les spécifications prescriptives, une approche alternative basée sur la performance est proposée. Cette approche se concentre sur l'évaluation des indicateurs de durabilité au moyen de tests de performance. Un nouveau béton est ainsi qualifié si sa durabilité est au moins égale à celle du béton qui respecte les spécifications prescriptives de la norme. Les tests de performance représentent un coût économique pour l'industrie du béton qui cherche une solution pour le réduire et en même temps garantir la robustesse du processus de qualification de la nouvelle formule de béton. Une solution consiste à réduire la durée des tests et à contrôler le nombre d'échantillons pour les tests de durabilité. Ainsi, avec un plan d'essais accélérés optimisé, il est possible de caractériser la durabilité du béton en utilisant les processus de dégradation. Le plan d'essais optimisé donne le temps optimal et le nombre minimum d'essais permettant de prédire de la durabilité du béton.

Keywords: durability, performantial approach, reference concrete, concrete to be qualified, optimization, degradation process, accelerated tests, test plan

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Virtual Prototyping and Accelerated Testing Techniques

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Abstract

Virtual prototyping (VP) technique has been studied and implemented in recent years in engineering design. Reliability tests are often indispensable. The material properties, needed in design, can only sometimes be found in data sheets. If they are not available, they must be obtained by testing. Accelerated testing techniques are a powerful tool for electronic-systems designers to improve electronic-design reliability.

Keywords: virtual prototyping, bathtub curve, failure rate, infant mortality, wear out, fewer customer returns

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SSL Digital Certificates Analysis

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Abstract

The explosive development of Internet services has led to the appearance of security threats regarding transmitted or stored data privacy. A powerful solution for the authentication of Web servers is the SSL digital certificates, a collection of data through a recognized Certificate Authority attests an entity's identity on the Internet and confirms its public key, used to encrypt communications between the client (Web browser) and that server providing a certain Web service. This paper discusses the concepts of digital signature and digital certificate, making an incursion in the field of SSL digital certificates for Web servers.

Keywords: digital signature, digital certificate, SSL digital certificate, Certificate Authority, public key encryption

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2018 Paris Motor Show: New Trends in Car Industry

Today's economies are dramatically changing, triggered by development in emerging markets, the accelerated rise of new technologies, sustainability policies, and changing consumer preferences around ownership. Digitization, increasing automation, and new business models have revolutionized several industries, including the automotive one. Consequently, one can mention four disruptive technology-driven trends in the automotive sector: diverse mobility, autonomous driving, electrification, and connectivity.

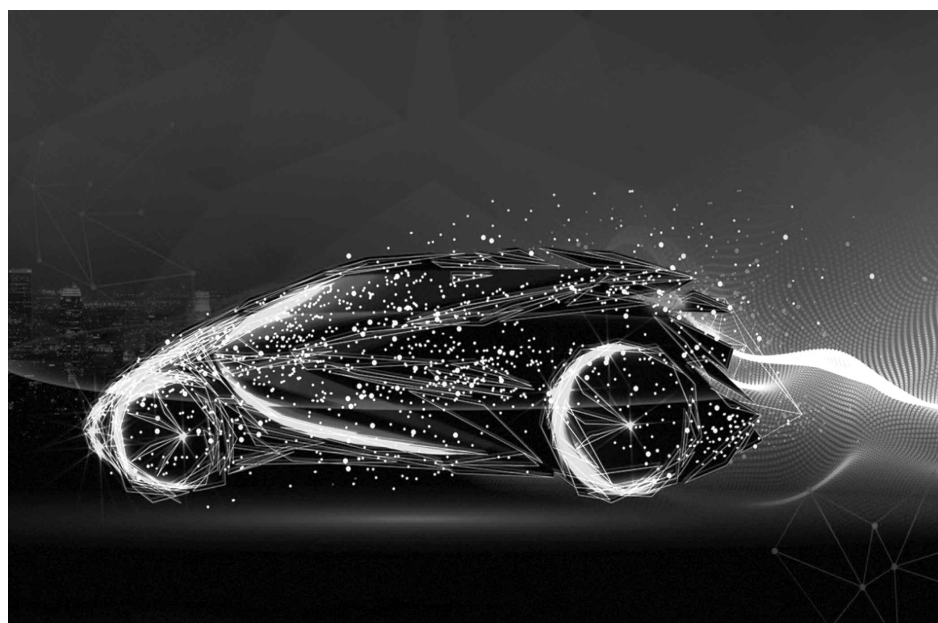
new issues. The autonomous car is expected to be much safer than existing vehicles, by eliminating the single most dangerous element – the driver. But while safety standards like the ISO 26262 specify the required safety, it is still a burden on the industry to demonstrate acceptable safety.

As demand rises, the *Electric Vehicles technology* and design will continue to evolve, and strategic challenges will follow. Established *OEMs* and their traditional suppliers will need to rethink their approaches to preserve their revenue and profitability.

The 2018 **Paris Motor Show** (*Mondial de l'Automobile*) – organized at the beginning of October 2018 at *Paris Expo Porte de Versailles* – is undoubtedly one of the most important international auto shows, with many new production automobile and concept car debuts.

The journal "*Asigurarea Calitatii – Quality Assurance*" will be present, as usually, at the most representative international car fair, *Mondial de l'Automobile 2018*, and will present the most important developments and trends in this important field.

Ioan C. BACIVAROV, Ph.D



Connectivity, and later autonomous technology, will increasingly allow the car to become a platform for drivers and passengers to use their time in transit to consume novel forms of media and services or dedicate the freed-up time to other personal activities.

Consumer demand for *safer cars* is growing and the auto industry is adapting with new advancements to keep passengers safe.

The rising trend of *Autonomous Things* is largely driven by the move towards the *Autonomous Car*, that both addresses the main existing safety issues and creates

