# TRANSFORMAÇÃO DIGITAL E IMPACTO NO DESENVOLVIMENTO DE SISTEMAS

## MODELAÇÃO E ANÁLISE DE SISTEMAS | TP

ILÍDIO OLIVEIRA ico@ua.pt
v2022-09-23

universidade de aveiro
departamento de eletrónica, telecomunicações e informática
deti

# Objetivos de aprendizagem para esta aula

**Descrever exemplos da transformação digital dos negócios**

**Identificar três eixos principais na transformação digital**

**Explique o que é o Ciclo de Vida do Desenvolvimento de Sistemas**

**Descreva as principais atividades dentro de cada fase do SDLC**

# A TRANSFORMAÇÃO DIGITAL E A VANTAGEM ESTRATÉGICA DOS SI

## "SOFTWARE EATS THE WORLD"

universidade de aveiro
departamento de eletrónica, telecomunicações e informática
deti

# PRR: resposta à COVID-19

**Prioridades:**

- **4.1 Pacto Ecológico europeu**
- **4.2 Transformação Digital**
- **4.3 Solidariedade**


https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/recovery-plan-europe_pt#documents

**Technological change has never occurred as rapidly, or on a large scale, as today.**

***"Technological innovation enables – indeed, requires – companies to boost their agility and thus their competitiveness. That's why CEOs' top priorities in 2016 should be to digitize the core components of their business and rethink organizational design and governance processes. Catching this fast-moving – and rapidly growing – "digital wave" is the only way to avoid getting left behind."***

PROJECT SYNDICATE
THE WORLD'S OPINION PAGE

PRINT

**DOMINIC BARTON**
Dominic Barton is the global managing director of McKinsey & Company.

JAN 15, 2016

# Catching the Digital Wave

NEW YORK – Technological change has always posed a challenge for companies. But, as we saw once again in 2015, it has never occurred as rapidly, or on as large a scale, as today. As innovation sweeps across virtually every sector, from heavy industry to services, it is transforming the competitive landscape, with the most advanced companies – rather than the largest or most established players – coming out on top.

For incumbents, the threat of displacement is very real. The average tenure of a company on the S&P 500 has fallen from 90 years in 1935 to less than 18 years today. Disruptive new players like Uber, which has upended the taxi industry, are tough competitors, often staking out market share by shifting more surplus to consumers. This is part of a broader trend of intensifying competition that, according to recent research from the McKinsey Global Institute, could reduce the global after-tax profit pool from almost 10% of global GDP today to its 1980 level of about 7.9% within a decade.

http://prosyn.org/lxXI6OW

THE WALL STREET JOURNAL.



http://www.wsj.com/articles/SB10001424053111903480904576512250915629460

ESSAY

# Why Software Is Eating The World

By **MARC ANDREESSEN**

August 20, 2011

This week, Hewlett-Packard (where I am on the board) announced that it is exploring jettisoning its struggling PC business in favor of investing more heavily in software, where it sees better potential for growth. Meanwhile, Google plans to buy up the cellphone handset maker Motorola Mobility. Both moves surprised the tech world. But both moves are also in line with a trend I've observed, one that makes me optimistic about the future growth of the American and world economies, despite the recent turmoil in the stock market.

In short, software is eating the world.

Marc Andreessen penned his famous "Why Software Is Eating the World" essay in The Wall Street Journal five years ago. Today, the idea that "every company needs to become a software company" is considered almost a cliché. No matter your industry, you're expected to be reimagining your business to make sure you're not the next local taxi company or hotel chain caught completely off guard by your equivalent of Uber or Airbnb. But while the inclination to not be "disrupted" by startups or competitors is useful, it's also not exactly practical.

**Jeetu Patel**
Contributor

Jeetu Patel is the chief strategy officer and head of Box Platform.



https://techcrunch.com/2016/06/07/software-is-eating-the-world-5-years-late


UBER


caixadirecta
Saldos e movimentos
Transferências
Pagamentos
Produtos Caixa
caixadirecta
Caixadirecta
O SEU BANCO
SEMPRE DISPONIVEL.
Tudo o que precisa, onde estiver, como quiser.
Adesão gratuita.
SAIBA MAIS ›


APP CAIXADIRECTA
UMA EXPERIÊNCIA ÚNICA
DE ACESSO SIMPLES E CÓMODO
AO SEU BANCO.
JÁ DISPONÍVEL PARA TABLET E SMARTPHONE IOS E ANDROID.
INOVAR NA CAIXA. COM CERTEZA.
iOS


SERVIÇO CAIXAUTOMÁTICA
QUALQUER
ALTURA É BOA
PARA IR AO
CAIXAUTOMÁTICA.


Portal Académico

3) Universidade de Aveiro : Portal Académico

Imprim

**Serviços Disponíveis**

Página Principal

**Alunos**

Secretaria Virtual

Horários de Turmas do 1ºAno

Horários para 2014/2015

Creditações OnLine

Matrículas OnLine

Candidaturas

Candidaturas M23

Candidaturas Especiais

Candidaturas CET

Candidatura Cursos Livres

Candidaturas EI/internationalstudent

**Docentes**

Disciplinas

**Secretaria Virtual para Estudantes da UA**

Sistema de apoio aos **estudantes**, servindo de extensão à Secretaria dos Serviços Académicos.

Noticias | Agenda

Ilídio Oliveira | sair

universidade de aveiro

paco

EN

paco > página inicial

## Portal Académico Online

Olá, Ilídio Oliveira

### Lista de opções livres

Podes a qualquer momento ver a lista de opções livres existentes através do menu de navegação ou carregando no botão abaixo.

Mais informação sobre a escolha de opções livres aqui: https://www.ua.pt/pt/sga/escolha-de-opcoes-livres

Ver Opções

### Ajuda

Se tiveres alguma dúvida ou problema podes contactar a secretaria do teu departamento ou então utilizar os links de ajuda disponíveis no fundo desta página. Podes também aceder às páginas de ajuda existentes através do menu de navegação ou carregando no botão abaixo.

Ver Ajuda

# Transformação digital

**A utilização de TIC para melhorar de forma decisiva o desempenho (dos processos), a proposta de valor de uma empresa (produtos/serviços) ou a experiência do utilizador.**

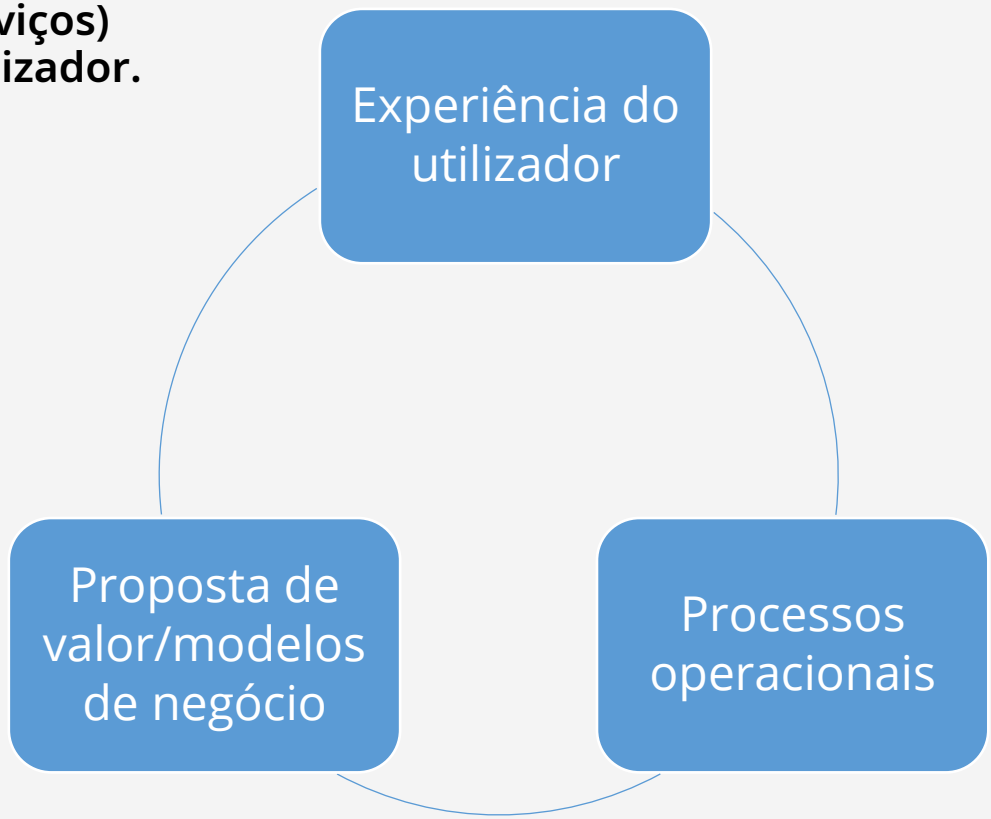
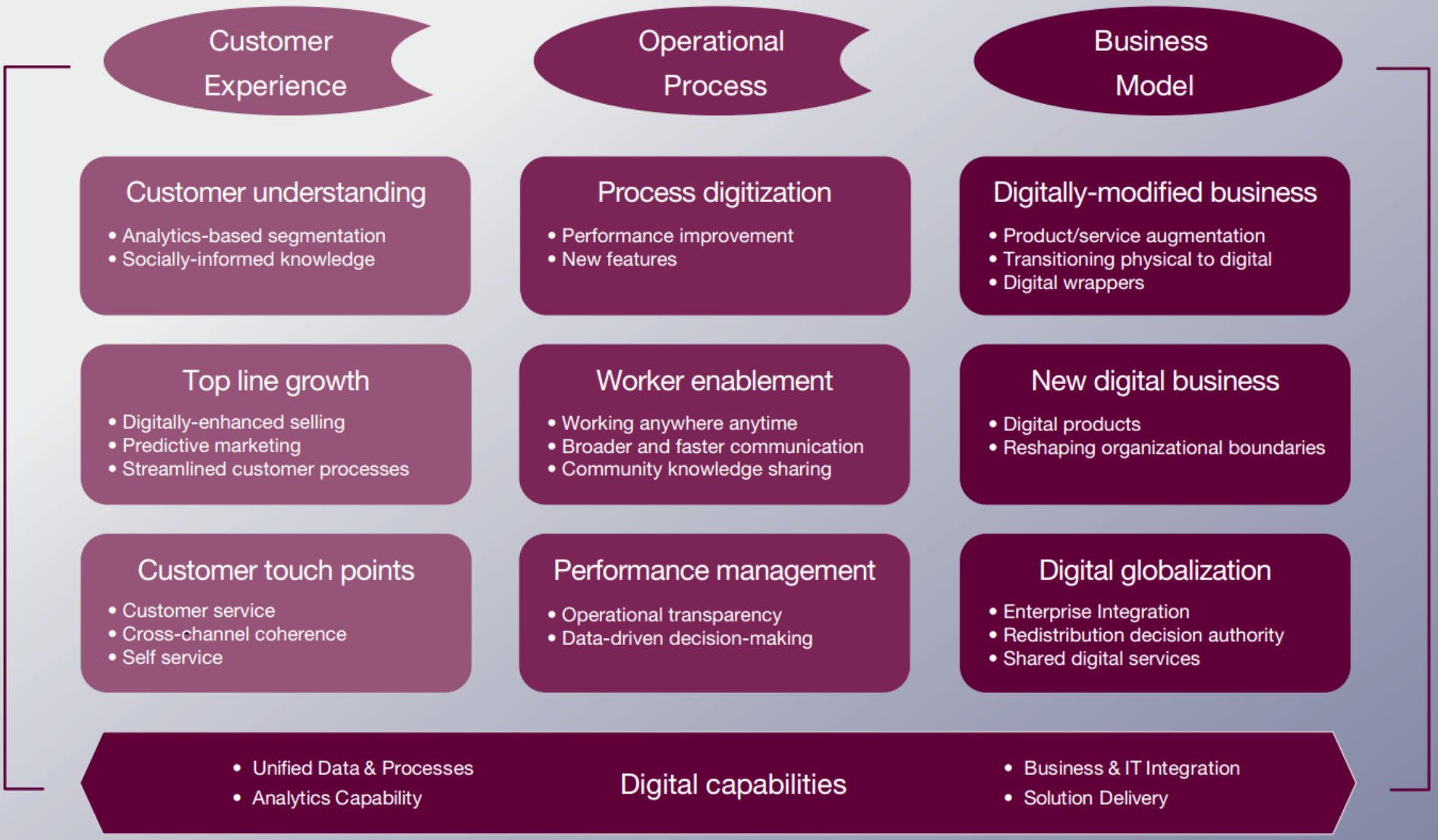


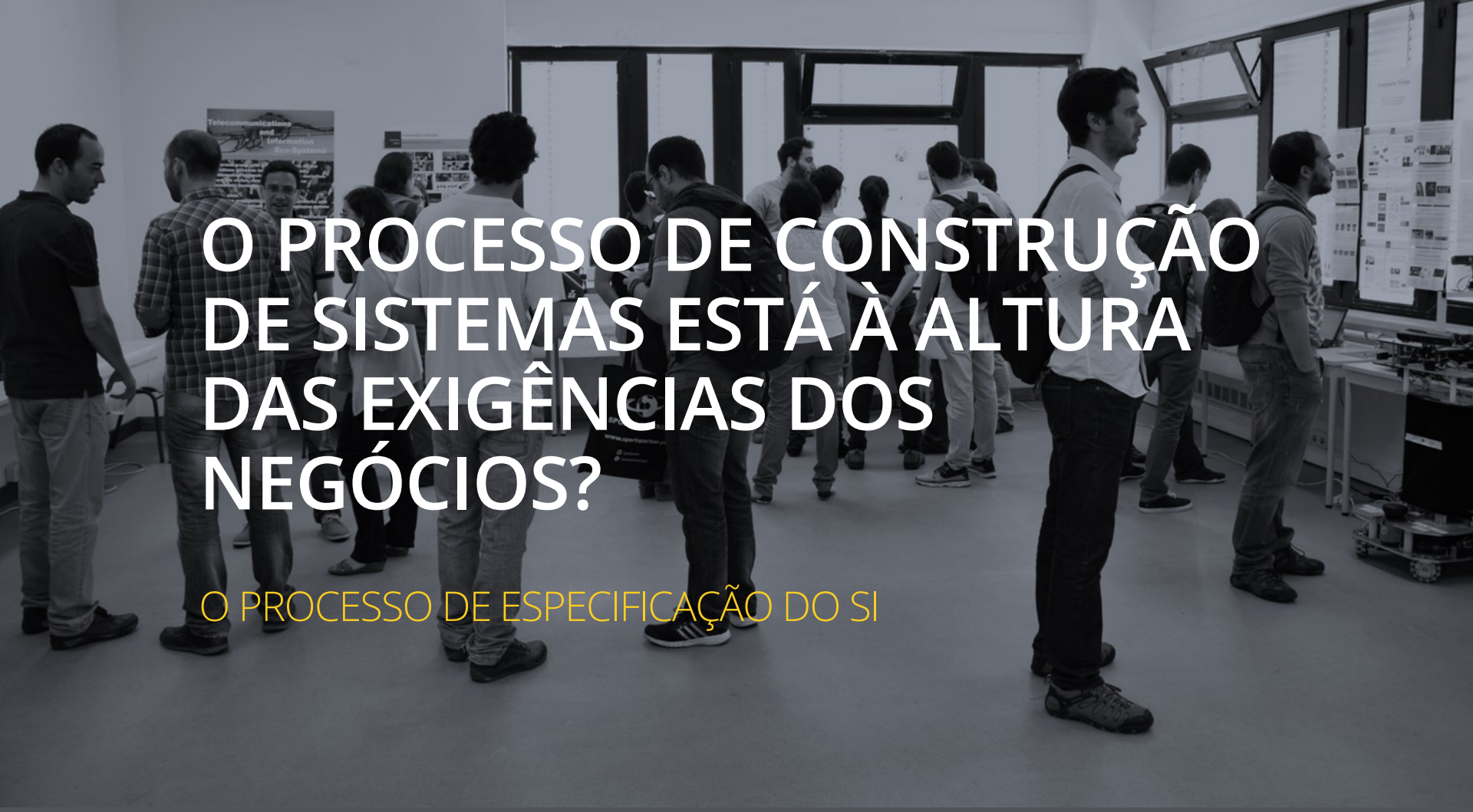
**Figure 3: Building blocks of the digital transformation**






"Digital Transformation: A Roadmap for Billion-Dollar Organizations", MIT Center for Digital Business

# Tecnologias para a próxima década...



# O PROCESSO DE CONSTRUÇÃO DE SISTEMAS ESTÁ À ALTURA DAS EXIGÊNCIAS DOS NEGÓCIOS?

## O PROCESSO DE ESPECIFICAÇÃO DO SI

universidade de aveiro
departamento de eletrónica, telecomunicações e informática
deti

Como é que compara com outras "engenharias"?

# Integrated Requirements Engineering: A Tutorial

**Ian Sommerville,** *Lancaster University*

Before developing any system, you must understa
tem is supposed to do and how its use can supp
the individuals or business that will pay for that
volves understanding the application domain
tions, railways, retail banking, games, and so on); the syst
constraints; the specific functionality required by the stakeh
ple who directly or indirectly use the system or the informat

and essential system characteristics such as performance, security, and dependability. *Requirements engineering* is the name given to a structured set of activities that help develop this understanding and that document the system specification for the stakeholders and engineers involved in the system development.

This short tutorial introduces the fundamental activities of RE and discusses how it has evolved as part of the software engineering process. However, rather than focus on established RE techniques, I discuss how the changing nature of software engineering has led to new challenges for RE. I then introduce a number of new techniques that help meet these challenges by integrating RE more closely with other systems implementation activities.

**The fundamental pr**

The RE process varies
ing on the type of appl
oped, the size and culture
volved, and the software
used. For large military
tems, there is normally a
the systems engineering
tensively documented set
ware requirements. For
veloping innovative softw
process might consist of
sions, and the product "
simply be a short vision s
software is expected to d

Whatever the actual pr
tivities are fundamental t

- *Elicitation*. Identify sources of information about the system and discover the requirements from these.
- *Analysis*. Understand the requirements, their overlaps, and their conflicts.
- *Validation*. Go back to the system stake-

**This tutorial introduces the fundamental activities of requirements engineering and discusses recent developments that integrate it and system implementation.**



0740-7459/05/$20.00 © 2005 IEEE

■ *The need for rapid software delivery.* Businesses now operate in an environment that's changing incredibly quickly. New products appear and disappear, regulations change, businesses merge and restructure, competitors change strategy. New software must be rapidly conceived, implemented, and delivered. There isn't time for a prolonged RE process. Development gets going as soon as a vision for the software is available, and the requirements emerge and are clarified during the development process.

## In 2015

**MODERN RESOLUTION FOR ALL PROJECTS**

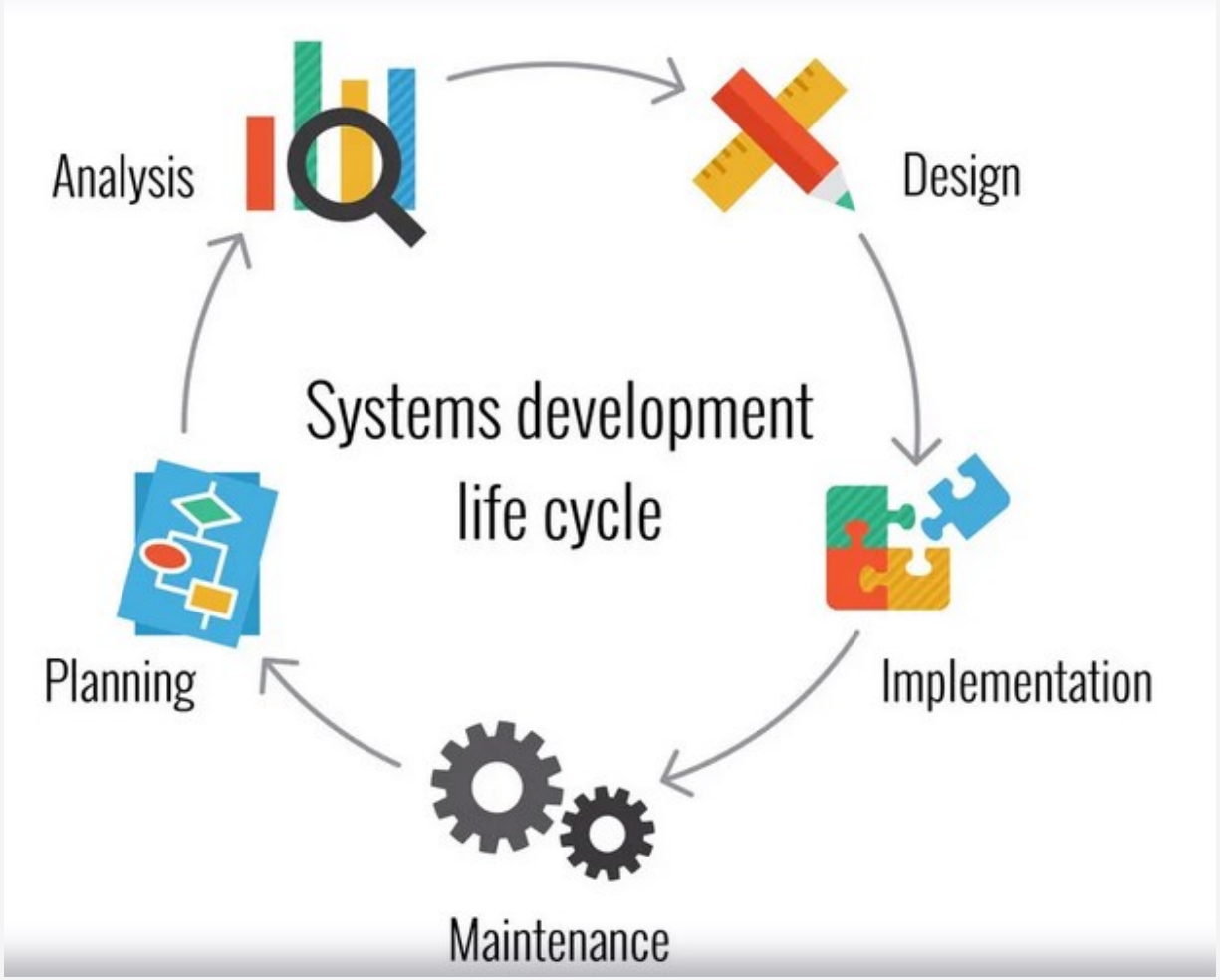
| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| SUCCESSFUL | 29% | 27% | 31% | 28% | 29% |
| CHALLENGED | 49% | 56% | 50% | 55% | 52% |
| FAILED | 22% | 17% | 19% | 17% | 19% |

*The Modern Resolution (OnTime, OnBudget, with a satisfactory result) of all software projects from FY2011–2015 within the new CHAOS database. Please note that for the rest of this report CHAOS Resolution will refer to the Modern Resolution definition not the Traditional Resolution definition.*



https://www.infoq.com/articles/standish-chaos-2015

# Systems development lifecycle (SDLC)



# Analista de sistemas é um papel chave do SDLC

**Ciclo de vida de desenvolvimento de sistemas (SDLC)**

**o processo de determinação de como um sistema de informação (SI) pode suportar as necessidades das empresas, projetando um sistema, construindo-o e entregando-o aos utilizadores.**

**Papel do Analista**

Um papel-chave no SDLC é o **analista** de sistemas, que analisa a situação do negócio, identifica oportunidades de melhorias e projeta um sistema de informação para implementá-los. Ser analista de sistemas é um dos trabalhos mais desafiantes na eng.a de software.

O principal objetivo de um analista de sistemas não é criar um sistema “topo de gama”, mas **criar valor para a organização.**

## Referências


Fowler, Martin. *UML Distilled: A Brief Guide to the Standard Object Modeling Language*. Addison-Wesley, 2003.

Pressman, Roger. *Software Engineering: A Practitioner's Approach*. 7th ed. McGraw-Hill, 2009.