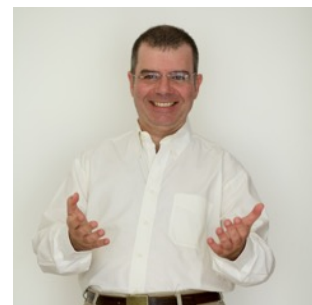




ISCTE
07 MAY 2015
18H – 19H30

“It looked easy when presented this way.”



Joaquim Baptista
Knowledge Management
Consultant

The 6th Report

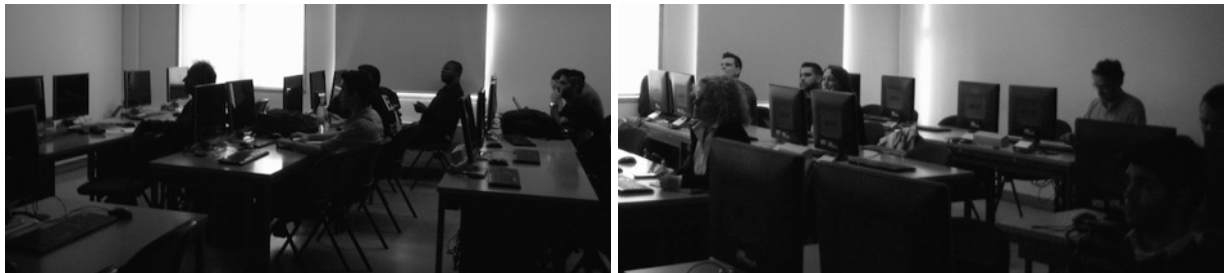
Contents

What happened?	3
Joaquim Baptista	4
Industrial Writing Tools	5
Public notes	13
Daniel Som	13
David Franco	13
Anonymous #1	13
Anonymous #4	14
Anonymous #5	14
Anonymous #6	14
Anonymous #7	14
Anonymous #8	14
Anonymous #9	15
Anonymous #10	15
Anonymous #11	15
Anonymous #12	15
Anonymous #13	15
Anonymous #14	16
Institutional support	17
About EuroSIGDOC	17
About APCOMTEC	18
About ISCTE-IUL	19

What happened?

Carlos Costa challenged me to give a class on the importance of technical writing to his students of Software Engineering. However, he warned me that these students preferred technical topics and might despise management topics, for example. In the end, I decided to approach this class by recounting 21 of my experiences with different writing tools.

Nineteen people attended the special class, including fourteen students. Presenting the 60 slides ended up taking all the 90 minutes available, leaving no time for questions. Alas, students had to hurry up to the next class, which happened in a room in the opposite side of the building.



The audience was kind in the fourteen public reports. Half of the audience appreciated the historical perspective, but one person wondered whether the materials were out-of-date. Five persons enjoyed seeing the variety of editors, LaTeX, and LinuxDoc.

Only three persons explicitly mentioned that the presentation was too long. I interpret that fact as a sign that the topic is interesting enough. But the long presentation prevented any interaction, and eight persons wanted more interaction, examples, or live demonstrations.

— Joaquim Baptista, px@acm.org

*A clear, simple, and compact presentation
of the history of the technology related with technical writing.
It looked easy when presented this way.*

– Anonymous #12

Joaquim Baptista

Joaquim starts 2015 as an independent Knowledge Management consultant. He draws on his extensive experience to offer effective solutions with the sophistication that typically requires a whole team of consultants.

Joaquim Baptista started the documentation team at Altitude Software in 1997. Under his leadership, the team wrote documentation and helps from scratch, then grew to manage translations in 1999, develop a proprietary XML-based documentation system in 2000, champion a company-wide wiki in 2003, adopt the XML DITA standard in 2005, develop training materials in 2006, recreate topic-based writing in 2009, create technical comics in 2013, and conduct ethnographic interviews in 2014.



Joaquim "px" Baptista

Effective Knowledge for Effective People.
Your flexible consultant for knowledge management.



Learn what your company should know!

Learn where you stand to plan for the future.
Your company cannot manage what it does not know.



Manage with agility!

Discover and deliver incrementally.
Remove annoyances, manage risk.



Optimize the flow of your company knowledge!

Structure the company knowledge
for consumption and maintenance.
Have a place for everything.



Make your knowledge easy to consume!

Write clear thoughts in clear words.
Inspire with illustrations and comics.
Explain APIs with code samples.



Design effective training and demos!

Create inspiring demos.
Create hands-on lessons or tutorials
with guaranteed learning objectives.



Craft your company software!

Capture requirements precisely.
Design the customer experience.
Streamline decisions for everyone. Automate.



Protect the future with open formats!

Embrace flexible tools and open formats
that adapt to the growing needs of your company.



He adopted and refined agile practices since 2004, and published the 2008 practices at ACM SIGDOC'08 under the name uScrum. He continuously adapts the agile practices to suit the needs of an evolving team and evolving workload.

Before tackling documentation he worked as trainer, programmer, system administrator, and academic researcher.

www.pxquim.com – px@acm.org – +351 91 784 2996

Industrial Writing Tools

Industrial Writing Tools

Joaquim Baptista, www.pxQuim.com



Writing and maintaining thousands of pages.

Context and authors determine best system.

- Desktop publishing is convenient and widespread.
- Plain text formats are easy to adopt.
- Markup enables reuse and repurposing.

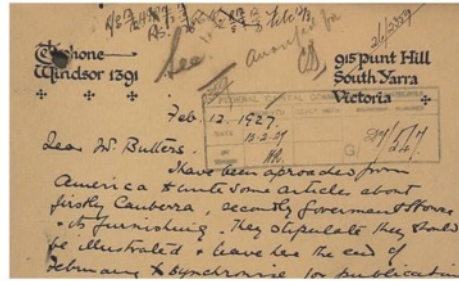
2

Joaquim "px" Baptista

- 1983–1988, FCT/UNL: Computer Science.
- 1989–1996, FCT/UNL: system administration, research in robotics and programming languages.
- 1997–2014, Altitude Software: technical writer, manager, instruction developer, manager.
- 2015, consultant.



3



1. Desktop Publishing

Nice-looking text.

4

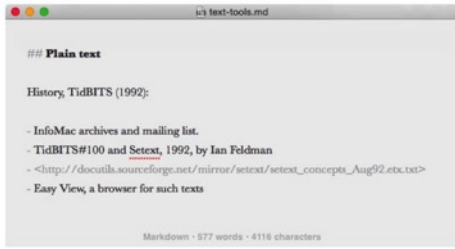
Typewriter

Owned one as a kid.

In 1962 Lockheed-Martin typed missile proposals in these, using STOP to plan pages and manage change.



5



2. Plain text formats

Simple, human-readable structure.

TidBITS #100, 1992

- Free weekly electronic newsletter, since April 1990.
- The first 99 issues were written and distributed in the HyperCard stack format.
- We're now switching to the setext format...
- There will be special setext *browsers* to automate the task of searching, archiving and transforming bits of the encoded material into WYSIMOLWYG ("What You See Is More Or Less What You Get")

"Primary objective: bringing order to amorphous online-distributed data."

—Ian Feldman

TWiki, Altitude 2002–

- Small notes took too long to publish on "XDoc".
- Adopted TWiki for "extra-documentation" notes.
- TWiki added collaboration and history.
- Adopted for Docteam notes, Agile process.
- Adopted by whole company in 2004 and 2005.
- There is still a learning curve. Requires discipline. Optional rich-text editor (HTML-based) is a mess.



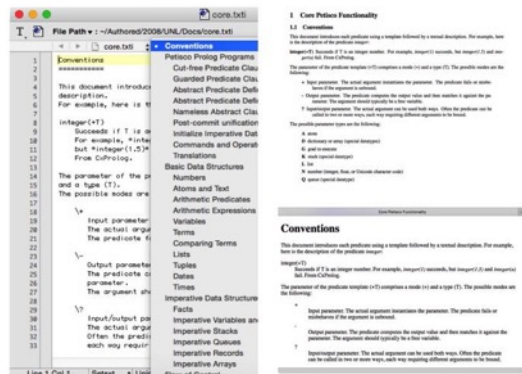
Blogspot, 2003–2005

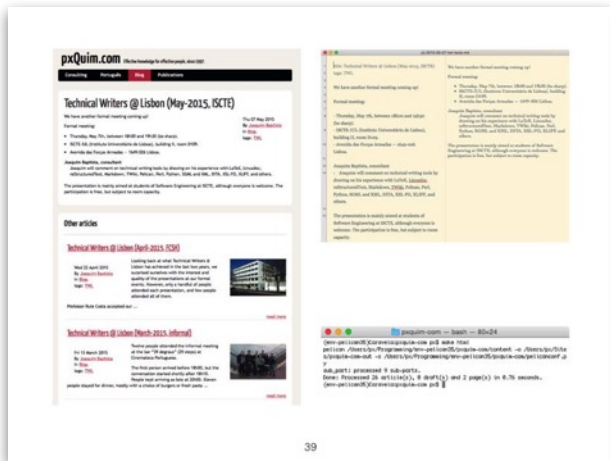
- Database of articles.
- Generates static HTML pages.
- Temporal order.
- Articles can be plain text.
- Minimal HTML markup, for images and links.
- Democratized online publishing for lesser geeks.



Docutils, FCT 2004–2008

- ReStructuredText (ReST), with formal grammar.
- Python parser, outputs HTML, PDF, others.
- Author in plain text editor.
- Navigate with Setext mode (BBEdit).





Plain Text Lessons

- Accessible to non-geeks, but requires discipline. We can add conventions and post-process.
- A wiki enables complex collaboration. Metadata makes the filesystem a database.
- We must adapt to different outputs.
- Markdown is a mess yet beats HTML. Textile and ReST have little support.

```

<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE reference PUBLIC "-//OASIS//DTD DITA Reference/EN" "reference.dtd" [ ]
  <reference id="channels-list" />
  <title>Channels list</title>
  <tbody>
    <section>
      <q>In the Recorder Monitor outline, <ph>select </ui>Channels</ui> control, see
      </note type="attention">If the <ui>control</ui>View online channels only</ui> option
      </section>
    <section>
      <ul>
        <li>
          <table border="1">
            <tr>
              <td>Channel</td>
              <td>
                <code></code>The host name of an online Recorder Channel or
                <br>
                <code></code>The Channel is
                <br>
                <code></code>The Channel is not
                <br>
                <code></code>The Channel is
                <br>
                <code></code>The Channel is
              </td>
            </tr>
          </table>
        </li>
      </ul>
    </section>
    <section>
      <table border="1">
        <tr>
          <td>Extension</td>
          <td>
            <code></code>The extension number associated with the Rec
          </td>
        </tr>
      </table>
    </section>
  </tbody>
</reference>
  
```

3. Text Markup

Machine-readable structure.

LaTeX, FCT 1996–97

- Author in plain text editor. Semantic markup. Break large documents into parts.
- Obsolete parsing technology. Output in PDF only.
- Large evolving documents. Unwieldy over time. Unreadable by laymen. Margin notes for change tracking. Processable.

Chapter 2

Informação Pessoal

Esta parte do sistema de informação... (text continues)

2.1 Estudantes

Seguir informação sobre os alunos para ser servida... (text continues)

2.2 Serviços em torno do PH

Descrever como o sistema de informação... (text continues)

2.2.1 Consulta e Alteração

Esta é a parte do PH... (text continues)

Semantic markup

- 1969: GML, Charles Goldfarb, Ed Mosher, Ray Lorie. IBM BookMaster.
- 1974: SGML, Charles Goldfarb. 1989: HTML, Tim Berners-Lee.
- 1990: IBM BookManager, IBM ID Doc (SGML). Don Day, Wayne Wohler, Elliot Kimber. 1991: DocBook.
- 1998: XML. James Clark. 1999: IBM DITA. Open source in 2004.

"SGML is designed to make your information last longer than the systems that created it."

-Charles Goldfarb

LinuxDoc, FCT 1997–98

- SGML with simple DTD. Markup minimization. Matt Welsh, 1994.
- Output as PDF, HTML, and TXT.
- Author in plain text editor. Extremely effective.
- A web of area documents and regular reports.

Previous Next Table of Contents

1º Relatório de Progresso

Intervenções no Serviço de Informática, quinzena de 9 a 21

Joaquim Baptista, px@acm.org

21 de Julho de 1997

Actualizei o sistema operativo da nova Solaris 2.5.1 com 39 patches, mas ainda faltam 2, os seguintes: [Bugsfix 1](#), [Bugsfix 2](#), [Bugsfix 3](#), [Bugsfix 4](#), [Bugsfix 5](#), [Bugsfix 6](#), [Bugsfix 7](#), [Bugsfix 8](#), [Bugsfix 9](#), [Bugsfix 10](#), [Bugsfix 11](#), [Bugsfix 12](#), [Bugsfix 13](#), [Bugsfix 14](#), [Bugsfix 15](#), [Bugsfix 16](#), [Bugsfix 17](#), [Bugsfix 18](#), [Bugsfix 19](#), [Bugsfix 20](#), [Bugsfix 21](#), [Bugsfix 22](#), [Bugsfix 23](#), [Bugsfix 24](#), [Bugsfix 25](#), [Bugsfix 26](#), [Bugsfix 27](#), [Bugsfix 28](#), [Bugsfix 29](#), [Bugsfix 30](#), [Bugsfix 31](#), [Bugsfix 32](#), [Bugsfix 33](#), [Bugsfix 34](#), [Bugsfix 35](#), [Bugsfix 36](#), [Bugsfix 37](#), [Bugsfix 38](#), [Bugsfix 39](#).

1. Contexto

2. Escolha dos Objectivos

3. Usagem: Solaris 2.5.1

4. Usagem: Instalação do INN

5. PH: Manutenção

8. DNS

O serviço DNS operava no tradicional programa `named`. Usava-se duas versões: a versão 4.9.3 e a versão nativa do AIX 3.2. A manutenção era feita através de scripts (em Perl) e de um sistema de actualização das alterações (em Perl) e de actualização, usando scripts de actualização.

Result: Não funcionava sem problemas de manter.

Instruções:

- 10) Remover de teste, inutilidade
- 11) O DNS está a funcionar
- 12) Nova instalação para teste
- 13) Servidor de teste de teste
- 14) Registo de teste de teste
- 15) Teste de teste de teste
- 16) Teste de teste de teste
- 17) Teste de teste de teste
- 18) Teste de teste de teste
- 19) Teste de teste de teste
- 20) Teste de teste de teste

Serviço de Directoria em 1997

Estado: Não funcionava sem problemas de manter.

Conteúdo

- 1.1. Objectivos do trabalho
- 1.2. Identificação do trabalho
- 1.3. Objectivos do trabalho
- 1.4. Objectivos do trabalho
- 1.5. Objectivos do trabalho
- 1.6. Objectivos do trabalho
- 1.7. Objectivos do trabalho
- 1.8. Objectivos do trabalho
- 1.9. Objectivos do trabalho
- 1.10. Objectivos do trabalho

47

```
<!doctype linuxdoc system>
<article opts="sgmlhack">

<title>1º Relatório de Progresso
<subtitle>Intervenções no Serviço de Informática,
quinzena de 9 a 20 de Julho de 1997
<author>Joaquim Baptista,
<mailto:px@acm.org"> name="px@acm.org"></tt>
<date>21 de Julho de 1997

<abstract>
Actualizei o sistema operativo da <tt/news/ (Solaris 2.5.1) com
39 patches, mas ainda faltam 3, anunciados mas não disponíveis.

Instalei o <tt/perl5, o <tt/gzip e o <tt/lynx na <tt/news/, e
recompilei o INN. Para completar a intervenção, faltou instalar
e testar o INN.

Fiz manutenção de rotina ao PH e ao DNS.

Procurei e adoptei uma aplicação para elaborar a documentação
produzida neste acordo de colaboração.
A aplicação escolhida baseia-se em SGML, um standard com 18
anos, e permite gerar automaticamente texto formatado, HTML
e LaTeX, de onde se obtêm páginas de alta qualidade.

Propoño a criação de um arquivo de software e de documentação
Linux na <tt/onphelis/.
```

XDoc, Altitude 2000–4

- LinuxDoc to DocBook, too complex for authors?
- Custom XML DTD based on LinuxDoc.
- Proprietary XMetal editor. MSXML + XSLT + ext. 1 man/year customization.
- Output Word+PDF (through Acrobat Distiller), HLP (Word + help compiler), HTML.
- Images are grayscale GIF or WMF.

49

Annotations:

- Spell-checking and thesaurus
- Customizable menus and toolbars
- Table editing
- Context-sensitive Element List
- Attribute Inspector
- Automatic generation of a stylesheet to layout inline and block elements.

Managing the Altitude Voice Recorder 6.2

3.2. Five ways to channel subsystems

The section describes how to manage channel subsystems using the Voice Recorder Monitor. You can monitor the state of channel subsystems and check for their status.

Channel subsystem status

The Altitude Channel Subsystem has the latest channel subsystems. Each channel subsystem has four levels of status information:

- **State:** The state of the channel subsystem. The computer does not know the state of the channel subsystem. If the computer knows the state of the channel subsystem, the state is "Up". Otherwise, the state is "Down".
- **Server:** The server of the Altitude Channel Subsystem. The server name, separated by a colon (:). The default is "altitude".
- **Switch:** Logical name of the switch associated with the subsystem.

The light status icon for the subsystems are as follows:

- **Up:** Green
- **Down:** Red
- **Busy:** Yellow
- **Unavailable:** Grey

51

XDoc tricks and issues

- Single-sourcing. Translation.
- Python: C# comments to XDoc.
- HTML generation time grew to 44h. O(document size * #parts).
- Documentation composed of 103 small documents.
- Fragile solution, no money for consultant.

52

DITA, Altitude 2005–

- Proprietary Syntax Serna editor, DITA built-in. Proprietary PDF rendered (XSL-FO). DITA Open Toolkit (XSLT + Java).
- Output PDF, HTML, CHM. Lost Word.
- Source control through SVN and TortoiseSVN.
- Images: GIF+SVG, some JPEG. Then, PNG and PNG-600. Then, PNG and PDF.

53

Serna Enterprise 4 XML Editor

Syntax Serna Enterprise is a powerful and easy-to-use WYSIWYG XML editor for the authoring of structured content. Serna brings all the benefits of XML: a business quality content, highest authoring productivity, and automated multi-channel publish seamlessly integrated environment.

Structured Content

Structure is the key point of XML, which turns your content to reusable information. If Syntax Serna, structured authoring is so easy and intuitive that you can even forge are dealing with XML.

With its familiar word-processor like interface, Serna helps authors to create, maintain, publish XML documents easily, rapidly and effectively.

A variety of supported XML standards such as DITA, S10000, Docbook, and others.

54

Public notes

All participants received a questionnaire with the following questions:

- Ideas, doubts, comments, reflexions?
- What did you like the most?
- How could we improve? What could we do differently?

The participants were promised that their answers would be published in a final public report.

The following pages have the notes returned by 21 participants, transcribed or translated to English.

The anonymous notes correspond to participants that did not check the “publish?” box.

Daniel Som

Email? dlbsa@iscte-iul.pt

Comments? It is indeed important to draw the attention of programmers to the importance of documentation. It is important to teach them to “write”.

Like? Ascertain the importance of editors.

David Franco

Email? dgfoa@iscte-iul.pt

Comments? Rather interesting presentation, where the speaker is very competent and with extensive and vast knowledge of the theme addressed.

Like? The history and evolution of systems and applications.

Improve? Considering the audience, “Masters in Informatics Engineering”, the speaker could focus more on technical components, for example with practical demonstrations.

Anonymous #1

Improve?

- The tool may be limited, but the user can/should overcome the problems with sagacity.
- A short a very specific approach to tools, a positive point.
- Clear and perceptible slides.

public notes

We will contact you through email.
We will publish your name and email if you say so.
We will publish your notes below as part of the public report.

Ideas, doubts, comments, reflections?

É muito importante chamar a atenção dos programadores para a importância de documentar. É importante ensiná-los a “escrever”.

What did you like the most?

Verificar a importância dos editores.

How could we improve? What could we do differently?

Thanks!

Like?

- Time-based following and evolution of tools.
- Examples / events related with the tool addressed.

Improve? Short demonstrations of certain tools.

Anonymous #4

Comments? Having experience in functional analysis of systems and in requirements gathering processes, I did not get a clear notion of what I could use / consider to simplify and improve the writing of the documentation involved in these tasks.

Like? Historical and evolutionary context of the subject-matter presented.

Improve? Since the audience had some technical background and enjoys practical examples, you could illustrate one working application and do an “Hello world”.

Anonymous #5

Comments? Presentation too long.

Like? Ascertain the evolution of technologies over time.

Improve? Make this survey digital (make available online), avoiding the need to print and the work in gathering the information.

Anonymous #6

Comments? Presentation of specific applications, which help a specific problem. An area to explore to do the documentation.

Like? Presentation of new solutions that can be easily used to do some work.

Improve? If there was more time, you could present more examples.

Anonymous #7

Comments? Nothing of note.

Like? Nothing of note.

Improve? Less history lessons, more current usages and tools.

Anonymous #8

Comments? Markup and desktop publishing are more expensive. Plain text is practically free, but has little support and sophistication and requires discipline. Markup allows reuse and requires an editor.

Like? LaTeX and XML.

Anonymous #9

Comments? The importance of documentation associated with information systems is often relegated to the background, hindering the access to implemented functionality. Being aware of the importance of these tasks and the available tools is very relevant.

Like? The variety of editors shown.

Anonymous #10

Comments? I consider the professor approached the theme with many details which shows he has a deep knowledge and he's passionate about Technical Writing.

However I think he should approach all these technologies slightly and become the presentation more dynamic.

In general, it was important to attend the presentation.

Anonymous #11

Comments? This served for future meditation about this issue. I had not even considered its existence until now.

Apparently there is not extensive solution. There are several tools and each one has positive and negative points.

Like? LinuxDoc.

Anonymous #12

Comments? A clear, simple, and compact presentation of the history of the technology related with technical writing. It looked easy when presented this way.

Some of aspects referred can be relevant for:

- writing reports
- writing articles
- writing documentation
- a subject for further study and a subject for investigation.

Like? A good historical vision of the technology related with writing.

Improve? We missed a time for discussion.

Anonymous #13

Like? The part about LaTeX.

Anonymous #14

Comment? The content of the presentations slightly out of date. The presentation was not captivating and had no interaction.

Like? Historical context.

Improve? More dynamic presentations, with more interaction with the audience.

Institutional support

About EuroSIGDOC

EuroSIGDOC is an ACM SIGDOC European chapter.

SIGDOC is the Association for Computing Machinery's Special Interest Group (SIG) on the Design of Communication (DOC).

EuroSIGDOC is a group of researchers and practitioners wanting to pursue the SIGDOC mission in a European context.

Like SIGDOC, EuroSIGDOC focuses on the design of communication as it is taught, practiced, researched, and conceptualized in various fields, including technical communication, software engineering, information architecture and usability.

Since 2010, EuroSIGDOC sponsored the following events:

- OSDOC 2010 — Workshop Open Source and Design of Communication (eurosigdoc.acm.org/osdoc2010);
- OSDOC 2011 — Workshop Open Source and Design of Communication (eurosigdoc.acm.org/osdoc2011);
- OSDOC 2012 — Workshop Open Source and Design of Communication (eurosigdoc.acm.org/osdoc2012);
- OSDOC 2013 — Workshop Open Source and Design of Communication (eurosigdoc.acm.org/osdoc2113);
- ISDOC 2012 — Workshop Information Systems and Design of Communication (eurosigdoc.acm.org/isdoc2012);
- ISDOC 2013 — International Conference on Information Systems and Design of Communication (eurosigdoc.acm.org/isdoc2013);
- ISDOC 2014 — International Conference on Information Systems and Design of Communication (eurosigdoc.acm.org/isdoc2014);

Several seminars were sponsored by EuroSIGDOC (eurosigdoc.acm.org/seminars.html), and now the TWL (Technical Writers @ Lisbon).

— EuroSIGDOC Board

About APCOMTEC

APCOMTEC: uma associação interdisciplinar

Desde a sua criação, em 2006, que a APCOMTEC, Associação Portuguesa para a Comunicação Técnica, com sede na UA, tem vindo a promover e divulgar a prática profissional, formativa e de investigação em Comunicação Técnica (CT), em Portugal. Nos últimos anos, procurou dar a conhecer o seu trabalho e divulgar esta área, recente em contexto nacional, tanto através da formação, da organização de eventos, das redes sociais e da Newsletter

Missão e objetivos

AAPCOMTEC tem por missão o desenvolvimento, a promoção e a representação da Comunicação Técnica em Portugal, bem como dos respetivos profissionais.

Dos objetivos dos atuais órgãos sociais fazem parte o diálogo próximo entre o meio académico e o meio empresarial, a promoção da interdisciplinaridade inerente à CT, nomeadamente com a Tradução, a Terminologia, a Engenharia Informática e a Divulgação de Ciência, bem como o fortalecimento da presença e o reconhecimento da CT a nível nacional e europeu. AAPCOMTEC é associada da TCEurope – associação que representa os interesses da comunidade de Comunicação Técnica a nível europeu.

O que temos feito

Enquanto agente divulgador e mediador de experiências, conhecimento, informação, produtos e serviços sobre e de Comunicação Técnica, a APCOMTEC tem dinamizado eventos de informação e formação em CT, nomeadamente através das suas Jornadas e do Colóquio Internacional de Comunicação Técnica 2012.

Foram três as **Jornadas** já organizadas em diferentes pontos do país, desde 2011: no DLC/UA, sobre Comunicação Profissional e Design de Informação, na ESTGA, dedicada à Comunicação Profissional e Planeamento na Documentação Técnica, e no ISCAP, coorganizada com o Centro Multimédia de Línguas (CML), sob o tema “Comunicação Técnica: como traduzir negócios em sucesso”.

O objetivo destas Jornadas consistia em reunir especialistas e profissionais, na área da Comunicação Técnica (CT), e dar a conhecer o seu trabalho a futuros especialistas, indo assim ao encontro dos próprios objetivos da APCOMTEC.

Quanto ao **Colóquio Internacional de Comunicação Técnica 2012**, constituído por um Pré-colóquio sobre «Sustentabilidade em Comunicação Técnica» e o Colóquio TCEurope 2012 «Technical Communication and Readership», este teve lugar no Departamento de Línguas e Culturas da U. Aveiro em abril de 2012.

O Pré-colóquio permitiu debater acerca da estreita relação entre a Comunicação Técnica, a Terminologia, a Tradução e a Engenharia Informática, que inegavelmente contribuiu para um desenvolvimento mais preciso, adequado e eficaz, assim como para a criação de documentação mais personalizada e intuitiva.

Quanto ao Colóquio TCEurope, o seu objetivo foi fornecer uma visão geral do estado-da-arte de um tópico tão vasto e desafiante como é o público-alvo em Comunicação Técnica, bem como explorar os diferentes e emergentes meios de comunicação aqui utilizados, trocar informação relativa à comunicação técnica e às suas aplicações, avaliar as vantagens e desvantagens dos diversos formatos de edição e produção, assim como as utilizações, as necessidades e as exigências provenientes da e-sociedade.

Este conjunto de eventos contribuiu certamente para o crescimento da associação, tanto a nível do número dos seus associados como da projeção que conseguiu dar a esta área recente do conhecimento, tendo-se este último facto refletido nos inúmeros contactos de qualidade que a APCOMTEC teve com as **empresas e instituições**, essencialmente a nível nacional.

Já a nível europeu, o esforço da associação em manter a ligação à **TCEurope** tornou-se particularmente profícuo aquando da organização conjunta do evento internacional antes mencionado, assim com nas reuniões de trabalho subsequentes, tendo a última acontecido em Bruxelas, em abril de 2013, onde a APCOMTEC esteve presente.



About ISCTE-IUL

ISCTE — University Institute of Lisbon (ISCTE-IUL) is a public university established in 1972. Pursuing teaching, research and community service activities, it plays a major role in educating qualified specialists and personnel, whose cultural, scientific and technical skills enable them to contribute to sustainable development both at the national and the global level. The strategic objectives of ISCTE — University Institute of Lisbon are: innovation, quality, internationalization and development of an entrepreneurial culture.

While preserving its public university nature, ISCTE — University Institute of Lisbon is currently one of the three Portuguese universities (along with the University of Porto and the University of Aveiro) which opted the Foundation Regime, the latter prescribing management according to private law.

With approximately 8500 students enrolled in undergraduate (52%) and postgraduate (48%) programs, 450 teachers and 220 non-teaching staff, ISCTE — University Institute of Lisbon is proud to be one of the most dynamic and innovative universities in the country. Facing high demand, the student vacancies at the ISCTE — University Institute of Lisbon have always been fully occupied.

- ISCTE-IUL is constituted by four schools:
- ISCTE-IUL Business School (IBS)
- School of Social and Human Sciences (ECSH)
- School of Sociology and Public Policy (ESPP)
- ISCTE-IUL School of Technology and Architecture (ISTA)



ISCTE — University Institute of Lisbon encourages students to fully exploit their potential, to develop their capability for initiative and flexibility and to complement their academic education with international experience, enabling them with the necessary skills to adapt to the needs of the global labour market. ISCTE — University Institute of Lisbon demonstrates a high rate of graduates' employability and achieves the 100% rate in most of the courses. Its former students currently occupy positions of high responsibility in private companies, public institutions and governmental entities, which confirms not only the prestige of our institution, but also its teaching quality.

ISCTE — University Institute of Lisbon is a *research university*, with nine research centers evaluated by the Foundation for Science and Technology.

At community service level, the scholars and graduates of the ISCTE — University Institute of Lisbon have contributed to establishing multiple connections with private companies and public and civil society organizations. One of the most outstanding examples is the Institute for Management Development (INDEG), which employs activities of strong public recognition in the domains of education, postgraduate studies and research and community service in the areas of its jurisdiction.

In the domain of entrepreneurship, the research center AUDAX is nowadays a national reference as it has developed partnerships with various local authorities, business associations, COTEC and the Massachusetts Institute of Technology (MIT).