

计算机世界 系列丛书
CHINA COMPUTERWORLD

英汉对照 计算机最新文萃



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易水 编译

兵器工业出版社

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内 容 简 介

本书将现代计算机最新文章精华以中英文对照的形式呈现在读者面前,这是广大电脑爱好者和英语爱好者非常难得的一本好书。本书选编了《计算机世界》周报于1998、1999年登载的最受欢迎的栏目“英语时文选读”中的六十多篇文章,重点是最新的技术介绍、最新的应用理念、最新的技术术语;材料新鲜而活跃,既是电脑工作者学习新知识、了解新技术动向的重要窗口,也是提高英语学习水平的良好途径。通过阅读这些文章,读者对于近年来计算机与信息技术的最新进展可有一个概要的了解,同时通过英汉对照,有利于读者提高英语阅读能力和翻译水平。

图书在版编目(CIP)数据

英汉对照计算机最新文萃 / 易水编译. - 北京:兵器工业出版社, 2000.1.

ISBN 7-80132-745-4

I. 英… II. 易… III. 英语 - 对照读物, 电子计算机 - 英、汉 IV. H319.4

中国版本图书馆 CIP 数据核字(2000)第 01596 号

出版发行:兵器工业出版社

责任编辑:刘莹 任强

社 址:100089 北京市海淀区车道沟 10 号

经 销:各地新华书店

印 刷:中国建筑工业出版社密云印刷厂印刷

版 次:2000 年 1 月第 1 版 11 月第 2 次印刷

印 数:1001~2500

封面设计:严 超

责任校对:崔丽萍

责任印制:王京华

开 本:850×1168 1/32

印 张:9.875

字 数:235 千字

定 价:22.00 元

前 言

人类正在迈向 2000 年。在这世纪之交,我们应用什么来迎接新世纪的到来? 21 世纪将是一个信息化的时代,这已成为人们的共识。懂计算机和会外语(尤其是随因特网在全世界的蓬勃发展而通用性越来越强的英语)是 21 世纪人才需要具备的基本技能,这也为越来越多的青年人所认识。为了满足这种需求,我们以英汉对照的形式编撰此书,奉献给大家。使大家在学习英语的同时,了解计算机的最新科技。

计算机是 20 世纪最伟大的发明之一。50 年来,尤其是进入 80 年代后,计算机一直以科学史上前所未有的速度飞快地发展着。新产品、新技术、新方法层出不穷。特别是随着因特网在全世界的迅速普及,正在深刻地改变着我们的工作方式和生活方式。如何跟上这种高速发展的步伐,更新已有的知识,已成为摆在我们面前亟待解决的问题。

本书收集了《计算机世界》周报于 1998、1999 年登载的最受欢迎的栏目“英语时文选读”中的六十多篇文章,从各个方面介绍信息技术的最新发展。比如,在知识经济中,知识是如何管理的? 知识怎样才能成为财富? 又如,下一代的因特网将如何发展? 统一网如何建立? 还有诸如,VPN、ERP、Linux、MP3 等新技术、新概念,本书都有所涉及。通过阅读这些文章,读者能对信息技术的最新发展有概略的了解,有利于更新知识。同时,通过英汉对照,也有助于提高读者的英语阅读能力和翻译水平。

由于技术发展非常快,有些新词的意义尚未最后确定,有些新

的概念还在发展之中,所以相应的中文定名也存在着不确定性,可能会出现偏差,望读者原谅。

《计算机世界》报社的同仁在本书的编辑出版过程中做了很多工作,在此向他们表示衷心的感谢。

易 水

1999.10.27

1. The Future of IT

If there's only one certainty this year, it's the Internet. No, it's not question of whether the Internet will be around in 2000, or if it will continue to grow. Those are givens.

The fact is that the IT world will continue to revolve around the Internet, and even more strongly. Nearly every IT decision will have an Internet element to it — from user-enterprise productivity to vendor strategy to vendor offering.

Today, even non-IT businesses are looking very closely at the Internet as a path along which to do business. It's been hailed as the next business frontier. Credit card companies, banks, governments and retailers too are working together to create and promote secure transactions over the Internet. A case in point, the Secured Electronic Transaction (SET) trials, is being carried out in Singapore and other parts of the world.

As soon as these and similar trials can instill public confidence in Internet-based transacting, electronic-commerce (e-commerce) can take off. In fact, the larger IT vendors are banking on it, like IBM, for example, as it champions "E-business".

But amidst all the excitement that e-commerce is generating in the business community, enterprises seriously thinking of implementing it must also commit to understanding the Internet. They must realize that embarking on e-commerce is like entering into any other new market. This way, as soon as e-commerce takes off, they will be able to craft their Internet-based business processes to meet the expectations of their new target customers. What works well on the store floor need not necessarily work well over the Internet.

Offering a cheaper alternative is the hallmark of the Internet's success. In turn, the cost advantages that the Internet provides has resulted in the popularity of corporate intranets. This trend will continue. But as in the case of e-commerce, security will remain a major concern among enterprises. It will be a while before mission critical information will be deployed across intranets.

Telecommunications and their data networking counterparts have already begun working together to provide voice, data and video transmission offerings that leverage on the Internet's promise as a cheaper alternative to doing things. One area here is Computer Telephony Integration(CTI). While the technology promises to make long distance phones calls, for example, less expensive, the technology is still in its early stages of development. This year will see more effort from these networking partners at putting the pieces together.

For the consumers looking for faster Internet access, they will have to make a choice between Asymmetric Digital Subscriber Line (ADSL) or 56K-bit per second Modem technology.

Finally, a reminder about the Year 2000 bug. If your systems are not yet year 2000-compliant, remember you only have till the end of 1999 to complete your fixes so that you can continue to use your systems in 2000.

[译文]

信息技术的未来

如果今年只有一样东西是确凿无疑的,那就是因特网。这不是因特网在 2000 年是否存在、或者继续增长的问题,这些事实都是明摆着的。

实际上信息技术(IT)将继续围绕因特网发展,甚至更强烈。几乎每一项有关 IT 的决策——从用户企业的生产率到供应商的

策略、供应商提供的产品与服务——都将有因特网的成分在内。

今天,甚至非 IT 的公司也非常关注因特网,把它看作做生意必须要走的道路。它已被人们称作生意场的下一个前沿。信用卡公司、银行、政府和零售商也在一起工作,以建立和推动因特网上安全的交易。一个恰当的例子是正在新加坡和世界其它地方进行着的安全电子交易(SET)的实验。

当这些以及类似的试验能逐渐让公众对基于因特网的交易建立信心时,电子商务就能起步了。实际上,较大的 IT 公司都指望着手它,如 IBM 公司大力支持“电子交易”。

但电子商务在公司界产生激动之时,正在严肃考虑实施电子商务的企业也必须要了解因特网。他们必须懂得从事电子商务犹如进入另外一个新的世界。这样,电子商务一起步,他们就能精心开始基于因特网的业务过程,以满足其新的目标客户的期望值。在店面上做得很好并不一定就是在因特网上也做得很好。

在因特网上成功的标志就是提供了另外更便宜的(做生意)途径。因特网提供的成本优势会反过来促使公司内部网的普及推广。这个趋势将继续下去。但与电子商务的情况一样,安全性仍是各公司的关心重点。关键任务的信息能在内部网上部署还需时日。

电信公司和他们的数据联网的同行们已经开始联手工作,提供语音、数据和视频图形传输服务。而这些传输服务利用了因特网允诺的另一个更便宜的方法。计算机与电话的结合(CTI)就是这样的一个领域。虽然此项技术可望实现打长途电话更便宜,但此技术尚处于开发的早期阶段。今年,人们将看到网络合作伙伴作出更大的努力,将(此技术的)各部分连到一起。

对于那些寻找更快的因特网接入的客户来说,他们必须在非对称数字用户线路(ADSL)技术和 56K b/s 调制解调器技术之间作出选择。

最后,需要提醒的是 2000 年错误。如果你的系统还未做到符

合 2000 年,请记住,你必须在 1999 年底前做完更正,因而你可在 2000 年开始时继续使用这些系统。

2. Make Knowledge an Asset for the Whole Company

Although we live in the so-called Information Age, knowledge is the true asset. Information we have in abundance, piling up in databases and streaming onto desktops over broadband networks.

Knowledge, on the other hand, is information that has been edited, put into context and analyzed in a way that makes it meaningful--and therefore valuable to an organization.

Immediacy is the driver of today's economy. Consequently, success in the marketplace flows to those organizations that can most quickly exploit their "tacit knowledge"--valuable things people know from experience, intuition or study. Organizations routinely make multimillion dollar decisions based heavily on the tacit knowledge of key individuals.

Often this sort of knowledge is widely dispersed and closely held, and most companies still have only a weak grasp of the breadth and depth of their collective intelligence. Knowledge flows through the company in a sluggish and erratic manner. And because it's typically stored only in individuals' memories, this knowledge is lost to the corporation when people leave the company.

If organizations are going to fully capitalize on their intellectual capital, they must devise systems for quickly compiling and retaining tacit knowledge, building intellectual inventories as individuals continue to learn and making these assets instantly available to the people who need them. Part of that is building a knowledge repository.

A knowledge repository might house transcripts or audio tapes from strategic planning sessions, consultants' reports in text or

multimedia formats, videotaped presentations, market trend analysis and any number of information rich resources. Knowledge stored in digitized form can be processed, indexed, searched, sorted, converted, retrieved and transmitted relatively easily and cost effectively.

Because knowledge is their core competence, IBM consultants, for example, routinely share ideas and solutions with one another through their own networks of professional contacts. But with thousands of consultants deployed across the globe, the informal networks can't possibly embrace the breadth of the organization's expertise.

IBM's response is to maintain dozens of knowledge repositories that correspond to the various specialized services that its consultants provide. Each repository contains intellectual capital--project proposals and work papers, engagement summaries, presentations and reports, process maps, software solutions and so forth.

Maintaining the repositories requires effort and discipline. The standardized format for new project plans forces consultants to indicate how they intend to reuse intellectual capital to execute an assignment. Afterward, consultants must specify in standard summary reports how they deployed existing knowledge resources to serve the customer and what new intellectual capital they have contributed to the repository.

IBM found that this process reduced the time spent preparing proposals by as much as two thirds and shortened the development of client deliverables by as much as 60%.

[译文] 使知识成为整个公司的财富

虽然我们生活在所谓的信息时代,但知识才是真正的财富。

我们拥有的信息非常丰富,堆积在数据库里,通过宽带网源源不断地流到桌面系统。

另一方面,知识是经过编辑、放在上下有关的文档中,并以一种使其变得有意义的方法分析过的信息。从而,对一个组织来说是有价值的。

即刻反应是今天经济的驱动力。因此,市场上成功的总是那些能最快利用其“无声的知识”(即人们通过经验、直觉或学习获得的有价值的东西)的公司。各组织日常做出几百万美元的决策,在很大程度上是依据关键人物的无声知识。

常常这类知识是广泛分散的、并(由个人)封闭拥有,多数公司目前对其集体智慧拥有的广度和深度都很弱。知识以一种缓慢的、无规律的方式在公司内流动。因为知识通常只储存在各个人的记忆中,所以当人们离开公司时,这些知识对公司而言也就失去了。

如果各组织要全面物化其知识资本,它们必须建立一种机制,能快速汇集和获得无声知识,随个人继续学习而建立起知识库存,并让这些财富对需要它们的人是能马上利用的。其中一部分就是建立知识仓库。

知识仓库可以装有战略规划研讨会的手稿或录音带、咨询人员的文本或多媒体格式的报各、讲演录像带、市场趋势分析报告,以及数量不等的信息丰富的资源。以数字化形式储存的知识,能够较为容易和有效节省成本地加以处理、索引、搜索、排序、转换、检索和传输。

例如,由于知识是 IBM 的核心能力,所以 IBM 的咨询人员日常通过自己的专业联系网,相互间共享点子和办法。但是,由于数以千计的咨询人员分布在世界各处,这种非正式的网络不可能囊括公司的专长。

IBM 对此的回答是维持几十个由顾问们提供的、与不同的专业服务相对应的知识库。每个库包含知识资本——项目建议书和

工作文件、约会的摘要、演示和报告、流程图、软件方案等。

维护这些库需要花力气和规范。新的项目计划的标准化格式,迫使顾问们说明他们是如何重复使用知识资本来完成任务。之后,咨询人员必须以标准的小结报告,来说明他们如何部署已有的知识资源来为客户服务,以及他们为仓库贡献了哪些新的知识资本。

IBM 发现,这一过程把准备建议书的时间减少了三分之二,把客户开发交付时间缩短了 60%。

3. Knowledge Management

The value in a company's information assets no longer lies in the ability to store and retrieve them but in the dynamic matching of the information to specific processes and unknown situations. Corporations are measuring their information assets by their ability to leverage that information to react to market demands more effectively than their competitions. This environment has led to demand for knowledge management.

By using knowledge management technology, organizations have already made startling achievements, such as the following:

- A supermarket chain increased sales of two very different product types by taking advantage of a unique relationship uncovered between the items – beer and diapers.
- A multinational pharmaceutical company cut out redundant research now that researchers are dynamically alerted to relevant or precedent knowledge that exists in house.
- A chemical manufacturer that opened its corporate knowledge base to the front-line sales force improved its level of customer service, resulting in shortened sales cycles.

The four basic functions of knowledge management are externalization, internalization, intermediation and cognition.

Externalization

Externalization is capturing knowledge in an external repository and organizing it according to classification framework or taxonomy. At the low end are technologies that simply provide a means to capture knowledge and store it online – for example, imaging systems and databases. Workflow technology provides a slightly higher level

of functionality.

The next level of externalization holds more powerful and promising search tools and document management systems that classify the stored knowledge and identify similarities among separate information sources. Building on this, a clustering approach can be used to identify hidden relationships or connections among separate bodies of knowledge within the corporate knowledge base.

Ultimately, the role of externalization is to make your captured knowledge available to knowledge seekers through internalization or intermediation. For example, an integrated document management and data warehouse tool used by a supermarket chain kept showing similarities in buying trends for beer and diapers. Managers confirmed the pattern, which led them to stock beer and diapers in close proximity. That led to an even more co-purchases.

Internalization

Whereas externalization seeks to discover the existence of similar bodies of knowledge, internalization tries to discover bodies of knowledge relevant to a particular user's need. With internalization, you extract knowledge from the external repository and filter it to identify what is relevant to the knowledge seeker. Internalization helps a researcher communicate a problem or point of interest and map that against the bodies of knowledge already captured through externalization.

In high-end applications of internalization, the extracted knowledge can be reformatted and presented in the most suitable manner, perhaps with some level of interpretation. For example researchers at an international pharmaceutical company might submit queries relevant to their project, quickly spot earlier research that

may be related to their efforts and receive a summary of the knowledge buried in numerous notebooks and reports.

Intermediation

Whereas internalization focuses on the transfer of explicit knowledge, intermediation brokers tacit knowledge. It matches a knowledge seeker with the best source of knowledge. By tracking the experience and interests of individuals, intermediation can link people who need to explore certain subjects with people who appear to harbor knowledge in that area. Consider a researcher in a pharmaceutical company. In response to a query about an unusual series of side-effects of a drug, the researcher uncovers few related documents within the corporate information base. But intermediation techniques provide the researcher with the name of another researcher in another country, whose interest profile (maintained by the system) indicates that he has experience with the same type of experiment. The two individuals then can share their experiences and knowledge of the potential causes of the side effects.

Intermediation is automated through technologies such as groupware, intranets, workflow and document management systems. The first two provide an underlying platform to facilitate communication between the tacit knowledge provider and knowledge seeker.

In the case of workflow, intermediation can be accomplished via two approaches. When the rules are clear-cut, intermediation is explicitly handled. For example, if incoming paperwork is from Korea, the accounts payable clerk might automatically be put in contact with the corporate expert on Far East trade. In a less explicit situation, the workflow system would suggest the most appropriate

individual to answer a question based on heuristic analysis of previous work performances by people in the organization.

Cognition

Cognition is the application of knowledge that's been exchanged through the preceding three functions and is the ultimate goal of knowledge management. Few technologies exist to automate the cognition process. Those that do typically employ an expert system or have an artificial intelligence component. Those systems make decisions on their own.

One insurance company uses an automated system that determines whether a worker's compensation case should be contested rather than paid. While stand-alone cognition systems are emerging, there is a parallel move to incorporate cognition in workflow. Typically, workflow is used to capture explicit process rules and logic. But if the workflow system was enabled to harness the knowledge captured in its audit trails over time, the workflow engine might be used to automate decisions based on similar occurrences.

For example, in an automated call center system, issues presented in a current case could be matched for similarities to preceding situations. Actions that worked well in the past would automatically be taken by the workflow system as a preferred approach.

The knowledge management technologies of tomorrow are likely to build on this foundation with visual tools that allow greater ease of navigation, more powerful and automated means of monitoring tacit knowledge, mechanisms for adding collective judgment to an information base, and more sophisticated tools for mining knowledge from uncharted sources such as audio and video. Despite the