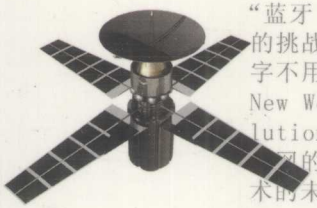
一部包罗万象的知识宝典　　一套营养丰富的文化大餐

◎ 主编／孙静确

BILINGUAL ENCYCLOPEDIA FOR TEENAGER

双语青少年百科

Communications 通信卷



“蓝牙”技术 Bluetooth Technology ·网络社会的挑战 Challenges for a Webbed Society ·打字不用键 Typing without Keys ·新型网络工具 New Web Tool ·无线革命时代 Wireless revolution ·数字图书馆 Digital library ·基于因特网的培训 Internet based Training ·信息技术的未来 The Future of IT

计算机的祖先 The Ancestor of the Computer ·黑客 Hackers ·“触感”鼠标 Fell It Mouse ·微软与比尔·盖茨 Microsoft and Bill Gates ·因特网 Internet ·电视与互联网 TV and Internet ·防火墙 Firewall

北方文艺出版社

双语

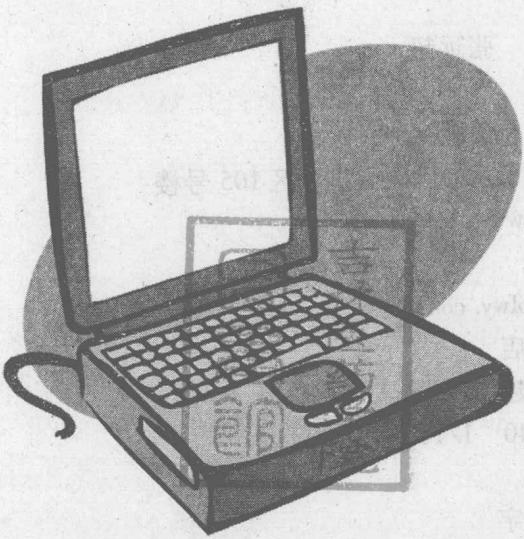
青少年百科

DOUBLE LANGUAGE

ENCYCLOPEDIA FOR TEENAGER

通 信

□主编 / 孙静确



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作　　者/孙静确
责任编辑/陈颖杰　张远超
封面设计/刘　玮
出版发行/北方文艺出版社
地　　址/哈尔滨市道外区大方里小区 105 号楼
网　　址/http://www.bfwy.com
邮　　编/150020
电子信箱/bfwy@bfwy.com
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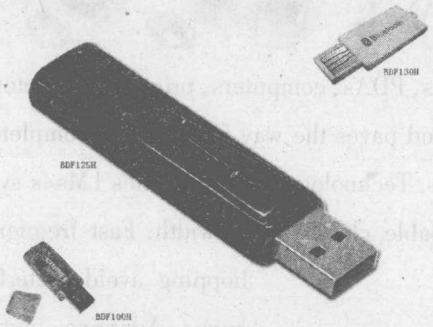
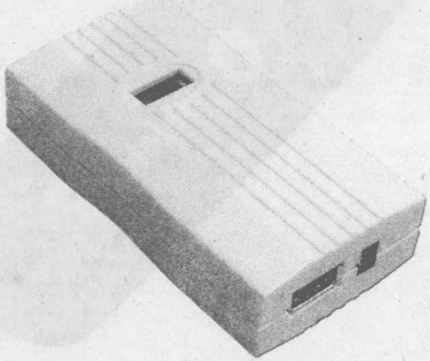
目　录

Bluetooth Technology
“蓝牙”技术

Bluetooth is an universal radio interface in the 2.45GHz frequency band that enables portable electronic devices to connect and communicate wirelessly via short-range, ad hoc networks. Each unit can simultaneously communicate with up to sever other units per piconet. Moreover, each unit can simultaneously belong to several piconets.



蓝牙是一个频率为2.45GHz的通用无线电通信接口，它通过一个特殊的网络可以在各种便携设备之间建立起无线连接并进行短程通信。在一个微微网中，每个单元都能同时与其他各单元进行通信。而且，每一个单元可以同时属于几个微微



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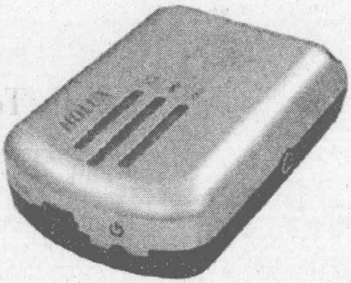
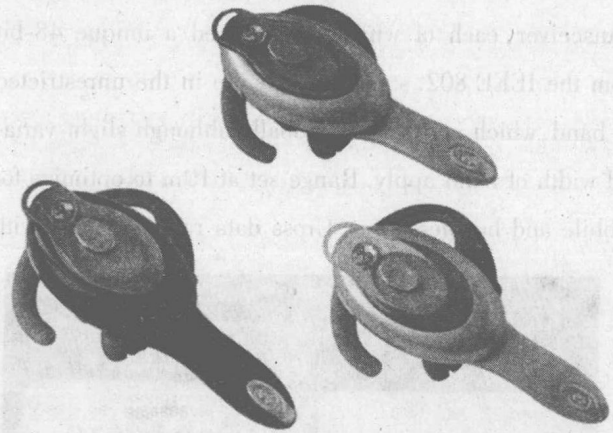


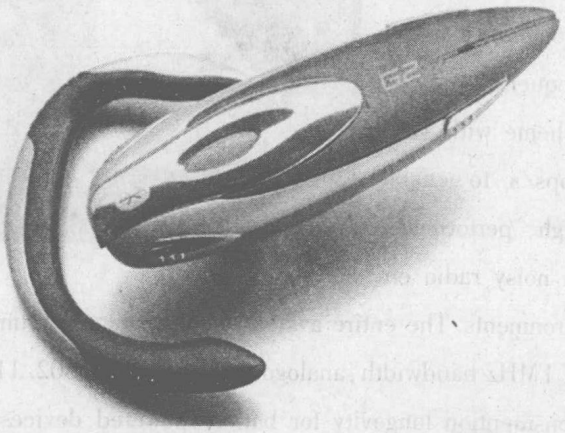
What is Bluetooth Technology? Bluetooth technology which apart from Ericsson, has gained the support of Nokia, IBM, Toshiba, Intel and many other manufacturers, eliminates the need for wires, cables and connectors for and between cordless or

mobile phones, modems, headsets, PDAs, computers, printers, projectors, local area networks, and so on, and paves the way for new and completely different devices and applications. Technology Characteristics 1Ms/s symbol rate exploits maximum available channel bandwidth. Fast frequency hopping avoids interference. Adaptive output power minimizes interference. Short data packets maximize capacity during interference. Fast acknowledge allows low coding overhead for links, CVSDM (Continuous Variable Slope Delta Modulation) voice codingenables operation at

high bit-error rates. Flexible packet types support wide application range. Air interface is tailored to minimize current consumption.



何谓“蓝牙”技术？“蓝牙”技术最先是由爱立信开始研制的，现在已经得到了诺基亚、IBM、东芝、因特尔及许多其他相关制造厂家的支持。其目的是为了免除在无绳电话或移动电话、调制解调器、头套式送/受话器，PDAs、计算机、打印机、幻灯机、局域网等之间加装电线、电缆和连接器。而且，这种技术可以延伸到那些完全不同的新设备和新应用中去。

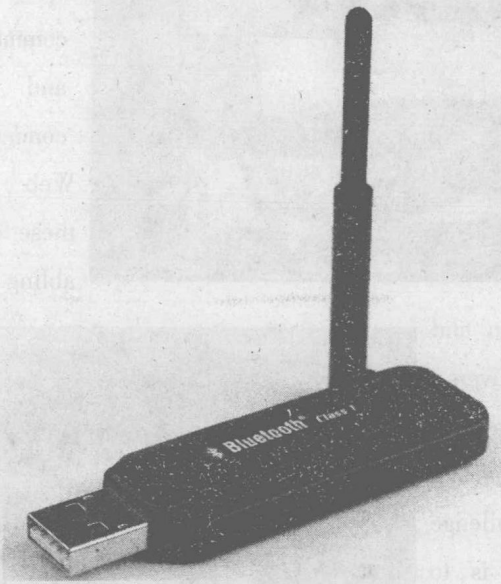


“蓝牙”的技术特性——以每秒 1M 个码元的字符速率传输，充分利用信道的最大有效带宽，快速跳频避免干扰，可变的电源输出使干扰减少最小，采用短数据包传输增强抗干扰能力，快速确认允许有附加低速率的编码被发送到链路上，连续可变斜率增量调制的语音编码可以在高误码率的

情况下正常工作，灵活的分组类型支持多种应用，无线电空中接口使电耗达到最小。

Basic Technical Information—Based upon a small, high performance integrated radio transceiver, each of which is allocated a unique 48-bit address derived from the IEEE 802. standard. Operate in the unrestricted 2. 45GHz ISM free band, which is available globally although slight variation of location and width of band apply. Range set at 10m to optimize for target market of mobile and business user. Gross data rate 1 Mbit/s with second generation plans to increase to 2Mbit/s. One-to-one connections allow maximum data transfer rate of 721kbit/s Uses packet switching protocol based on frequency hop scheme with 1600 hops/s to enable high performance in noisy radio environments. The entire available frequency spectrum is used with 79 hops of 1MHz bandwidth, analogous to the IEEE 802. 11 standard. Low power consumption longevity for battery powered devices. During data transfer the maximum current drain is 30mA. However during pauses or at lower data rates will be lower.

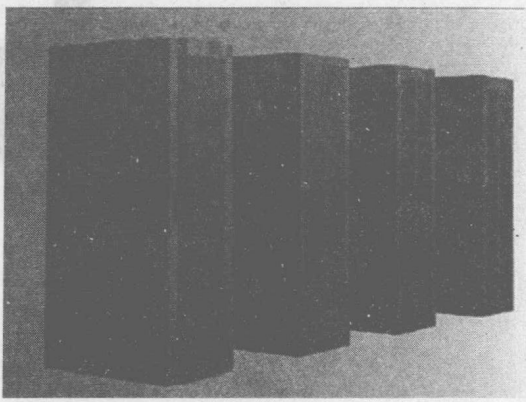
“蓝牙”基本技术需要每一个小型、高性能、集成的无线电收发机都有 IEEE 802 标准所规定的一个惟一的 48 比特位地址开放的 2.45GHz ISM 自由频段，全球都可以自由使用。10 公里是最适用于移动通信市场和商业用户的通信范围，总速率为 1Mbit/s，计划下一代产品将达到 2Mbit/s。点到点连接允许的最大数据传输速率为 721kbit/s，在无线电噪声环境里，利用基于每秒 1600 跳跳频表的分组交换协议可以提高系统性能。以 1MHz 带宽 79 跳来利用这个完整的可用频谱，这类似于 IEEE 802.11 标准，低电能的消耗。数据传送时电流的最大消耗为 30mA。当暂停工作或低速传送数据时电流消耗更低。



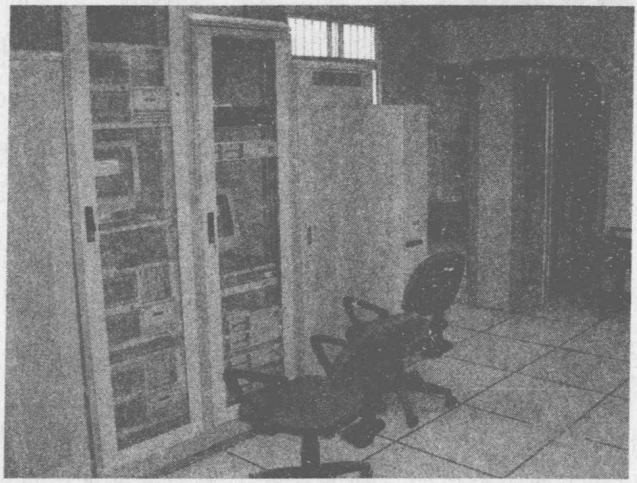
Challenges for a Webbed Society

网络社会的挑战

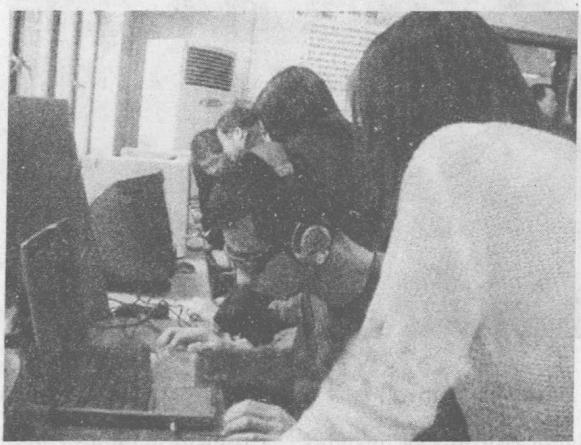
There are subtle, complex changes taking place in human communication, thought, and relationships within online communication and information communities. The Web is part of these changes, enabling new forms of communication and information delivery, and bringing up new associations among people. One challenge for our society is to find a solution to the questions raised by these changes. How



might our culture, society, and communication patterns change as a result of widespread Web use?



在网络通信和信息社会中，人类的通信、思维及相互关系正发生着微妙而又复杂的变化。互联网是这些变化的一部分，带来了通信和信息传送的新形式并促使人们之间产生了新的联系。我们社会面临的一个挑战就是如何解决这些变化引起的问题。随着互联网的广泛应用，我们的文化、社会和通信方式会如何改变呢？



Vannevar Bush, in an article called "As We May Think" in the July 1945 issue of *The Atlantic Monthly*, described his vision of a device for helping the human mind cope with information. Bush observed that previous inventions expanded human abilities to

deal with the physical world, but not floods of information and knowledge.

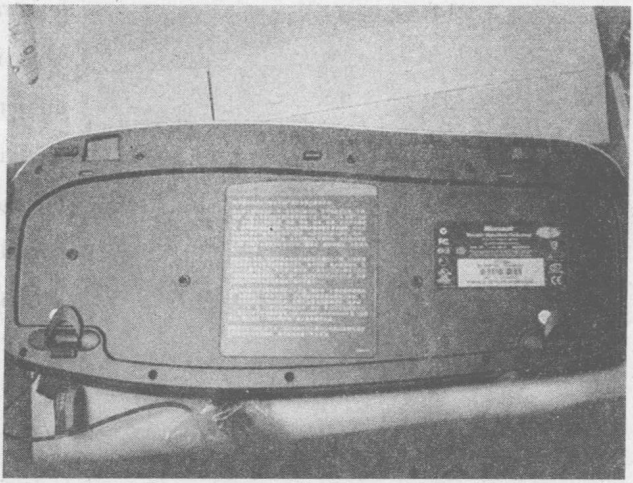
Bush's vision was for a system of information, which could link documents in "trials" that could be saved and shared with others.

凡勒瓦·布什在《亚特兰大月刊》1945年7月号上发表的一篇名为"我们将如何思维"的文章中，描述了他所想象的一种能帮助人类大脑处理信息的装置。布什认为，以前的发明提高了人类对物理世界的处理能力，但并未提高处理大量信息和知识的能力。他所幻想的是一种信息系统。该系统能够按"线索"将文件联系起来并能储存和与他人共享。

The Web fulfills Bush's dream in many respects. It can link information in useful ways, giving rise to new insights—a transformation of information to knowledge that Bush described in terms of applications in law,

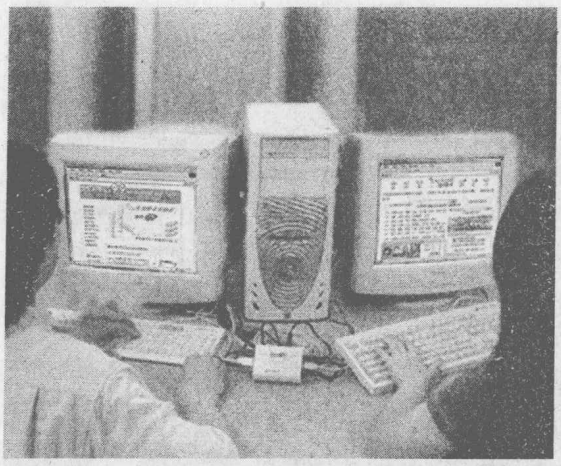
medicine, chemistry, and history.

网络在许多方面实现了布什的梦想。网络可以有效地联结信息，从而引发新的见解的产生，即信息向知识的转化，关于这一点，布什就其在法律、医疗、化学、历史等领域的应用作过描述。

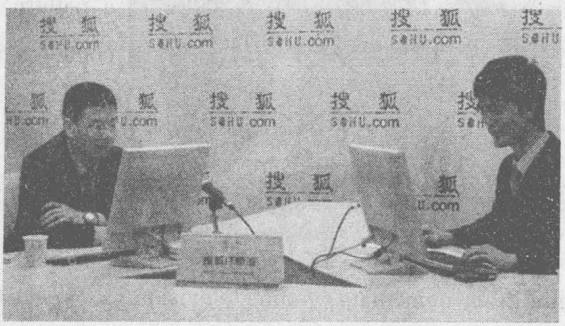


In addition to fulfilling many needs identified by Tetsurd Tomita. In his essay "The New Electronic Media and Their Place in the Information Market of the Future," Tomita observed a pattern in the way traditional communications methods were used to reach audience. Methods such as letters, telegrams, and conversation reach a very small audience in amounts of time ranging from immediate (radio, television) to weeks (magazines) to months (books). But the middle range—audiences of 10 to 10,000 people

reached within times ranging from immediate to a day—is a gap filled by few traditional media. This is too small an audience for mass media and too large an audience for personally controlled (traditional) media. Yet this is the audience and time delay gap that many forms of computer-mediated communication fill, including the Web.

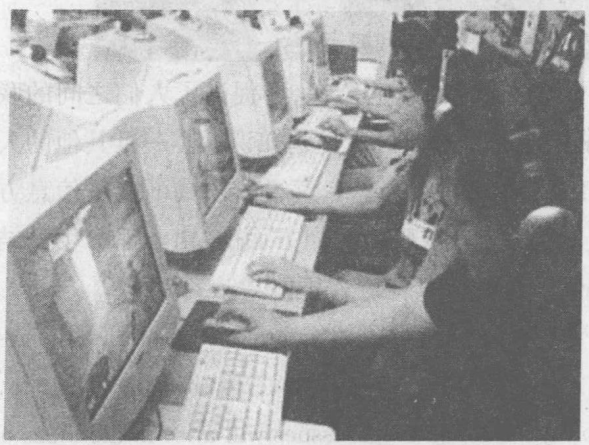


网络除了满足布什所认定的人类智力活动的许多需求之外，还能填充特楚罗·托米塔定义的“媒体死角”。特楚罗·托米塔在他发表的《新电子媒体及其在未来信息市场的地位》一文中分析了传统通信方式联系大众的模式。信件、电报和电话等方式所联络的人数非常少，时间范围从瞬间至数日（如信件）。大众媒体，如电台、电视台、报纸、书籍、电影等，能联络到广大群众，时间从瞬间（如电台、电视台）到数周（如杂志）或数月（如书籍）。然而中间段的人群即从瞬间至一天能联络上的10人至10 000人却成了死角，传统媒体几乎无法联络。这一群体对大众媒体而言人数太少，对个人控制的（传统）媒体来说人数又太多，



而这正是许多计算机传递通信方式，包括互联网，能够填补的群体和时间段的死角。

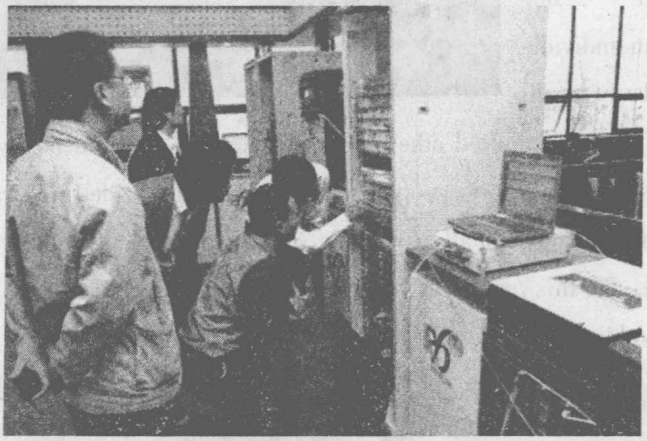
The web offers immediate delivery of information to specialized audiences. Before the invention of computer networks, an individual could not easily seek out several hundred others interested in a specialized hobby or area of interest, when those people were spread worldwide. No traditional media offered a personally available means to accomplish this. But the Web does fill this "media gap," and this feature is certainly a contributor to the Web's popularity and growth.



互联网向特殊的群体提供瞬间信息传递服务。在计算机网络发明之前，个人无法轻易地找到分布在全世界的几百个有着某一特殊爱好或兴趣的人。传统的媒体不能向个人提供一种能完成此事的工具，但互联网的确能够填补这一"媒体死角"，而这

一特性促使了互联网的普及和发展。

Associative linking promotes relationships among people in addition to relationships among inforrmtion. Experts in a particular field create pools of knowledge on their home page. When other people link into these pages, groups of experts form. These groups might be based on information or on hobbies, interests, culture, or political leanings. The result is that "electronic tribe" can form that gather people in associations that could not be possible in any other way.



结合性的联结不仅促进了信息的传递,还促进了人们之间的联系。某一领域的专家在他们的主页上建立起知识库。一旦其他的人联上这些主页,专家组就形成了。这些专家组的领域可能是信息方面的,也可能是嗜好、兴趣、文化或政治倾向方面的,由此而产生的结果是形成了"电子部落",集结了其他方式不能集结的人群。

As the Web alters communication and information patterns, the resulting change raises issues our society must face for individual, group, and societal responsibility. Moral and legal issues will arise in the areas of individual behavior, societal responsibility for issues of access and information literacy, and the new relationships, communications, and thought