

Software for the Agile Business.



ScienceNet finds the perfect way to make information more accessible

Company Profile

ScienceNet (www.sciencenet.com.au) is a non-profit Australian Web site that hosts a large collection of bacteriology information for scientists working in the field of microbiology. The Web site is a place where scientists from around the world can learn how to classify, group, identify and discover industrial uses for all sorts of bugs and bacteria.

Started by Australian scientists Dr Bill Maskill and Dr Karl Bettelheim, and business consultant, Barbara Wagstaff, the site was launched in November 1996 with the objective of providing a quality microbiological information service. Since its launch, the site has become extremely well-known and well-respected in the microbiology field worldwide and is often quoted in scientific journals and research publications. It currently receives up to 80,000 hits each week, confirming its popularity and usefulness amongst the scientific community it serves.

Business Scenario

Researchers in the field of microbiology are often in need of information about biological microorganisms. Part of ScienceNet's obvious success is that it has been able to provide that information in an up-to-date and well-structured format. However, the site assumes that users already have a reasonable understanding of the bacteria they wish to study, especially with regard to how they might be classified. Microbiologists are aware that bacteria are generally grouped into major subgroups called Gram Positive or Gram Negative – a categorisation based on how well they retain a violet-staining pigment – and then further categorised by scientific family names like Legionellaceae, Mycobacteriaceae or Pseudomonadaceae. Within each of these family names, links exist to specific strains of bacteria. Once a user finds the particular bacteria of interest, the site provides a set of structured profiles for each organism. The same sets of headings are used for all organisms so that comparisons of various bacteria can be easily made.

So, if a user wished to find information on, say, Salmonella bacteria, they would enter the Web site, navigate to the Gram Negative section, click on Enterobacteriaceae (of which Salmonella is a member) and then click through to the Salmonella page. Once the target page is located, users can obtain detailed information on the organism's

"Smart Tags are a logical and useful means for non-technical users to directly access the material stored on our ScienceNet Web site. They require almost no technical knowledge to use – just type the name of a bacteria into a Word document and the Smart Tag enables the user to jump directly to the information they want on the Web site. It is a very, very simple and effective technique."

Bill Maskill,
Victorian Infectious Diseases
Reference Library

Organisation

ScienceNet

Web Site

www.sciencenet.com.au

Industry

Epidemiology and Public Health

Business Scenario Summary

The ScienceNet Web site was started in 1996, and provides an informative service to microbiologists all over the world. Using the site requires some degree of specialist knowledge of bacteria classifications, and the need to navigate through several levels to find the required detail.

biochemistry, genetics, industrial uses and a host of other features.

Dr Maskill explains: "The site just grew from a desire to share some information with others. It started out as a bit of a hobby and just grew in popularity, so I think anything that makes it easier for more people to use is a good thing." While the majority of visitors to the site are well-versed in microbiology, many are relatively non-technical users in terms of IT skills. When these users come looking for information, this process of manually browsing through the site created an additional layer of complexity. Although the site is not overly difficult to navigate, Dr Maskill was open to any suggestions which would improve the usability of the service.

Business Solution

One suggestion for improving the site's usability came in the form of a chance meeting with technology consultant Dr Peter Stanski, the founder of Stanski Consulting (www.stanski.com). Dr Maskill was attending a Microsoft® Visual Basic® .NET course at Monash IT that Stanski was teaching and they began chatting about various projects in which they were both involved.

Stanski's work affords him the opportunity to work very closely with Microsoft, and his consultancy work revolves around providing solutions using Microsoft technologies. As Maskill and Stanski talked about the ScienceNet project over a coffee, it became obvious to Stanski that Microsoft's Smart Tag technology could provide an ideal solution to simplifying access to myriad pieces information held within the ScienceNet Web site.

Smart Tags really are smart

Smart Tags are a feature of Microsoft® Office XP, and provide a means by which certain information such as names, dates, places, telephone numbers – and even bacteria – can be identified and connected with appropriate actions. For example, with the Smart Tag technology built into Office XP, typing a person's first and last names into a Microsoft® Word document enables the software to recognise those two words as a person's name, that is then indicated by a series of purple dots below the text. A small pop-up tag then provides appropriate options – send mail, schedule a meeting, add the person to the contact list and so on. Smart Tags can recognise a multitude of data types, and then apply a range of actions to them. This apparent intelligence on the part of the software is achieved using XML, so the range of ways in which Smart Tags can be applied is fairly limitless.

Going directly to the source

Because their use is completely extensible, Smart Tags provided an ideal solution for ScienceNet. By creating a series of Smart Tags based on bacteria names, Stanski could enable users to simply type the bacteria's name into a Word or Excel document, or an Microsoft® Outlook® email, and then select the chosen characteristic from the Smart Tag menu. Each of these characteristics would then be hyperlinked to an anchor-point on the relevant Web page back at ScienceNet, thereby jumping the user directly to the particular category

Business Solution Summary

Using Microsoft Office XP Smart Tags, users are able to type the name of a bacteria directly into a Word or Excel document and use the Smart Tag to hyperlink directly to the relevant part of the ScienceNet Web site.

in which they were interested.

Well-structured data is the key

“Having a well-structured pool of data is the only real requirement to making Smart Tags work,” says Stanski. “The information already held on ScienceNet lent itself to the project nicely, because Bill had done an excellent job of building the reference system in a structured way. Every microorganism had exactly the same list of headings used for defining its characteristics, so the data structure was very consistent, enabling the use of the same basic menu choices for each.”

Stanski goes on to say: “There are probably other Web sites out there that contain useful information on a range of topics, but most of them are not as well-structured as ScienceNet. It really is the key to making Smart Tags work well.”

Ensuring success with a Microsoft Certified Partner

Stanski Consulting provides leading-edge Strategic Planning, Consulting, Training, Software Development, Web Services, Hosting and Wireless services. They build their solutions on the Microsoft .NET platform and specialise in technology convergence issues. They have developed solutions for the mobile market, especially SMS, wireless Internet, and the next generation of Web services. Stanski Consulting is one of the founding organisations behind the Victoria .NET Cluster initiative that is responsible for enabling information and communication technology across a range of industry sectors.

That the company’s founder, Dr Peter Stanski, has extensive experience with Microsoft technology has also recently been formally recognised through his appointment as a new Microsoft Developer Network (MSDN®) Regional Director – www.microsoft.com/rd. MSDN Regional Directors are independent developers, architects or trainers who provide a vital link between Microsoft and the developer community. Their technical expertise provides important insights and informed perspectives needed to develop .NET connected solutions.

Benefits

The benefits of ScienceNet’s Smart Tag solution are almost self-evident. They greatly increase the availability of the information held on ScienceNet, making it extremely simple to provide access to specific bacteria facts directly from within a Word or Excel document. A user can be creating their document in Microsoft Word and as soon as they type the name of a microorganism which is part of the designated list of Smart Tagged bacteria, the Smart Tag icon appears next to the name. A mouse click on the icon brings up a menu with the following choices – Definition, Classification, Biochemistry, Genetics, Serology, Virulence, Normal Flora, Laboratory ID, Environmental, Industrial Uses and Vaccines. The elegance and simplicity of the solution means that the site is more accessible to users who require microbiological data but may have had trouble knowing exactly where to look, as well as streamlining the search for information for non-technical users.

Room for Growth

The ScienceNet Web site is dynamic. Dr Maskill welcomes anyone with

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Partner Details

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Benefits

The solution greatly streamlines the search for microbiological information. Finding information on a particular bacterium is now as simple as typing its name and then jumping to the required information on the Web site. Searches which previously would have required a working knowledge of microbiology are now reduced to a mouse click. It has made the site far more accessible to a wider range of users.

Microsoft®

expertise in the field to contribute to the site's body of knowledge, and the offer is always open for others to write new bacterial profiles. The beauty of the site's structured approach is that as long as new profiles conform to the accepted format and depth of information, they can easily be included in future Smart Tag updates.

Technology

Customised Smart Tags for use in Microsoft Office XP are created by using Extensible Markup Language (XML); this allows them to be customised for almost any purpose. The Smart Tags created for ScienceNet are more correctly called Smart Tag Lists and are designed to recognise a static list of terms and make use of Web-based actions – in this case, jumping directly to the relevant page on the ScienceNet site. Like most good ideas, it is the sheer simplicity of this solution which makes it so compelling.

The Smart Tag must be installed on the user's computer, and this is easily achieved by downloading and installing a small file. Once installed, it seamlessly provides the new functionality to Microsoft Word and Excel – just type a bacteria name and up pops a list of characteristic references stored on ScienceNet. Click on one of these characteristics and it hyperlinks you directly to the correct section of the information about that bacteria. It is that easy.

Development of Smart Tags is simplified with resources like the Office XP Smart Tag Software Developers Kit and Smart Tag Tools, both available from the Microsoft Web site.

Maximising Success

There are many other uses for Smart Tags apart from the standard ones supplied with Microsoft Office XP, many of which can be downloaded from the Microsoft Office Web site. Some examples are: measurement converters, enabling you to type a number in inches and have it converted to another unit, such as centimetres; stock tickers, enabling a stock symbol to be identified by Word and then providing a direct link to the most current share prices; even Smart Tags that can recognise the names of major league baseball teams and then take you directly to the results of their most recent games. Smart Tags are such a simple idea but they offer such a huge range of potential uses.

The Future

With the success of the Bacteriology collection, the ScienceNet Web site is currently developing two new sections, one on Virology and the other on Parasitology, hoping to take the original concept and extend it into other areas. The use of Smart Tags will be capitalised on and their functionality extended to these new areas.

In Microsoft Office 2003, Smart Tags have been further extended into Microsoft® PowerPoint® and Microsoft® Access, as well as being enhanced with new features like Cascading Menus and Dynamic Captioning, providing the basis for Smart Tags to afford an even richer user experience in the future.

Microsoft Technology

- Microsoft Office XP
- Microsoft Smart Tags



For more information

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