The development of a World Wide Web information resource for farmers with specific reference to yoghurt production

By

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Summary

Agricultural conditions in South Africa have changed considerably over the last number of years. To enable farmers to stay on their farms and survive, many are turning to new ventures, such as processing and marketing farm produce themselves. To do it successfully, they need information. Although sources of agricultural information are available, they are often not really suitable to meet this need.

Agrelek has been advising farmers for many years on the effective use of electricity in agriculture. After consultation with Agrelek, it was decided to develop FARMPRO, a prototype web site and a CD-ROM, on making yoghurt on the farm., because many farmers have surplus milk which can be used to make a variety of yoghurt types.

Farmers have specific information needs and their information seeking behaviour is unique. Information seeking behaviour models were considered and a new model was developed. The information needs of dairy farmers were determined by applying a framework for assessing information needs. The aspects on which information will be useful was established.

Against this background, all aspects relating to the design of a web site suitable for use by the target group was identified. Desktop multimedia was selected as the most suitable medium for making the information available. Because the number of farmers using the Internet is increasing, it was decided to make this information available on the World Wide Web, but also on CD-ROM. Structures for constructing a web site were compared and the most suitable selected. HTML and *Dreamweaver* was used for the construction of the web site. The use of an Electronic Performance Support System (EPSS) was considered, but could not be implemented due to technological and time constraints. Aspects relevant to text design, screen design and navigation, were considered and choices made for the design a suitable information resource.

The actual development and evaluation of the prototype web site was done in three phases. Both formative and summative evaluation methods were used. The first two phases were evaluated by class mates and a few individuals. The third phase prototype was evaluated by twenty-five evaluators, representing food scientists, agricultural engineers, dairy farmers, language and design experts and novices. A questionnaire was made available on the World Wide Web, together with the prototype web site. Questions were divided into : content, navigation, ease of use, and overall impression. Responses to the questionnaire were analysed and changes made as far as possible in reply to comments and suggestions by the evaluators. A final version of the prototype web site was completed.

A number of conclusions can be drawn from experience gained during the development of the web site. It is very important to understand the target group: their characteristics, information seeking behaviour and information needs, to be able to cater specifically for their needs. The availability of agricultural information in a suitable format for all groups in the farming community, also those who are not computer literate or have access to computers or the Internet, have to be considered.

Topics on which future web sites can be developed, must be identified. The best possible medium for making information widely available must be selected. When the prototype web site and the CD-ROM become more widely available, it is anticipated that it will become clear which direction future web sites should take.

List of terms: dairy farmers, yoghurt preparation, web site, information resource, information needs, information seeking behaviour, screen and text design, navigation, EPSS, evaluation.

Opsomming

Landboutoestande in Suid-Afrika het aansienlik in die laaste paar jaar verander. Om boere in staat te stel om op plase aan te bly, word nuwe metodes om te oorleef op die proef gestel, soos die prosessering en bemarking van plaasprodukte. Hiervoor word inligting benodig. Alhoewel landbouinligting beskikbaar is, beantwoord dit nie altyd aan die behoeftes van hierdie boere nie.

Agrelek adviseer boere al vir 'n geruime tyd oor die effektiewe gebruik van elektrisiteit op die plaas. Na konsultasie met Agrelek is besluit om FARMPRO te ontwikkel. Dit is 'n prototipe webwerf en CD-ROM, oor die maak van jogurt op die plaas. Baie boere het surplus melk wat gebruik kan word om 'n verskeidenheid soorte jogurt te maak.

Boere het spesifieke inligtingsbehoeftes en hul inligtingsoekgedrag is uniek. Verskeie inligtingsoekmodelle is oorweeg en 'n nuwe model is ontwikkel. Die inligtingsbehoeftes van suiwelboere is bepaal deur die toepassing van 'n raamwerk vir die bepaling van inligtingsbehoeftes. Die aspekte waaroor inligting deur die teikengroep benodig word, is bepaal.

Teen hierdie agtergrond, is van alle aspekte van die ontwerp van 'n webwerf, geskik vir die teikengroep geïdentifiseer. *"Desktop"* multimedia is gekies as die mees geskikte medium vir die beskikbaarstelling van die inligting . Omdat die aantal boere wat die Internet gebruik toeneem, is besluit om die inligting ook op die *"World Wide Web"*, en op CD-ROM beskikbaar te stel. Strukture vir die konstruksie van 'n webwerf is vergelyk, en die mees geskikte is geïdentifiseer. HTML en *Dreamweaver* is gebruik vir die bou van die webwerf. Die gebruik van 'n *"Electronic Performance Support System"* (EPSS) is oorweeg, maar kon nie geïmplementeer word nie as gevolg van tegnologiese en tydsbeperkinge. Aspekte van teksontwerp, skermontwerp en navigasie, is oorweeg en keuses gemaak om te verseker dat 'n inligtingsbron wat geskik is vir gebruik deur suiwelboere ontwikkel word.

Die ontwikkeling en evaluering van die prototipe webwerf is in drie fases gedoen. Beide formatiewe en summatiewe evalueringsmetodes is gebruik. Die eerste twee fases is geëvalueer deur medestudente en ‘n paar individue. Die derde fase is deur vyf-en-twintig evalueerders, wat voedselwetenskaplikes, landbouingenieurs, suiwelboere, taal- en ontwerpspesialiste en amateurs ingesluit het geëvalueer. ‘n Vraelys is op die *“World Wide Web”*, geplaas saam met die tesame met die prototipe. Vrae oor inhoud, navigasie, gemak van gebruik, en algehele indruk is ingesluit. Die antwoorde op die vrae is ontleed en veranderings is waar moontlik aangebring in ooreenstemming met aanmerkings en voorstelle van die evalueerders. ‘n Laaste weergawe van die prototipe webwerf is voltooi.

‘n Aantal gevolgtrekkings kan gemaak word na aanleiding van die ondervinding wat met die ontwikkeling van die webwerf opgedoen is . Dit is baie belangrik om die teikengroep te verstaan, sowel hulle eienskappe, inligtingsoekbehoeftes en inligtingsoekgedrag, sodat so ver moontlik aan hulle behoeftes voldoen kan word. Die beskikbaarstelling van landbouinligting in ‘n geskikte formaat aan alle groepe in die landbougemeenskap, insluitend die wat nie rekenaargeletterd is nie óf nie toegang tot rekenaars of die Internet het nie, moet ook in ag geneem word.

Die tema van toekomstige webwerwe moet geïdentifiseer word. Die mees geskikte medium om die inligting beskikbaar te stel moet gekies word. Sodra die prototipe webwerf en die CD-ROM geredelik beskikbaar word, sal dit duidelik word watter rigting toekomstige webwerwe moet inslaan.

Sleutelterme: suiwelboere, jogurtmaak, webwerf, inligtingsbron, inligtingsbehoeftes, inligtingsoekgedrag, skerm- en teksontwerp, navigasie, EPSS, evaluering.

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