

## **Beginnings: New Media and the Welsh Language**

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The digital communications revolution and the explosion in the use of what is known as “new media” have created a sense of fundamental and unprecedented change in the way in which human beings communicate. However, it might be worth considering the paradox that revolutions in of themselves are not new things, even in the world of communications. All media were new at one time, and the pioneering work, innovation, disturbance and excitement were the same each time a new communication method emerged. With that perspective in mind, we can find a pattern of continuity even in this time of rapid change.

In Wales, the fate of the language was never far from the minds of those pioneers who sought to claim the new technologies for *Cymraeg*. The Welsh have proved eager to take advantage of new media as a means of saving their language from the ghetto of folk culture. In their willingness to embrace new technologies – the printing press, the journal, radio, film and television in turn – we have, I believe, one of the secrets of the language’s survival. As Jeremy Isaacs, former chief executive of Channel 4, commented in 1989 when looking back at the turbulent beginnings of S4C: “The language had a life force within it that could not be denied.”<sup>1</sup> Bearing in mind the lack of commercial incentive for providing media in Welsh, we can only wonder at the determination of the supporters of the language who have adapted it to every new situation. The historical pattern is clear: the language – or, more correctly, its community of adherents – has remarkable vitality. It is no exaggeration, therefore, to talk of a “life force.” I am reminded of T. S. Eliot’s comments regarding the survival of

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<sup>1</sup> Jeremy Isaacs, *Storm Over 4: A Personal Account* (London: Weidenfeld and Nicholson, 1989), 92. Noted in John Davies, *Broadcasting and the BBC in Wales*, (Cardiff: University of Wales Press, 1994), 389.

Welsh: “it is the instinct of every living thing to persist in its own being.<sup>2</sup>” What follows, therefore, is an attempt to measure the strength of that instinct in the age of digital media.

As an introduction, here is one author’s vision of the future of the Welsh media back in 1957:

The following morning, after breakfast, I happened to ask Mistress Llywarch for the newspaper.

‘Well, let’s see,’ she said. ‘It’s nearly ten o’clock now. *Alfan* received *Y Negesydd* this morning before going out, but it’s time for the *Cardiff Herald* now if you’d like that.’

‘Why, d’you have a paper delivery on the hour?’ I asked.

‘Oh no, it’s much simpler than that.’

Mistress Llywarch walked to the wall by the window, turned a knob, and inserted a coin in a slot. I’d already noticed that there was a type of screen, similar to a cinema screen but not so large, and I’d presumed that it was a sort of television. But I hadn’t seen it working yet. Mistress Llywarch placed three or four sheets of paper on the screen.

‘You’ll see now how we get our newspapers,’ she said.

There came a low hum from the screen, and one by one, the sheets of paper dropped into a kind of tray in front. Mistress Llywarch picked them up and placed them in my hand. I stared at them. In my hand I held three or four sheets of a newspaper, with print and pictures – similar in all respects to a newspaper, but printed on one side only.

‘A newspaper through the radio?’ I asked.

‘Exactly. That’s how we get our papers these days.’

That, of course, is part of the idealized Wales of the future, in Islwyn Ffowc Elis’ novel *Wythnos yng Nghymru Fydd* [*A Week in Future Wales*], set in the year 2033.<sup>3</sup>

What is interesting is that the novelist foresaw an electronic technology which could broadcast newspapers to a screen in the home - a very percipient vision when it is considered that in the 1950’s such technology was decades away. The novelist’s vision is a combination of the daring and the familiar. Although sending text in electronic form was revolutionary, the novelist’s idea of how the paper would arrive is patterned on the familiar model of radio or television broadcasts, with times allocated to particular issues. He did not foresee the ability of digital technology to send a variety of material on demand

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<sup>2</sup> T.S.Eliot, *Notes Towards the Definition of Culture* (London: Faber & Faber, 1948), 128.

<sup>3</sup> Islwyn Ffowc Elis, *Wythnos yng Nghymru Fydd* (Cardiff: Plaid Cymru, 1957), 80.

simultaneously. However, the idea of a home screen offering text and pictures on demand by electronic means is close to the mark.

Note, in the context of this novel, that this vision of the development and prosperity of modern Welsh media is driven by a deep desire to safeguard the language. In the case of the novel the aim was to see a daily Welsh-language newspaper, an ambition which has so far proved elusive, even when there were about a million Welsh speakers at the turn of the twentieth century, yet an ambition which is still alive and which may well come to fruition during the next 12 months, through the work of the Dyddiol company, led by Ned Thomas, which is bringing such a project close to the point of launch.

While wishing that important traditional-media venture every success, this study shall concentrate on the new electronic media foreseen in the novel. In this respect, it is pleasing to note that the Welsh language mastered this new medium some 30 years before the timescale set by the visionary novelist. The BBC's comprehensive Welsh on-line service, BBC Cymru'r Byd, came into existence not in 2033 but on St. David's Day, 2000.

It is interesting, and encouraging, to record that the Welsh service was launched virtually simultaneously with the BBC's corresponding service in English for Wales. Indeed, as both services developed, the Welsh service often led the English with many new developments. Neither did its creation require external protests or lobbying as was the case, for example, with S4C. It evolved naturally as part of the corporation's public service – perhaps a measure of the degree to which the practice of providing Welsh media has developed and normalized, helped by the new political climate following the devolution referendum in 1997, which released additional resources to BBC Wales to respond to the new conditions of a devolved nation.<sup>4</sup>

The launch of Cymru'r Byd as a complete service in Welsh was the fruit of a lengthy period of preparation and consultation within the BBC in Wales and the UK. The service's title itself was chosen following a competition among Radio Cymru listeners. The 'Cymru'r Byd' title was chosen because it was understood to contain a possible reference to O. M. Edwards' pioneering magazine, *Cymru*,<sup>5</sup> first published a century or so earlier; together with the words "y Byd," meaning, "The World," which were felt to emphasize that this service was available everywhere, not just within the reach of Wales' television

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<sup>4</sup> One should also note the debt to individuals such as Geraint Talfan Davies, controller of BBC Cymru at the time, and Keith Jones, now head of Welsh programs for BBC Wales, for their vision and persistence in creating a credible bid for funding for the work.

<sup>5</sup> *Cymru*, published 1891-1927, (Caernarfon : Cwmni y Cyhoeddwy'r Cymreig).

and radio transmitters.<sup>6</sup>

The service launched with a core team of eight editorial and technical staff, offering a service across a wide range of activities and interests, bringing existing websites, such as the *Pobol y Cwm* site and the output of BBC Wales' substantial on-line education department, under the same roof, together with an on-demand stream of the *Newyddion* program and a live continuous streamed broadcast of Radio Cymru.

Central to the service was the use of the content production system – CPS – devised for BBC News Online, launched in 1997. Having gained access to this system, it had to be adapted for Welsh – a considerable task, but one which meant the service could produce and publish stories instantly, adding on-demand video and audio clips from radio and television news programs. In using the CPS, the Welsh-language services could benefit from development work carried out by the BBC centrally, one of the many vital economies of scale the project experienced due to being part of the BBC.

There were many challenges. In terms of recruitment, the posts required a unique combination of the duties of a reporter, sub-editor, picture editor and audio and video technician. Intensive training was required to create a new type of Welsh journalism. In terms of editorial agenda: it was decided that on each eight-hour shift each journalist would publish five main pieces: the three main Welsh stories, and the chief stories from Britain and the world, a distribution of effort patterned on the priorities of the existing *Newyddion* television program and the Radio Cymru bulletins. These priorities would change in time, as will be seen.

With each journalist's desk carrying some £2,000 worth of equipment, it was possible to broadcast a comprehensive news service, with text, pictures, audio and video, relatively inexpensively. But it should be remembered that this cost-effective model was based on reprocessing much material from existing and successful radio and TV news services in Welsh. The service stood on the shoulders of its predecessors, an important principle for the development of Welsh-language media generally. The strength of current media underpins new ventures, and there is a pattern of cumulative success both in the provision of content and in the creation and development of an audience.

Naturally, there was a great deal of uncertainty as to how successful the service would be. At the time, around 25 percent of the Welsh population had

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<sup>6</sup> The author, who has been involved with Cymru'r Byd since before its launch, took part in the process of selecting the name.

web access. In addition, the task of *reading* Welsh was more of a challenge to the skills of some members of a minority language community than was watching television or listening to the radio. A target of 5,000 page impressions per week was set. It was a pleasant surprise, therefore, when that target was exceeded tenfold, at 50,000 a week. Figures never fell below that level; rather, they increased steadily.<sup>7</sup>

User figures can be analyzed in more detail shortly. For the moment, it is worth considering something statistics cannot measure: audience appreciation. This new medium revealed widespread demand for its services, particularly among Welsh

speakers<sup>8</sup> outside Wales. There follow some comments received in the immediate aftermath of the establishment of the service; the folksy nature of these messages was typical rather than exceptional. In this transaction, it appeared that new media and old loyalties were not so much colliding as co-traveling:

From England (translated from Welsh): "I live near Cambridge, and I have been away for twenty years and more. But I haven't forgotten the old language, and I would like to think that the old country has not forgotten me, either. Best of luck to you."

From Patagonia (translated from Welsh): "Thank you for your praiseworthy service. All the Argentine Welsh look at the Online News. It is great to hear about the Old Country."

One feature particularly appreciated was on-demand audio and video, as shown by this message from New Hampshire, USA (translated from Welsh): "It was a great honor for us tonight to listen to Garry Owen reading the "News" so excellently in pure South Wales Welsh. We thank BBC Cymru for this venture that enables exiles like us who live in a small village in the United States to be a little closer to Wales. It was strange to sit by the computer and listen to accounts of the river Towi and about '*Merched y Wawr*' - it was as if we were sitting in the kitchen in Cwm Gwendraeth. It will be an honor for us to listen and watch every night the on-line news from Wales.

Many messages were received from people aware of the cultural significance of this venture, such as this user from Wales (translated from Welsh): "Getting started is always the main obstacle. . . .A good choice of day [St.

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<sup>7</sup> Weekly and monthly reports of the BBC's own statistics and audience research departments.

<sup>8</sup> I use the term "Welsh speakers" rather than "Welsh-speaking Welsh" because it is apparent that a considerable number of users are people who have learned the language without being of Welsh heritage.

David's Day] to launch this service which will be crucial to the Wales of the future, good fortune to you on a voyage that has no end. The debt of Wales and the language will be great to the pioneers of this new service."

Welsh learning material was extremely popular, as with this user from Oregon, USA: "These Welsh lessons are the best I've come across to learn the language. Please produce more, I can't seem to get enough." A user from England: "I live in Middlesex so this is my only chance of learning the language as I can't receive the radio broadcasts."<sup>9</sup>

And neither were these users all Welsh-born exiles. Many were foreigners simply interested in the language, such as a student from the Czech Republic, or a young user from Russia, who learned Welsh after hearing it was the basis for J. R. R. Tolkien's linguistic interests.

When *Cymru'r Byd* was launched, it was described as "the first daily newspaper in Welsh,"<sup>10</sup> a striking metaphor emphasizing its cultural significance and catching the public's imagination. As both media depend on the written word and pictures and are available each day, the comparison was justifiable. However, there is, of course, a great deal of difference between a daily newspaper and *Cymru'r Byd*. *Cymru'r Byd* was never one daily edition; rather, it is continually updated, with at least 15 news stories published per day, as the news breaks, and some of them being updated several times a day. By mid-2004, at least 15,000 news stories had appeared, not counting news-in-brief items - all available in a searchable archive, and generating millions of page requests. That represents a great deal of reading taking place in Welsh, which must be considered a positive contribution to the language's future prospects.

The years since the launch have witnessed several important developments. More resources were obtained and an executive producer post created in 2001 to oversee the service, together with four more posts on local services and ancillary elements. There follows a brief note of some of the highlights of the service over the last few years.

**External partnerships.** Arrangements were created with each of the 58 *papurau bro* (community newspapers) in Wales. Each received its own website on *Cymru'r Byd* in return for one story per month appearing on the site. That represented 700 stories a year from grassroots communities. Another fruitful partnership with the *Herald*, Gwynedd's Welsh weekly newspaper, where *Cymru'r Byd* pays for ten stories and two pictures per week on a commercial

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<sup>9</sup> E-mails received by the author in his capacity as Executive Producer of *Cymru'r Byd*. Personal names have been removed for data protection reasons.

<sup>10</sup> BBC Wales publicity material, March 2000.

basis, representing a further 500 additional stories annually.

**Community services.** Under the title “Lleol i Mi” [“Local to Me”], five regional sites feature elements such as: the location of traffic cameras, weather town-by-town, traffic information, local history, stories, events. The audience’s appetite for local material seems insatiable, as Welsh speakers’ legendary loyalty to their home area is as apparent in cyberspace as it is elsewhere.

**Literature:** “Llais Llên” [“Voice of Literature”], an online magazine, reviews at least two Welsh-language books a week – now totaling hundreds of quality reviews in a searchable archive, together with author interviews. This site quickly became part of the Welsh literary scene, with quotations from Cymru’r Byd reviews appearing on dust jackets and book blurbs.

**Small Children:** A successful formula was discovered when the website of the popular children’s programme, the *Tweenies* was translated. Launched in spring 2002, it very soon became one of Cymru’r Byd’s most popular sites, attracting 1,300,000 page impressions during the eight months between January and August 2003. Developing this successful approach, sites such as the *Fimbles* and *Bob the Builder* were translated, and more are planned.

**Innovation:** One of the service’s great successes in terms of innovation and publicity were the virtual reality newsreaders, Gwern and Gwennan. Here, animation and lip synchronization technology gave faces to the voices reading the Radio Cymru news. They were nominated for a technology innovation award in 2002, received coverage in the main Welsh newspapers and even in the *Media Guardian*, which praised them as one of the high points of the BBC’s on-line provision generally.

**Digital Stories.** An important aim of the BBC’s new media services is to disseminate digital skills. An excellent example is the project “Cipolwg ar Gymru” [“Capture Wales”], where a team helps individuals create their own three-minute video stories, scripted and voiced by the contributors, using pictures and images from their personal collections. Here, new media relates to individuals’ lives in a very meaningful way as the storytellers relate narratives which are sometimes funny, sometimes quirky, and sometimes heartbreaking. The stories appear online, are played at corporate presentations across Wales, and some have been run as items on Radio Cymru, as the media of radio and online increasingly converge.

**Education.** Through BBC Wales’ education department – an additional team to the core Cymru’r Byd team – there are numerous pioneering educational websites: sex education; GCSE revision aids, and material for infants up to A

level students and adults. These are continually being enhanced.

**History:** “Cymru ar yr Awyr” [“Wales on Air”], offers clips from BBC Wales’ enormous audio and film archive as on-demand audio or video: 200 pieces of classic broadcasts from the past, with pictures, text and links. These include: the Aberfan disaster; David Lloyd George’s speech to the Eisteddfod at Denbigh in 1939 when the Second World War was imminent; the first ever Welsh broadcast, a song by the baritone Mostyn Thomas; interviews with the Penyberth Three; the voices of Richard Burton, Rachel Thomas, Jubilee Young, Sir Geraint Evans, and many others.

Having outlined the nature of some of the content, the question of the usage figures can be considered in greater detail. Here an attempt will be made to identify some trends which allow a study of the nature and behavior of the first-ever general on-line audience in Welsh.

The first measure to be used is that of site usage. Here it has been decided to employ the most conservative estimate of site usage, namely “page impressions,” rather than the figure-inflating measure of “hits.”<sup>11</sup> The following figures relate only to Cymru’r Byd’s homepage, *www.bbc.co.uk/cymru*.<sup>12</sup> In August 2001, the site received 100,000 page impressions. The following August, 2002, the figure had climbed to 175,000, and by August 2003, it had reached 555,000 – over five times as many as in 2001. In June 2004, it received its highest-ever monthly figures, 889,000, which when the figures for the *Newyddion* service, which are stored on a separate server, were added, meant that well over a million pages were requested from the BBC’s Welsh-language services that month alone.<sup>13</sup>

One question which is frequently asked about Cymru’r Byd’s user statistics is how many individual people they represent. To answer this, a separate set of data, unique user statistics,<sup>14</sup> must be examined. Once again, the

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<sup>11</sup> These figures come from the BBC’s own server, and can be inspected for use figures over periods varying from one month to one hour. Anything which unnaturally swells statistics, such as visits by automatic search engines which register pages for their records, and hits produced by automatically updating ticker services, are weeded from these statistics before creating them. Therefore, only figures for valid visits are recorded.

<sup>12</sup> Figures for Cymru’r Byd’s news service are collected separately since the material is kept on the News Online server rather than BBC Wales’ server. It should be remembered, therefore, that these news figures add to the number of BBC Wales’ on-line service users. From 2000–3, the news figures collected from the address *http://news.bbc.co.uk/welsh/default.stm* account roughly for the same number of distinct page impressions as those obtained from *http://www.bbc.co.uk/cymru*.

<sup>13</sup> Weekly and monthly reports of the BBC’s own statistics and audience research departments. Figures for March 2005 show more than 1.5 million page impressions.

<sup>14</sup> A unique user is a user who has visited the site once or more within a period of one month. Unique users are measured by counting how many cookies the server sends out. A cookie is a single piece of code sent to an individual browser so as to enable the server to recognize it on

figures for unique users show steady growth. During January, 2003, they showed 37,000, and by August of that year, they had reached 44,000. The figures for June 2004 showed 71,000 a month, not counting additional users of *Newyddion's* service.<sup>15</sup>

Another frequent question, deriving, I am sure, from the Welsh preoccupation with origins, is whether it is known where the different users are located. To satisfy this curiosity, server statistics are inadequate, as they do not reveal the users' locations. In this case, the data has to be gathered by a different means - that of asking the users. This was done during April and May 2003 when a pop-up questionnaire was run on the site. Hundreds of responses produced the answer, which was that 76 percent of *Cymru'r Byd* users live in Wales, 16 percent live in other parts of the UK, and 8 percent abroad, mainly in North America. Those figures mean that a total of 24 percent of the whole audience belongs to the diaspora.<sup>16</sup>

The figures also revealed:

- 1 a considerably *younger* age profile than that of the traditional Welsh media audience in both languages: 43 percent in the 15-34 age group. This is a very encouraging factor for the future of the service.
- 2 65 percent used the site at least once a week.
- 3 60 of users were male, 40 percent female.
- 4 62 percent were in full-time work, 11 percent at school or college, 12 percent at university, 8 percent working part-time, 6 percent retired and 1 percent unemployed. The high level of employment is reflected in the fact that workplace usage accounts for many of *Cymru'r Byd's* total page impressions: the highest level of site usage is at lunchtimes, and usage rises or falls with the pattern of working days, weekends and school holidays.<sup>17</sup>

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subsequent visits. Although cookies are common on commercial sites, it is only recently that the BBC's new media departments, with the exception of the news department, has been sending out cookies, so it has only recently been possible to collect these statistics for *Cymru'r Byd*.

<sup>15</sup> Weekly and monthly reports of the BBC's own statistics and audience research departments. Figures for March 2005 show more than 100,000 unique users a month.

<sup>16</sup> It should be noted that, for technical reasons, the survey was not offered to every visitor to the site. The survey was programmed to appear on a limited number of occasions; therefore, regular users are more likely to have received it.

<sup>17</sup> As regards age, employment status, gender and frequency of use, there were no substantial variations between these figures for *Cymru'r Byd* and the user figures for the BBC's on-line services generally.

These figures for Cymru'r Byd should be placed in the wider new media context in Wales. Here are some relevant statistics from Beaufort Research's annual survey for BBC Wales, in November 2002.<sup>18</sup>

- 1 almost 36 percent of Welsh speakers owned a home computer, most with internet access. This figure has increased since then.
- 2 57 percent of Welsh speakers had digital television.
- 3 a little under one-third had *never* used the Internet.
- 4 more *young* people, men and members of social class ABC1<sup>19</sup> used the Internet, compared with the total population.

Another statistic showing Cymru'r Byd in the Welsh on-line universe comes from the Hitwise research company, showing Cymru'r Byd as the *third* most used website in Wales in any language, after BBC Wales' English services and the icWales site, which belongs to Wales' major commercial newspaper group. No other monolingual Welsh website is in the top 20; the nearest any website containing a high level of Welsh comes to it is the Welsh Language Board's bilingual site, at number 16.<sup>20</sup>

One final source of information about the behavior of the on-line Welsh audience remains to be examined – the detailed server statistics showing which sections are most popular. These statistics reveal that the most popular sites on Cymru'r Byd are those for small children (such as the *Tweenies*), followed by

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<sup>18</sup> The Welsh speakers' survey was carried out by Beaufort Research Ltd. for BBC Wales between 5 and 23 October 2002 among a representative sample of 1,335 Welsh-speaking adults in Wales. Comparable general figures for the whole of Wales were obtained from an all-Wales survey carried out by the same company on behalf of BBC Wales from 26 October to 23 November 2002 among a representative sample of 1,335 adults in Wales, with an additional sample of 120 adults from minority ethnic groups, giving a complete sample of 1,455 respondents.

<sup>19</sup> Managers, senior civil servants or people who have retired from these posts and have private pensions. 'B' denotes the 14 percent of the population who have qualifications, including middle managers and owners of small businesses and people who have retired from these positions. 'C1' denotes the 26 percent of the population who work in offices, and people who have retired from these posts. It also includes students since they are expected to find 'C1' posts after graduating. ABC1 people are contrasted with people in class C2DE, which includes skilled and unskilled workers, the unemployed and retired people who depend solely on the state pension.

<sup>20</sup> Hitwise is an Australian company which has branches throughout the world. It monitors over 25 million internet users in the home, at work and in education so as to create a worldwide database of information about web use. This enables customers, such as large sites and internet service providers, to measure the popularity of their site in relation to others. <http://www.hitwise.co.uk/ss/> (last accessed: May 2005). The figures cited are for December 2003.

news, education, the *Pobol y Cwm* TV soap opera site, the Radio Cymru service, local sites and sports. These statistics are particularly revealing, as they allow not only the sum total of usage of various sections to be seen, but also the use made of *individual stories*, giving a kind of X-ray vision of user behavior. This yielded some surprising results, as it was found that users' actual selection of stories on site very often differed from what anecdotal testimony claimed were their news priorities. It was evaluation of these statistics for individual stories on the news index which led to the change of priorities in that service by mid-2003.<sup>21</sup>

As was mentioned earlier, 40 percent of Cymru'r Byd's on-line news index resources were devoted to British and foreign stories and 60 per cent to stories about Wales. In unsolicited responses, many users expressed warm appreciation of the fact that such news was available in Welsh. However, the detailed survey of the most used stories proved it was very largely *not* British or foreign material that the audience wished to read. The stories which almost invariably topped the list, and which completely dominated the top 20 stories week after week, were *Welsh* ones, and more specifically, those relating to the Welsh *language*, its communities and its politics. This was the case even though stories of that kind formed only a minor proportion of the 60 per cent of Welsh-based stories published. Despite the worldwide nature of the service, it appeared that community issues were still very much closest to the hearts of the users in their use of Welsh-language media.

It would, of course, be wrong to infer that these users lack an interest in world and UK affairs; indeed, given the social class to which they largely belong, and the often committed and politically conscious nature of active Welsh speakers such as these, it is fair to assume that they have a lively interest in news and current affairs from beyond Wales. However, the assumption has to be made that they satisfy this need by using English-language media, which are able to provide greatly deeper and faster coverage of those matters than is possible for the Welsh-language service. It appears that the audience uses the Welsh-language services for what they can offer uniquely: news about the specific linguistic and geographic community with which the users identify. In response to this inescapable evidence of the users' preferences, it was decided to change the service priorities, reducing British and foreign provision to 10 percent and replacing it with Welsh stories, a strategy which led to an increased number of page impressions.

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<sup>21</sup> The service's weekly statistics were trawled, choosing ordinary weeks where there were no major news stories, and comparing them with times when there was a strong news agenda on a Welsh, British or foreign level: for instance, the 2001 general election, the 2003 Assembly elections, the Seimon Glyn affair during summer 2001, the attacks of 11 September 2001, the Afghanistan war and the Iraq war. Thus, it was possible to discern patterns of usage.

It was mentioned earlier that the concept of community remains particularly strong among Welsh speakers, and that they bring to cyberspace the same interests and community priorities they expressed in the world of radio, television and *papurau bro*. From this it might be suggested that the process of globalization, inherent in the development of communication technology, does not necessarily mean a weakening of a sense of belonging. It appears, rather, that many users utilize these technologies for humankind's perennial purposes.

This study has concentrated on BBC Wales' Welsh-language on-line services, but it should be noted that Welsh-language "new media" now includes a range of services across various stages. Without going into detail, it might be worth noting some: the Digital S4C television channel; the digital text service offered by BBC Wales on cable television for ntl and Telewest customers, providing news, weather and sports in a manner similar to Ceefax or Teletext; the WAP mobile phone service which gives the latest Welsh news stories immediately to phones and handheld devices; and the live Radio Cymru satellite service available throughout Europe on channel 904 and throughout Britain on channel 897 on digital cable TV. Since it is very early days for these services, it would be premature to study usage levels and user behavior patterns as has been done with *Cymru'r Byd*, but it is worth recording that Welsh-language services are spreading rapidly to the emerging platforms of the new technology.

To conclude, it is, of course, not time for the providers of these services to rest on their laurels. However, although the difficulties facing the language continue to be very considerable, these early signs provide an encouraging suggestion that the Welsh language will still find its media pioneers, as well as its new audiences, in this latest technological revolution.