

The MARVIN System: Bringing Animation to Communication and Learning to Life

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Abstract

MARVIN is an innovative and engaging software platform created in the Northern Territory. It embodies a philosophy of empowerment and ownership. MARVIN allows inexpensive, flexible and relevant health, education and governance resources to be created in the community, by the community and for the community.

From a technical perspective MARVIN is a complete character-based resource and e-learning development platform. It allows the creation of culturally specific and multi-lingual policy, education and health promotion materials ranging from interactive e-learning lessons to paper-based flip charts. It is easy to use but immensely powerful.

MARVIN is just as at home in advanced and sophisticated IT environments as it is in some of the most remote and isolated communities in the world.

More than all of this though, MARVIN represents one of the most fundamental shifts in the way learning and knowledge is shared between cultures and language groups — especially in interactions between governments and the people they serve. MARVIN is a unique blend of humanity with technology, making technology less imposing and fostering relationships between peoples and cultures in a way that emphasises our common humanity.

Introduction

“The capacity to communicate in language, even where the language is used by only hundreds of people, is enormously powerful. It has the potential to build confidence amongst Aboriginal elders that measures to improve education and employment may not necessarily threaten traditional culture and values. Combined with some of Noel Pearson's suggestions (e.g. of education as a potential preserver of culture, and of promoting mobility between isolated communities and centers of employment), your simple technology [MARVIN] could be very important to sustained advances in Aboriginal well-being.” (Andrew Podges, Australian Public Service Commissioner, letter to NT Commissioner for Public Employment, Commissioner John Kirwan 3 November 2004).

"Is it a bright dawn then, for software development in Central Australia? At the very least, it's [MARVIN] a triumphant demonstration that unusual circumstances and urgent demands can trigger a rush of technological creativity under desert skies." (*The Australian*, 9 December 2003).

The Hon. Geraldine Fraser-Moleketi, South Africa's Minister of Public Service & Administration, described the MARVIN solution as "ground-breaking, heart-warming and inspirational".

"According to ANTA chairman, David Hind, Australia's key to keeping ahead of international competitors is world-class training programs that meet the skill needs of businesses and individuals. "Ingenious and innovative training programs like MARVIN are breaking new ground in delivering quality training when, how and where it's needed most," said Mr Hind."

(<http://www.anta.gov.au/news.asp?ID=312>), viewed 11 November 2004).

"Health minister, Dr Peter Toyne, said the win (Gold Award, CAPAM International Innovation Awards) "was a fantastic achievement"..."MARVIN was developed at the grass roots level and is a testament to the fact that anything is possible if you get the right people involved," Minister Toyne said." (Ministerial Press Release, 2 November 2004).

"I believe the NT, and indeed Australia, is a driver of innovation because of the barriers it faces - its geography, isolation and limited access to technology.

These barriers have challenged us enormously and yet helped to push us to the forefront of information and communication technology advances and what ITC can do for our businesses, our governments and our communities," he said.

"The more time we spend with this type of Avatar (character-based) technology, the more time we'll spend on blending training boundaries between the best of what technology and humanity has to offer and between trainers and learners. We are considered by many of our national and international peers as being world drivers and leaders in this particular field of IT and that is extremely rewarding for us as Territorians and as Australians." (J Easterby-Wood, extract from press release, Australian Flexible Learning Framework, 16 September 2004).

Snapshot of the Northern Territory, Australia

The Northern Territory

- The Northern Territory is one of two territories in Australia (and six states).
- Northern Territory's population is 198,600.

- 28 per cent of the population identify as Aboriginal or Torres Strait Islander.

Northern Territory public sector

- The largest employer, with some 15,800 employees
- Has 2,139 employees across 132 remote localities.

MARVIN — purpose and objectives

MARVIN aims to transform the way that Policy, Training & Education teams within the Department of Health & Community Services and the Department of Employment Education & Training engage with rural and remote Northern Territory Communities so that:

- the culture, language and knowledge of these individuals, organisations and places are effectively valued and utilised in the development of policy, and health and education resources at a community level
- these new resources are flexible, specific, relevant, user-friendly, and inexpensive, are transferable across communication mediums and help in the development of relationships and partnerships between these communities, local industry and government
- the balance of power and responsibility for information and training being received and delivered within these regions is directed back to the communities and that ownership of this process is shared between community and government.

Conception to implementation

At the end of 2000, the Department of Health & Community Services (DHCS), a Registered Training Organisation, began reviewing the performance of its capacity building and training teams within the Alcohol & Other Drugs Program (AODP). It found that the impact of training by these teams within rural and remote Aboriginal communities was being limited due to the generalised and non-specific nature of the competency based policy, health and education training resources available to the teams. After realising that both the resources being utilised and the actual process of community engagement was not able to effectively take into account the culture, language and environment of these communities the AODP team began a process of consultation with key stakeholders to address these concerns. The communities identified that, in order to engage with government in respect to policy, education and health promotion and development, there needed to be a process that met four criteria.

Resources/information/communication had to be:

- relevant — they had to be culture, language and geographically specific to the individual targeted community. It was not good enough to only be relevant at a state or regional level.

- engaging — communities wanted resources that were interactive and above all fun, they believed that humour and entertainment are conducive to learning and education.
- cost-effective/adaptable/flexible — they had to be able to be inexpensive to create and maintain and able to be modified as the situation required
- owned by the community — communities were tired and disillusioned with government seeking to engage them in policy, health and education development and training but continuing to be the ones that held the power as to how, where and when resources/information/communication/training was introduced to the community. These citizens believed that if there was to be real engagement and shared ownership of VET issues, there needed to be a shared ownership of the Information being used to explore, define, promote and address these issues.

In 2001, with these criteria in mind and after extensive research, the AODP team began to negotiate with leading software developers and researchers from around the world on the basis that these companies would build and provide IT applications and platforms for community resource development (CDR) and in turn DHCS would provide the environment and project support with which to pilot these applications. This partnering model was an immediate success with the eventual total cost of all parties involved in building this new platform met out of existing resource development allocations. This Resource development Platform became referred to as the Pathways to Dimensional Learning (PDL) program and in 2003 was launched as the MARVIN System.

Evidence of excellence and/or innovation — new processes or techniques

The MARVIN system is quite unique in the world not only in relation to its capabilities and features, but also as to its implementation process

First and foremost the MARVIN system is about people, it is an innovative system based upon the ability of the software to transform identified target group members into animated characters (avatars) that are able to exist across a range of mediums from traditional paper based resources across to web-based e-learning systems and digital television.

Over the past decade much has been made of technology being able to customise resources but the MARVIN Consortium featuring government agencies and software developer Inchain Pty Ltd has pioneered the concept of humanising resources. These characters that represent community members are able to interact with community groups in a way that is culture and language specific and are developed and adaptable by the community itself. For the first time, communities are able to build resources that instruct as to competency-based health and education issues.

The characters use state-of-the-art voice recognition, text-to-speech and translation technology to enable them to overcome many of the traditional language, literacy and numeracy (LL&N) barriers and challenges usually associated with resource development.

In essence the MARVIN platform allows for target groups with no previous resource development or IT experience to create high quality, relevant, adaptable training resources in a fraction of the time and at a fraction of the cost and with outcomes that are rated by the community as far superior to those previously available.

The process of MARVIN implementation in rural and remote areas was also innovative in that initial training in the use of the system by community members is embedded in an action learning process whereby students are not only building their capacity but at the end of the training (three, four-hour sessions) they have created a real competency-based training resource for their community to use that can range from an interactive multimedia presentation for distribution over the local community television network to a flip-chart or range of poster presentations featuring community members. Unlike other animation programs that require significant training and time requirements, community members, after only twelve hours, are able to create resources at a staggering 6:1 ratio (i.e. six minutes of development time for one minute of a training end-product).

Also Innovative is the fact that the cost of implementing the MARVIN across the Northern Territory Government and into rural and remote communities has been offset by relative affordability of the program and that the government, because of its arrangements with the IT companies that helped develop the program, receives royalties from the commercial applications embedded in the system which are used to ensure that communities in the Northern Territory are able to utilise the system in partnership with DHCS without ongoing cost.

The MARVIN system as a process is innovative in that it moves beyond the rhetoric of community of learner-centred engagement, of capacity building and development and, for the first time, offers a range of applications that actually allow for the transferring of knowledge and training between parties in a way that is mutually beneficial. Instead of viewing LL&N and culture as challenges or barriers impacting upon the delivery of training, education and information by government to its citizens, The MARVIN consortium constructed a system around the tangible benefits and assets inherent in learner and community identity.

Outcomes and achievements and future potential — including industry-wide or community-wide impact or significance

In 2000–2001 DHCS requested a small group of Frontline Alcohol & Other Drug Trainers to deliver better training and health promotion education outcomes in remote areas. At the time there was little notion given to the idea that a process had begun which would, in a few short years, begin to have territory, national and international significance and implications. From early inauspicious beginnings its impact is such that it is arguably one of the fastest-growing Community Resource Development & Engagement Platforms in the world.

The requirement for community engagement practitioners to engage in a very real and committed manner with learner groups that are made up of various culture, language and geo-ethnic subsets is an international priority and a necessity if global trends toward best practice in community engagement are to take effect. After all, how can practitioners claim they are committed to a client-centred approach and in engaging citizens when the very language and culture reflected in the resources they use are often foreign, generic and without contextual substance?

The MARVIN system has challenged the notion that engagement and involvement of client/learner groups in regards to the development of policy, health and education training materials is a complicated and resource intensive process. From a DHCS perspective the MARVIN initiative is allowing us to build strong relationships with people and locations previously disengaged, allowing for shared accountability with stakeholders and delivering a follow-on effect of better health and community engagement outcomes that are only just beginning to be realised.

Perhaps the truest measure for the MARVIN System in terms of innovation, outcomes and achievements and one of its leading strengths, is the ease at which it is being replicated. In a little over three years the product has moved from being a small selection of software application used by a small regional program to a complete resource develop platform that is being adopted by governments and agencies all over Australia and more recently overseas.

Interstate government departments and training organisations in Western Australia, New South Wales, the Australian Capital Territory, South Australia, Victoria and Tasmania have requested to trial pilot and implement the MARVIN System. Federal agencies such as OATSIH, DoHA, DCITA and ANTA have begun funding MARVIN projects throughout Australia, and premier Australian overseas development organisations have begun negotiations to use the system for AIDS/STD education, training and health promotion campaigns in Papua New Guinea, Fiji, Timor and the Solomon Islands, with the eventual intent to help with its implementation in Africa and South America.

Companies in Asia and the United States are exploring the e-learning capabilities of the platform. The ease of its uptake is being attributed to its inexpensive nature, its ability to be used across so many media for so many applications, its ease of use and its portability. Above all, the MARVIN system has enjoyed such a relatively short rise to success because it is primarily about engaging diverse client learner groups in such a way as to emphasise our common humanity.

More recently MARVIN has been selected to be trialled as the survey/education platform for the commonwealth Family & Children's Services Departments' Longitudinal Survey of Indigenous Children 'Footprints in Time' Project. This longitudinal study is the largest of its kind ever undertaken in Australia and for an Australian-built system to be selected for such an undertaking is something of which we can all be proud. MARVIN has also recently been selected as the content platform for the Desert Knowledge Cooperative Research Centre's 'Interactive Digital Television Project', which aims to pilot technology which will allow for students in remote areas to access education via their television sets, using remote telecommunication infrastructure in areas where broadband will, in all probability, remain unobtainable. Both of the above projects have the potential to significantly impact upon Australia and the interactive television project and, in particular, has global implications in relation to the delivery of remote and distance VET. These two examples are a sign of the regard in which MARVIN is held and of the recognition it is receiving nationally.

Conclusion

MARVIN was designed to provide community engagement practitioners with new, innovative tools to lessen the impact of traditional barriers to cross-cultural engagement, education and training in remote locations in diverse cultural environments. From a learners/client perspective, MARVIN was designed to engage them in new ways that would build their capacity to have more control over the information that they were receiving and sharing. MARVIN has proven to not only deliver a better training delivery platform with significantly improved outcomes but it has expanded to become an entire online/offline learning management and resource development framework and philosophy.

MARVIN has led to significant new long-term partnerships between industry, government and communities, and has facilitated the sharing of knowledge and ideas to a degree many thought previously 'unobtainable in the near future'. It has begun the process of revolutionising the Training and Education/Communication strategy and structure of not only the Department of Health & Community Services, but also its impact and potential has been such that it has expanded to include agencies and organisations from around Australia and around the world.

This paper relates to the MARVIN initiative, its past, present and future, and demonstrates how real innovation arises from transforming challenges into resources and barriers into goals. The Northern Territory, in partnership with organisations from around Australia, has pioneered a unique state-of-the-art community engagement solution and has become a world leader in bringing animation to communication and learning to life.

The MARVIN website is at <<http://www.marvin.com.au/>>.

Appendix 1. Pathways for the Community Engagement Program and MARVIN

The Pathways for Community Engagement (PCE) Program (formerly PDL) is a community-based multimedia communications and resource development process designed and developed by the Northern Territory Department of Health & Community Services and managed by its Interactive Communications Development Unit. The PCE Program is the unique multi-award winning process utilising innovative 'avatar'-based technology, such as the MARVIN system, to engage community members and groups in diverse language, culture and geo-social environments. The PCE Program allows for the creation, development and maintenance of education, health promotion and policy resources and materials in community, by community and for community. Utilising a selection of innovative software resource design tools and best practice community engagement practices the PCE Program aims at developing the capacity of communities and community groups to 'enable' the flow of communication and information between themselves and relevant organisations and stakeholders, allowing for the first time the creation of resources, systems and materials that are relevant and specific at a local level whilst existing within an inexpensive, adaptable and easy-to-use framework.

Innovative technologies

The Pathways for Community Engagement Program utilises a number of customised and/or commercially licensed software tools such as the jointly developed (DHCS, DEET, Inchain Pty Ltd) MARVIN system to facilitate the development of community-based resources. The majority of these tools have one thing in common and that is they are based upon 'avatar', or character animation technology, whereby the community resource project participants and members of the community in which PCE resources are being developed are transformed into animated characters with a wide range of functionality or can use generic characters to build resources that reflect the language, culture and background of the community being engaged.

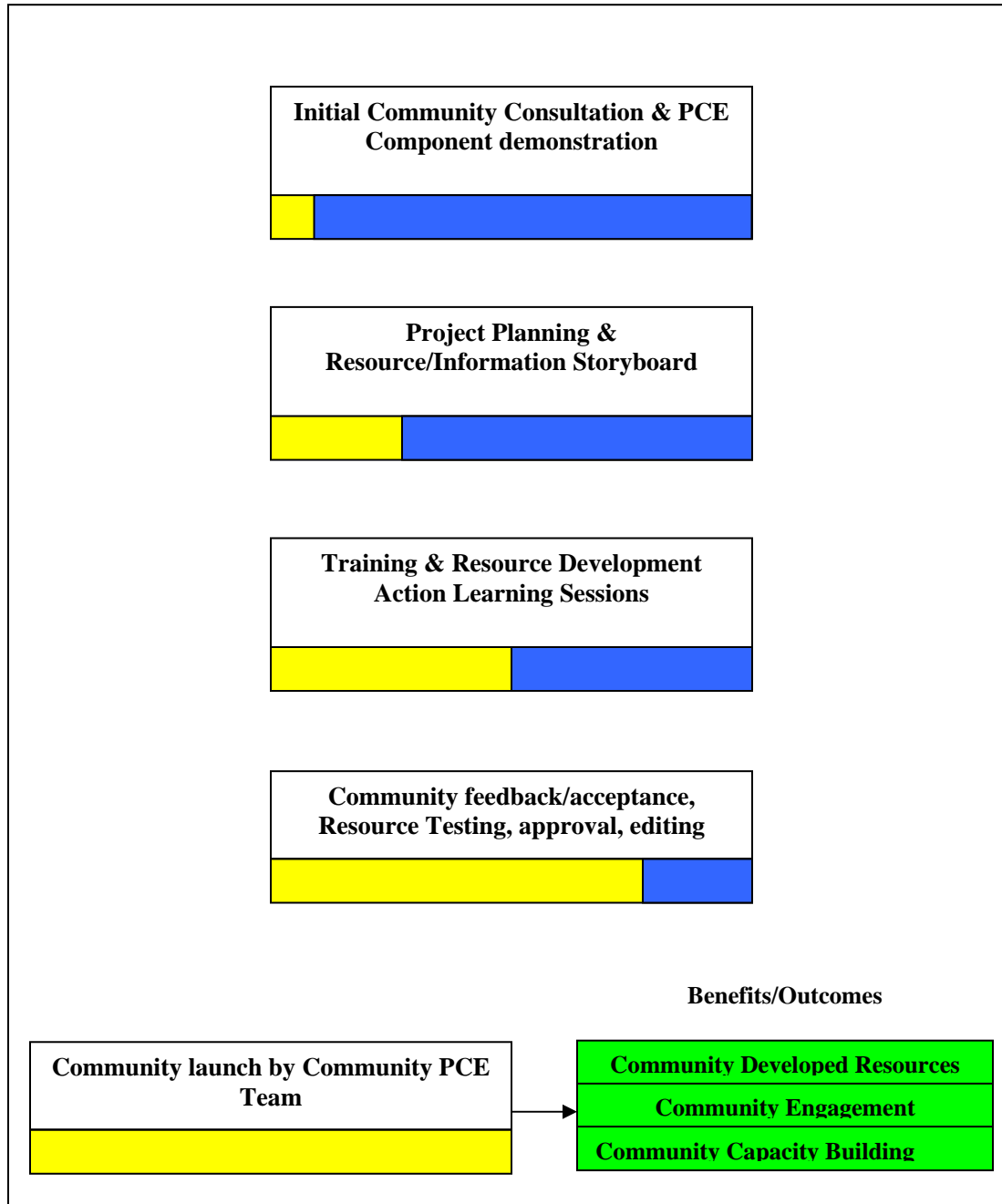
International, national and local studies and research have shown that the use of avatars in training, education and information services leads to better uptake of information and increased

levels of participation by those groups interacting with technology. Avatar animation systems help users to interact with technology and information on a more human level.

Other aspects and functionality utilised within the PCE Program includes the use of text-to-speech technology, Microsoft Agent and Agent scripting technology, text-to-speech translation engines and video and graphic design capabilities.

The PCE methodology

The PCE Program is encapsulated within a community consultation and action learning process developed by DHCS in partnership with North and Central Australian remote and rural communities.



Level of Community Involvement, engagement & responsibility



Level of DHCS ICD Unit Involvement engagement & responsibility

PCE benefits

- communities and community groups empowered and engaging with service providers and amongst themselves due to an increase in the flow of relevant customised community-orientated information and communication
- the building of sustainable capacity within communities in relation to the development of relevant, culturally appropriate and contextualised resources.
- the building of sustainable capacity within communities in relation to the development of information, communication and technology (ICT) skills
- the building of sustainable ICT infrastructure within communities and community groups and organisations
- the creation of community specific and relevant multimedia and text based resources at a fraction of the cost and in a fraction of the time of traditional resource development systems
- the ability to provide information and materials across a range of mediums and environments, from sending community built resources across high-end online platforms to producing community specific flip-charts in some of the most remote and technically challenged environs on earth
- the ability to adapt, change and customise resources at a localised level as required by community members.

PCE services and related activities as provided by DHCS, Interactive Communications Development Unit

PCE Marketing and promotion

PCE Consultation and project planning

PCE Project management and support

PCE Training

PCE Character design, modification and support

PCE Resource component creation, i.e. resource toolbox development

PCE Resource creation

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