Portugal embarks on a voyage of discovery with its **Magellan Initiative**

Even *The Times* can get its facts wrong. Not very often, but perhaps often enough to demonstrate that most of the print and electronic media fall short of infallibility in their reporting of what might be quite basic details. Most of the time, the errors are small and inconsequential and arise because simple facts were not checked out before publication. The consequences can be further reaching, however, as when an organisation starts making policy decisions on the back of information gathered from publications on which executives feel that they can rely.

Take the case of the press coverage surrounding the announcement back in July 2008 by the Portuguese Government that it was going to provide every elementary school pupil in the country with a lightweight PC based on the new Intel Atom microprocessor chip.

How that story was treated by the serious press in the UK varied enormously. Some reports had Intel giving Portugal half a million of its Classmate PC machines (which Intel appeared to be manufacturing); others took the trouble to report that the devices were to be built locally; few got near to the heart of the most adventurous project in junior-school education in Europe in the past twenty years.

Precisely what the Intel Atom chip might be, and how that small-footprint, low power-consumption processor was used in Intel's reference design for a generic entry-level laptop, has already been covered in depth in this edition. But the implications of a national government deciding to roll out this technology – or indeed any computing technology – on such a large scale are huge.

There is evidence already that the Portuguese model is being adopted by other countries, of which Venezuela was the first to go public on such a strategy at the end of September 2008. In that instance, the roll-out will see around one million locally-manufactured netbooks taken up in the corresponding tier of the education system.

For local authorities and even individual schools in the UK planning to make an investment in 'entry level' technology over the next two years, it is worth establishing what the facts of the Portuguese story might be, and if there are any lessons to be learnt here.

As 650,000 primary school children start to take delivery of lightweight computers, we examine the rationale behind this project and assess any implications for ICT for the UK.

The Magellan Initiative

To secure the facts, we asked the people who should know. Brian Gonzalez, the Country Manager of Intel in Spain and Portugal, is probably the most reliable source of information. He readily confirmed the company's participation in the project and set about explaining how it evolved within the Portuguese education system.

The Magellan Initiative – the English translation of the project's name in Portuguese – was conceived late in 2007, as part of P*lano Tecnológico – Portugal*. This is the government's umbrella plan to increase the use of computers and the Internet, to provide Portuguese citizens with the latest technology and support their participation in a knowledge-based economy.

As Gonzalez noted, "This comprehensive programme is designed to provide access to computing devices, connectivity to the Internet, and training on how to use them as an instrument of education. Its overall objective is to increase Portugal's international competitiveness and drive forward important initiatives that would help the country reach the information society goals that have been set by the government."

Magellan complements the country's e-Escola project which has focussed on providing technology to support students and teachers in the third cycle, or tier, of Portuguese education.

This band corresponds broadly to the sixth form and FE tier of education in the UK; the two lower cycles spanning the junior and secondary age bands. There was also a commitment to deliver IT to disadvantaged adults.

And Intel's involvement in this multi-faceted campaign? "Over the past two or three years, the company has worked with the government to develop education programmes for using technology as an instrument of change; and to accelerate and enhance these education initiatives."

Magellan evolved when the Portuguese Government investigated with Intel how best to increase the impact if information technology on the education system.

Could technology be introduced into the school system as an instrument of education earlier than the Third Cycle? Driving the new project were the Ministry of Public Works, Transportation and Communications (which is managing the distribution of the netbook PCs) and the Ministry of Education.

Whatever else the Magellan Initiative might be, it appears to have a very strong education component, improve accessibility to technology, and is funded through a Public-Private partnership; a business model worth considering in the UK. In the Portuguese case, the finance has been made available through the

Jose Socrates, Prime Minister of Portugal, launching the Magellan Initiative in September 2008

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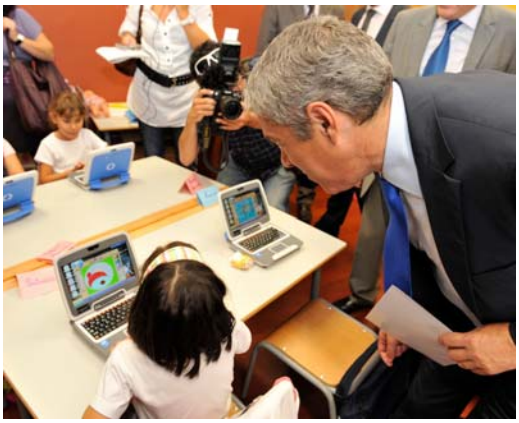
The Magellan Initiative appears to have a very strong education component, improve accessibility to technology, and is funded through a Public-Private partnership. The finance has been made available through the involvement of the telecoms service providers – in particular the mobile phone companies, which are employing the funds committed when they were awarded their 3G mobile licences at the beginning of this decade.



Prime Minister Jose Socrates experiences first hand the netbooks being distributed to Portuguese schoolchildren

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The fund created at that time is now being used to subsidise the systems in the Magellan Initiative. It follows that the telecommunications sector is playing a fundamental role in the ecosystem of this project.

Multiple objectives

According to Brian Gonzalez, the aim of the Initiative was not just to have a computing device but ensure that there is access to the internet, content suitable for the primary level, and controls to protect children.

"What makes Magellan such a remarkable project is that it was the first collaborative venture of its kind anywhere in the world. The concept is wholly scalable and can therefore be implemented across a whole country very efficiently.

"And perhaps more important, the concept and structure can be taken up by other countries and adapted to their particular circumstances without diminishing its educational value."

Closer examination of how the Magellan Initiative has been constructed shows that it has three essential components. Its core objective is the driving force behind the Portuguese Government's plan – a drive towards the information society backed by a very strong linkage with education.

Sustainability is the second pillar of the strategy – the project involves local industry and competences. "It draws around it an eco-system that provides local software. There is a local OEM building the PCs, while other Portuguese companies are helping to package the product so that it is appropriate for pupils in the first cycle. That three-strand approach makes it easy for another country to adopt this, as we have seen with Venezuela."

Localising the principle

Did this provide an opportunity for 'cookie-cutting' the Magellan concept around the world? Mr Gonzalez saw the process more as one of localisation, where elements of the process are adapted to fit in with local circumstances.

He illustrated the point with the roll-out of Magellan into Venezuela. "Broadband access there is lower than in Portugal so the approach to securing Internet access will not be the same.

The key is that the Magellan concept is fully scalable in different countries at different levels of adoption. What is interesting from the Intel perspective is that is a very major education programme in which we are playing a small part."

More specifically, that 'small part' is supplying the Atom chip on which the netbooks being supplied to school children are based. Intel has licensed its Classmate PC design specification to Magellan, and is currently developing a Centre of Competence for the product in Portugal.

"In practice, that means working closely with the local OEM player who is building the device and taking the relevant parts of our reference design, the Atom chip set and other Intel components including aspects of the software employed on it."

Where Intel will bring its four decades of production experience to bear on Portugal's Magellan Initiative is in advising on the assembly process, ensuring that the devices 'fit' with the educational software being developed locally, and can integrate with the internet access being provided across the education footprint.

The objective is that the PCs will be used also by teachers, and by children at home as well as in the classroom. That additional usage will help parents greater exposure to the Information Society in a very practical way.

Elements from the Classmate

While headlines were reporting that 'Intel had sold half a million of its Classmate PC to Portugal', the facts are rather different. The Magellan Initiative does not refer to the small-footprint laptop as a Classmate PC. The product being manufactured in the country uses the Intel reference design as an ingredient of the total.

Brian Gonzalez set the relationship in context. "The Magellan Initiative is much more than the hardware device. The *solution* is a Portuguese design and not necessarily the part of the programme that will have the greatest impact.

"What matters more is the underlying methodology for incorporating local content, bringing the components within the Initiative together in a unique way."

Delivery in progress

The first phase of delivery is already under way in Portugal. Some 3200 PCs have been installed in classrooms in 850 junior schools across the country to train staff who are involved in the Initiative. How quickly the half million netbooks which are a key component of Magellan can be delivered and put into service raises a few questions.

It is estimated that there are around 650,000 children of Tier 1 age. If every one of the netbooks being supplied were to be purchased, that would account for a remarkable 77% of those eligible. That figure has to be seen in the context, however, of the announcement by the Lisbon government in September 2008 that the scheme is being extended to all primary students: all will be eligible for the subsidy.

Families are being means-tested: while the 'normal' price will be •50, the system will be supplied without charge when appropriate. Subsidised pricing will ensure that the Magellan Initiative would have succeeded in delivering an important delivery platform for education never before encountered.

"The holistic approach ensures that the device conforms and adapts to local environments. That is what makes Magellan such a global player: we have already seen how that will work with the Venezuelan agreement. The Portuguese goal is to be able to replicate a similar delivery model to the Magellan Initiative, transferring its core competences in education and technology and broadening the country's existing skills base in trade and transport. The Magellan Initiative does not refer to the small-footprint laptop as a Classmate PC. The product being manufactured in the country uses the Intel reference design as an ingredient of the total. "

Model for the UK?

Could a Magellan Initiative be rolled out in the UK? It would be unrealistic to believe that Intel executives had not at least explored the options for such a programme with the Department for Children, Schools and Families (DCSF).

There is limited experience of state-sponsored intervention in this arena in the UK, in the form of the two-year Computers For Pupils (CFP) scheme, addressed at a relatively small segment of educationally-deprived children.

The successor to that scheme – Universal Home Access – is being launched across the whole of the UK in Autumn 2009, with a pilot scheme from the end of 2008 in two areas. The project will be be more inclusive than CFP, ensuring that children have access to 'appropriate' technology at home to complement their school use of the technology .

If the Atom-based netbook were to play any part in the enlarged programme, it would be appropriate for the junior school student here, as it is in Portugal and across the world.

Those users will logically migrate in due course to more conventional PCs and laptops. They must be able to make that transition transparently when it comes to the 'toolbox' of supporting applications.

In the best of all worlds, that means applications such as word processing, graphics and presentation which are 'light' enough tp run efficiently on the Atom-based netwbooks and cheap enough across the full range of Windows-based kit in a school.

Mick Waters, the Director of Curriculum at QCA (the Qualifications and Curriculum Authority) has emphasised the need for students to be comfortable with the complete range of 'office-style' applications .

Once that important element of continuity has been taken into account, there is certainly scope for an initiative in the UK, on the scale of the Magellan Initiative. Schools would have a greater measure of confidence that their investment in ICT was protected far into the future. §