



# Automation Comes of Age

Stage Technologies was 15 years old in 2009, and has seen remarkable growth in that time. Lee Baldock talked to the company founders to find out more . . .

If you kept a close eye on the industry news headlines during 2009, you may recall seeing two notable items about London-based Stage Technologies. The first (*LSI Online*, 21 April 2009), was the news of the company being awarded the Queen's Award for Enterprise in the category of International Trade. This was their second Queen's Award, following a win in 2003.

The second item (*LSI Online*, 22 September 2009) was the news that Stage Technologies was positioned at number 55 in the 'Tech Track 100' table published by *The Sunday Times* newspaper. This annual ranking assesses Britain's fastest-growing privately-owned technology companies, based on sales growth over the latest three years. It stated that Stage Technologies had grown its sales from £4.2m in 2005 to £15.5m in 2008.

Either story would be an impressive accolade: to have both in the same year suggests not only that Stage Technologies is thriving as a business, but also that something fairly fundamental is happening to the stage automation market.

## Early Stages

For co-founders Mark Ager and John Hastie, forming Stage Technologies was a case of being in the right place at the right time - and in possession of plenty of the right skills and experience.

Ager had an MA in Physics from Oxford and experience of the theatre world from working for the RSC, eventually as systems engineering manager at the Barbican, where he was responsible for the maintenance of one of the first power flying systems in the UK. At the same time, he studied for a management diploma and

an MSc in robotics and automation. By 1994 he was working for an industrial automation controls manufacturer which made systems for production lines - and they were looking for a new market. "The theory was that we could take that technology and apply it to the theatre," he says.

And with that new market came a new contact in John Hastie. Beginning his career as an electrician at The Piccadilly Theatre in 1985, Hastie had become increasingly involved with automation projects. Later, as Chief LX at the Wyndhams Theatre, he had been responsible for complex IT upgrades, including the first ever fibre installation in the West End region. He went on to be involved in the design and installation of automated control systems for countless London theatres.

Ager recalls: "John and I had worked on various jobs together, including *Phantom* in Manchester, and some work on *Miss Saigon*. I was selling in the kit that he was then implementing."

When Ager decided he wanted to leave the business altogether, it was Martin McCallum, then managing director of Cameron Mackintosh Ltd, who interceded and persuaded him that there was an opportunity at hand. He had recognised the value of the service that Ager and Hastie were providing to Mackintosh's shows, and saw enough potential in their combined skills and experience to persuade Mr Mackintosh to put forward the seed money for the new venture. Put simply, he wanted a business with the expertise and resources to provide the kind of support for automation that modern theatre shows increasingly required.

"We got this offer, and we thought about it for a bit, and decided to go for it," says Ager.



Photo: courtesy The Church of Jesus Christ of Latter-Day Saints



Photo: courtesy of the Hong Kong Cultural Centre



Photo: courtesy Carnival Cruise Lines.

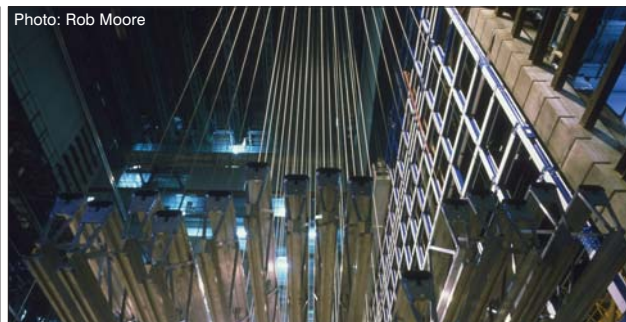


Photo: Rob Moore

He continues: "At that time, automation in the theatre - I don't even know if we really *called* it automation then - was all done by people in the backroom, people like John: a one-man band, probably with his spare bedroom full of bits of kit that he was shipping in. Martin McCallum saw that this was crazy. There were these massive shows, where if you lose one performance you lose £80,000, and you're relying on this one guy . . . So it was very much about trying to put the company on a better footing, and that was what the seed fund was for - not just for the two of us."

One good reason for a company to exist, maybe, but not reason enough. Ager explains: "In the original business plan, we could immediately see that the West End wasn't big enough for that. The plan was always that we needed to take this technology to other venues in Europe and worldwide."

### A Flying Start

Ager recalls: "Within nine months, we had started the company - just as we opened *Oliver!* [Cameron Mackintosh's revival production at the London Palladium: see L&S! January 1995] and did our first PLASA Show [September 1994]."

Stage Technologies' presence at PLASA '94 proved to be the catalyst for expanding their nascent customer base. Ager says: "That first PLASA we made several contacts which led to us expanding beyond the West End, which was crucial - mainly through Glantre Engineering. We were very lucky in that Glantre had just become involved in the cruise industry, which for various reasons had just started building ships that were larger by about 30,000 tonnes. Because of that, the size of the theatres had grown, and so Glantre were looking at putting in the first proper flying system in a ship's theatre, which was for Carnival Destiny."

The company's first Acrobat control desk (which, like its modern-day descendant the Acrobat•G6, was a 6-playback, dual

computer console) had led to the company's engagement with the cruise ship market including projects with Glantre Engineering on the Carnival Destiny, Grand Princess, Disney Magic and Wonder ships. Then, virtually simultaneously, came the first dry-land venues including the Teatre Nacional de Catalunya in Barcelona, which was one of the first of a number of collaborations with JR Clancy. Stage Technologies' first live touring project - for Take That - was in 1995. Very quickly, the company had established itself beyond the confines of London's Theatreland.

Joining Ager and Hastie at the outset were Ted Moore, still with the company today as director of rental services, and Kevin Taylor, who now heads up the Las Vegas operation. Another vital early step was the appointment of a business manager, as Ager recalls: "Martin [McCallum of Cameron Mackintosh] said 'I don't want a bunch of engineers wasting my money, I want someone with a business brain'." Accordingly, Nikki Scott joined the company (from DHA Lighting, where she had been general manager for some 10 years) in 1995. She bought the company's first files, and has been the commercial foil to the engineering founders ever since.

Ager continues: "At the time we started, every system for a West End show was custom: every design was built from scratch - winches were custom, everything was custom. This was crazy, both from the point of view of cost of design, and also of time, because decisions were made so late in the process, and some of these gearboxes would be on 10-12 week delivery times. So you'd compromise all over the place, making mistakes - and then be unable to support it afterwards because it's all one-off stuff.

"So we had a real focus on changing that approach, on building products which you then fit around a project - which was what lighting and sound had been doing for years. There was some of this going on in other parts of the world, but certainly in the UK there hadn't been that push to build product."

**Facing page:** Celebrating the second Queen's Award for Enterprise: International Trade in 2009 with some of the Stage Technologies team, directors of the board, Mei Sim Lai OBE DL, the Queen's representative for Brent, and Sarah Teathers MP.

**Above:** clockwise from top left: The Tabernacle of the Church of Jesus Christ of Latter-day Saints in Salt Lake City; Nomad on the fly floor of the Hong Kong Cultural Centre; The Carnival Destiny cruise liner; Flying bars at the Royal Opera House.

## Automation in the Entertainment Industry

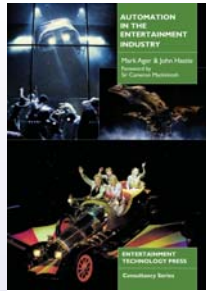
by Mark Ager & John Hastie

Entertainment Technology Press, 2009

This book is intended to provide insights and practical advice from those who use automation, to help the first-time user understand the issues and avoid the pitfalls in its implementation. In the past, theatre automation was seen by many as a complex, unreliable and expensive toy, not for general use. The aim of this book is to dispel that myth.

Says Mark Ager: "It tries to give some information that even seasoned consultants wouldn't know, and I think it does have some of that. It's also for the student who has no real knowledge of the theatre. It was intended that a first or second-year student would pick it up and read it, and then would later work on stage as an ASM or DSM and might say to the stage manager, who's never seen automation before, 'You know, I think we need to think about automation . . .'"

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So, on the Stage Technologies stand in Earls Court 2 at PLASA '94, alongside the first Acrobat desk, was its first winch product, the Big Tow (so named because of an accident during the product's testing involving a piece of heavy machinery and John Hastie's big toe). "We were lucky in being there just at the right time", says Ager (and no, he's not talking about witnessing Hastie's accident), "when Glantre and other customers were searching for these kinds of products."

Also at this time, automation was increasingly being adopted in theatres: the National Theatre had its drum revolve; various German engineering companies were installing systems into venues in Germany; and there was the Barbican, where Ager himself had been responsible for the system for the RSC. Stage automation was beginning to take hold on land and sea, and Stage Technologies was now in a perfect position to develop along with it.

Landmark projects came thick and fast: successes in the UK at Sadler's Wells and the Manchester Royal Exchange Theatre (both in 1998), the central show at the Millennium Dome (1999) and the high-profile Royal Opera House rebuild (1999-2000), were followed by increasing success overseas. These included the company's first project - together with JR Clancy - for Cirque du Soleil (*Zumanity*, Las Vegas, 2002), its first Australian venue installation (the Walsh Bay Theatre, Sydney, in 2003), its first Far East venue (the Hong Kong Cultural Centre, 2003) and its Queen's Award for Enterprise for 'outstanding international trade performance' (also in 2003), plus the opening of its first international office (Las Vegas, 2004).

"Those are landmarks that are still very special to us," says Nikki Scott. "Sadler's Wells, the Opera House and the Exchange have all been in over 10 years. In that time, they've progressed and moved forward, but they still have fundamentally the system that they started with, they're still enjoying using it and we have a great relationship with them."

### Support Structures

To maintain those essential relationships, the company devotes considerable resources to customer support, with four full-time service and technical support personnel in the UK alone. It's a clearly advantageous approach and one, we should note, which more than covers its costs over the long term. Ager says: "We hope it gives us an edge over our competitors: it certainly beats them in

those cases where we've swapped other people's kit out after six or seven years because it's unsupported."

He continues: "It comes from the West End ethos - if it goes wrong during the life of the show - and very often we're renting out the equipment rather than selling it - you've got to support it. You've got to make sure the show goes on. I think sometimes companies think, 'well, we've sold that - right, let's go' - and that's where it finishes."

The company's books also carry a significant sum for 'Warranty Provision' - to ensure that it is able to cope with unforeseen problems. "We have this money squirreled away in case things go wrong in the future, so that we can go out and fix it, because it's much more important to us to have a system that's working," says Scott. "Fundamentally, the whole company cares about the end product, and what happens on the stage or in the arena, or wherever it is. We want that to be right, going forward for years - as opposed to 'take the money and run'," she explains. "That's why we feel strongly about making sure theatre knowledge is blended in with our mechanical, electrical and software engineering disciplines; an insight into the workings of performance art is invaluable when creating equipment for the stage environment and many of our engineers come from a theatre background."

Another deliberate move the company has made is to expand its offering: the specialist electrical and software systems resource of the early years expanded to include mechanical design in around 2003, enabling the company to offer a more complete stage automation package. This mechanical engineering capability was given an even greater boost in 2008 when the company merged with Delstar Engineering.

There is also a deliberate policy of flexibility: they will undertake all of a project or part of it, and are even happy to supply their control systems for other companies' hardware, for example. Ager says: "We are quite happy mixing and matching. Some of our competitors will say they want the whole job; we'll just do the control system, or just supply some winches - we'll do the service and maintenance on other people's equipment when it's needed. I can understand why people say they want the whole pie - but some of these systems are so big that it's worth being able to mix and match with other suppliers. Also, the market is just beginning to mature, so we're getting systems that are 10-years-plus old and are needing *parts* of it replaced, not *all* of it: so that flexibility of approach enables us to meet that demand too."

### Expansion

And so to 2005 and the beginning of that remarkable three-year growth period which gained the company its listing in *The Sunday Times* newspaper's 'Tech Track 100'. What was behind that rapid increase in turnover?

"The growth has been largely due to us becoming more international, particularly America," says Ager. "We've done very well in that market."

Very well indeed: following their work for Cirque du Soleil on *Zumanity* and in the run-up to the production of *KÀ*, it became clear that a local base in Las Vegas would better support their ongoing work for Cirque, which later included *The Beatles LOVE* (see L&S! September 2006). From here, further high-profile stateside projects included the Tabernacle of the Church of Jesus Christ of Latter-day Saints in Salt Lake City, the Brooklyn Academy of Music, Carnegie Hall and the San Francisco Opera. Elsewhere, a project office in Italy supports the company's involvement with cruise ships built in that country; there is an office in Macau, opened in 2007, and one in Australia - all of which have helped broaden Stage Technologies' marketplace.

Ager also cites the increase in sales of mechanics as a significant factor in the company's growth in this period: we've already noted

the expansion into mechanical engineering design in around 2003, which widened the company's offering.

**Education**

In addition to these strategic moves, however, Stage Technologies has, to a quite significant degree, been responsible for nurturing its own market at grass roots level, largely through training and educational activities. The company's customer support programme encompasses a serious degree of training, employing full-time trainers with sharp-end theatre automation backgrounds: Alex Hitchcock, the training development manager in London, was responsible for plotting the automation for *Mary Poppins* in the West End, among a whole raft of other shows. Dave Ball and Mike Sharp fulfil similar roles at the Las Vegas and Macau offices respectively.

Scott explains: "What's quite different to lighting and sound, for example, is that people don't use these systems until they come across them in a professional capacity.

When you're at school you probably get to plug in a light and maybe operate a lighting board; you've seen sound systems - you've got one in your own bedroom - but nobody gets automation until they're in professional theatre. It's not an educated marketplace."

Ager adds: "One of the things we've been trying to do in the last few years is to get the kit out there and make it more affordable for the smaller venues - and a lot of that has been through hire . . . Every week Ted [Moore] will tell me of another small job they're doing - a winch for the Kings Head in Islington, or six sliders at the Hampstead Theatre, for example. It's about getting more kit out there, to get people used to the idea of using it. It's starting that learning curve earlier - getting them to think 'hang on, why aren't we automating this?' So there's a whole load of little jobs we do which nobody gets to hear about - but eventually it has an effect on the big stuff."

It's all about educating the market: "There's a danger that people see automation only as what the Royal Opera House has - 'it's not for us, we wouldn't be able to afford it' - but that isn't true at the ground level, it's about the same as investing in lighting or sound. We're getting people used to the smaller systems, finding out what they can do and what the advantages are. It is beginning to make a difference."

Ager has also actively engaged with educational establishments to get the stage automation message across: "We have put a big focus on this in various ways," he explains. "It started about five years ago when we began presenting to students - Hong Kong Academy,

Guildhall, North Carolina School of the Arts - various places. It's something we do quite regularly now. It was also the reason behind writing the book [*Automation in the entertainment industry* - see side panel] - to say 'here's what automation's really about', and try to answer questions and help people understand, so that if a winch turns up on stage, they don't ask 'what do I pull on?' - they ask 'where's the control system?' We want them to know about this stuff."

The situation can be made all the more difficult by long memories of the early days of stage automation. Dispelling those attitudes is important, says Ager: "Certainly, when we started, there was a generation that had grown up knowing about the National Theatre and its drum revolve, and all that had gone wrong with it - they had a bad association with automation. But when you speak to kids about it now, they are just so excited - you can see them realise that they can begin thinking in three dimensions. But you've got to start from the basics."

Such presentations have often been the only 'training' in automation that was available to students. But that's changing, and automation is beginning to appear on the syllabus at places like the Hong Kong Academy. "I would say that if a school hasn't got it on the syllabus in five years, they will be behind the times," says Ager.



John Hastie and Mark Ager.

**Current Stage**

Today, Stage Technologies employs around 160 people worldwide, and is perhaps unique in its field for the breadth and flexibility of its offering. Its

commitment to nurturing the market continues: it has been a prominent sponsor of the first North American conference (NATEAC) in 2008 and the quadrennial International Theatre Engineering & Architecture Conferences in London in 2002 and 2006 - and is providing sole platinum sponsorship of this year's conference (13-15 June). More recently, the company was also instrumental in organising the first UK Education Symposium on the subject, hosted by the Centre for Excellence in Training for Theatre, based at the Central School of Speech and Drama in Swiss Cottage, London.

Today, according to Mark Ager and John Hastie's book *Automation in the entertainment industry* (see side panel), 5% of the world's theatres use automation, compared with 0.3% 25 years ago. It's growth that Stage Technologies has enjoyed, and to some extent helped to create, since its formation in 1994. The forecast for the next 25 years is a six-fold increase to 30%. As the market matures further, and knowledge and understanding of the role of automation becomes more widespread, the future looks assured for this home-grown success story.

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