

theexplorer

THE RIGHT ROAD

Putting the
emphasis back
on business
fundamentals

MOVING STORIES

The new Dubai Metro leads the way in a new era
for public transport in the Middle East



Logistics is the infrastructure of life. In today's world, nothing can take place without some form of logistics. At Aramex we are at the heart of this exciting industry which is as old as civilization itself. We launched The Explorer to introduce you to our world, a world of racing against time and challenging the odds so the essential goods and services in your everyday life are always there – where you need them and when you need them.

aramex
delivery unlimited

The road less travelled



Welcome, everyone, to this third issue of our *Explorer* magazine, which I trust you will find both informative and engaging.

Since the last issue, the economic situation has started to crystallise around the world, with uncertainties gradually being replaced by clear challenges for the business community. Markets appear to be levelling and unemployment figures, an ever-important “lagging” indicator of financial health, may have similarly found their floor. It's now up to the corporate world to stimulate the economy as opposed to trying to arrest its decline.

While this is no simple task, we can afford to be cautiously optimistic. That is, as long as we have collectively learnt recent history's most painful lesson: wealth creation is not a matter of endless repackaging of non-existent assets but of innovation, entrepreneurship, consistent quality, responsible business practices, full stakeholder participation, and, especially in the logistics industry, maximum efficiency.

This seems to signal a return to business fundamentals, where commerce, not financial sophistry, drives the economy. As we start off down the road to recovery, our theme for this issue revolves around just that, the road – the basic facilitator of trade throughout history. Roads connect ideas and products to markets, link communities to workplaces, criss-cross cities and span continents; they are the veins through which most economic activity flows.

In our times, the road remains both an essential foundation for recovery and a powerful metaphor for it – whether it's the initial direction we take, the signposts along the way or the successful negotiation of the barriers and forks inevitably encountered to reach the final destination. In this *Explorer*, we look at roads and their meaning – socially, historically and, economically – and look forward to the journey towards renewed prosperity.

Bonne Route,

A handwritten signature in black ink, reading "Fadi Ghandour". The signature is written in a cursive, flowing style.

Fadi Ghandour
Founder & CEO, Aramex

theexplorer Navigator



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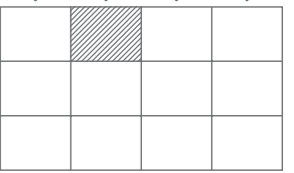
Published by:
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This magazine is not for sale and is distributed free of charge to businesses, public offices, organisations and individuals with an interest in transportation and logistics.

Cover image: Gallo Images/ Getty Images

Frontiers takes a quickfire look at the latest developments in the logistics field and the world of Aramex.



Toll for news

Control of the information superhighway poses a big dilemma to newsrooms around the globe: How to make it profitable

//// The newspaper is clearly an endangered species. In the US, newsroom employment has fallen by 15 per cent in the past two years, while in the UK, almost 70 local newspapers have closed since the beginning of 2008. French papers are only surviving due to government subsidies, and magazines have even asked their readers for donations. It's not hard to understand why: in 2008, more people got their news from the internet than from newspapers.

The news industry's future very much lies in the information superhighway. But the question is how media outlets can still make money from content readily available for free elsewhere. One man who has been a staunch supporter of "tolls" on virtual highways is global media mogul Rupert Murdoch. His News Corp group cut 3,000 jobs last year, and its newspaper division barely broke even, with quarterly profits collapsing from \$216 million to \$7 million year-on-year. The way to survive, Murdoch insists, is to make readers pay. "That it is possible to charge for content on the web is obvious from the *Wall Street Journal's* experience," he said, after seeing online subscriptions to *WSJ's* site surge past the million mark. "The current days of the internet will soon be over."

Sports channel ESPN is another great example, placing only certain content behind a pay-wall for the most zealous fans. The idea is that people's willingness to pay for a story is connected to the size of its potential audience.

Still, there are those who think the pay wall will be the medicine that kills the patient. "What Murdoch and the like need to acknowledge is

Profit levels from NewsCorp is largely profit delivered from distribution." Rob Edwards



that the historical profit levels enjoyed by [News Corp] is largely profit derived from distribution," argues Rod Edwards, a respected media

commentator and the man behind Techfold.com. "What the papers have seen in the erosion of their profits is not the devaluing of content, but the devaluing of their distribution network." Edwards, therefore, strongly believes agencies should be looking at more plausible solutions to revenue-generation, such as the eventual transition to paperless publications. "At their core, newspapers are 'news' organisations. The value they deliver is from collecting and analysing the news," he says. "Printing and distribution are not part of this core; they are vertical integration that history has imposed and technology has devalued. So, close the administrative departments, the circulation desk and the call centre. Anticipate the paperless future and proactively move towards it."

Whether the once-great newspapers of America and Western Europe can survive the transition from the physical world to the virtual one has yet to be seen. Plenty, though, will depend on the public's willingness to allow toll booths on the information highway.

Where in the World... did you last hitchhike?



Raja Gargour
Director of the Royal Automobile Museum, Amman

"Well, sadly, it wasn't that long ago. I was back in Los Angeles visiting the family when a brand new Bentley

screamed out of a side road without looking and slammed straight into my hire car - totalling both of them. When the tow-truck came to collect the car, there was no room for me to get a ride, and so I stood on the roadside, thumb out, until someone kindly stopped and gave me a ride back to the hire car place."



Mahmoud al-Massad
Award-winning documentary maker

"Well, I think the last time I tried I was waiting for a taxi and no one picked me up, so I don't think that counts. So it

must have been in this area of no-man's land in Holland, between Rotterdam and Utrecht, when I was getting the posters made for my film *Recycle*. I got a lift there, not realising where it was exactly, and made no provisions for getting back. I left at 3pm, and the roads were dead - and no sign of even a bus stop. Eventually, a truck stopped and I rode to Rotterdam, completely in the wrong direction from where I was going, but I was so relieved to be back in civilisation! Good thing the Dutch are such nice people!"



AFP / Reuters

Net for pay

Will we soon start paying to use the web?

Charging for content is one thing, but charging for using the entire internet - over and above a phone bill and provider - is even now gathering pace. Net neutrality is the principle of treating all information flowing across the internet equally, but with more and more people streaming data-rich video and playing online games, the internet faces congestion concerns. Some ISPs want to charge high traffic sites extra fees, while others want to stagger access for the heaviest users.

For Net Neutrality

Who's talking: Save The Internet Coalition, the Open Internet Coalition and Public Knowledge.

The arguments: Their reasoning is that freedom of speech is at stake, since companies would be allowed to interfere with or discriminate against information services. These supporters also argue that ISPs can be quasi-monopolies who only want to protect their own interests.

Quote: "Too often, the discussion of why we need to protect the open internet degenerates into a stale debate about regulation versus the wonders of the free market. In fact, it's impossible for innovation to continue apace without some basic rules of the road to protect that innovation."

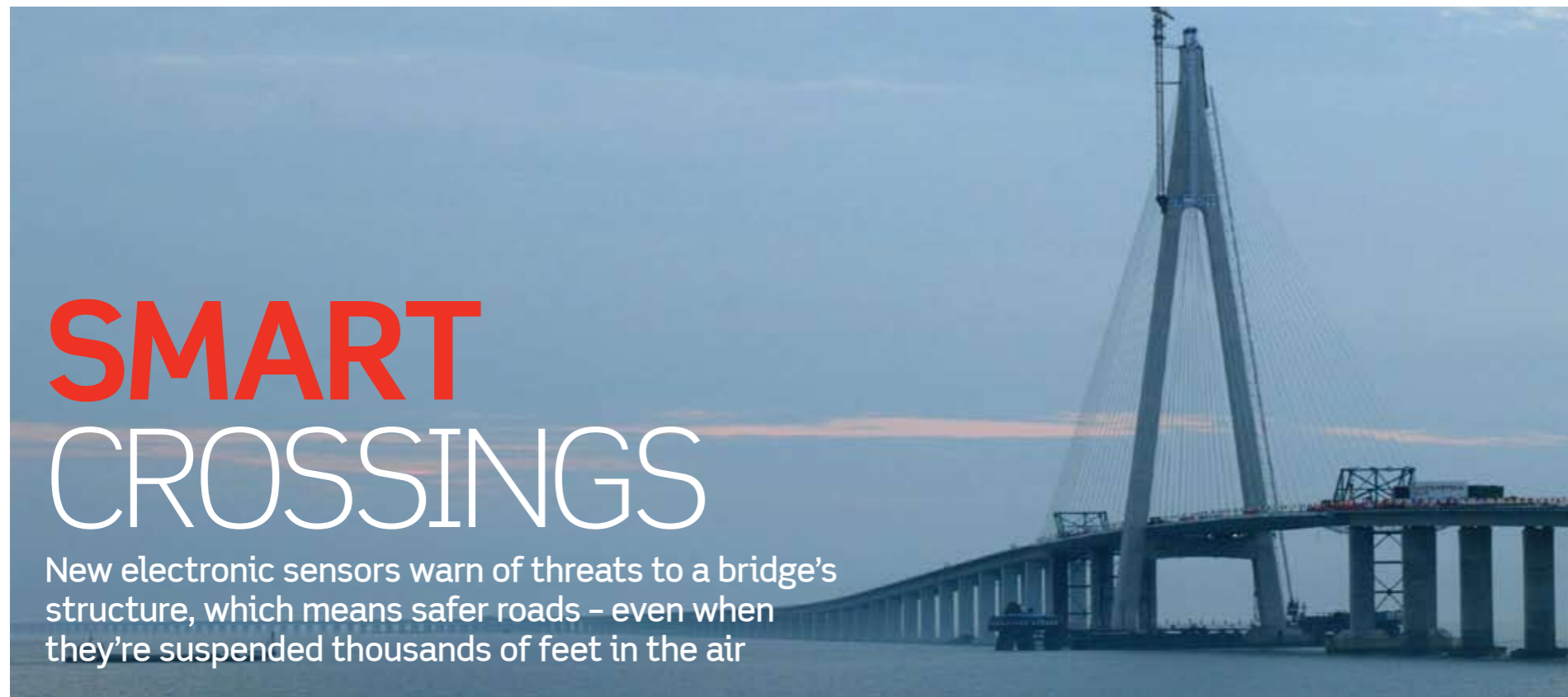
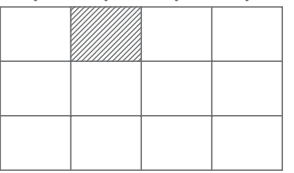
Against Net Neutrality

Who's talking: The non-profit Cato Institute and Hands Off The Internet advocacy group.

The arguments: Mainly that this is a technical issue best left to engineers, and that the cost of net neutrality will be passed onto consumers. Dissenters also argue that net neutrality is a "fuzzy concept", and that regulation can be difficult to enforce.

Quote: "The fundamental problem is that any network neutrality regulation Congress passes will be enforced by the FCC, and no one has more influence over the FCC than telecom companies. It's simply naive to expect an agency that has repeatedly promoted the interests of large telecom companies to suddenly become strong advocates for the rights of consumers."

Frontiers takes a quickfire look at the latest developments in the logistics field and the world of Aramex.



SMART CROSSINGS

New electronic sensors warn of threats to a bridge's structure, which means safer roads – even when they're suspended thousands of feet in the air

/// The disaster that took place in the American state of Minnesota in August 2007, when an eight-lane bridge across the Mississippi River in Minneapolis collapsed during the evening rush hour, pushed the engineering industry to find better ways of keeping the world's bridges safe. The Minneapolis bridge, spanning the I-35, collapsed ten years before the end of its "life expectancy" – which apparently all modern bridges have. The challenge for architects and engineers was not only creating better structures, but also creating technologies to warn of impending faults. It's all designed to ensure vital routes across the world stay open.

"No matter what we do, there are limits to human sensing capabilities," says Mohammed Ettouney, a principal in Weidinger Associates Inc, a New York engineering firm that has been working on developing new construction methods. "We can't see hidden cracks, for

instance, or we can't feel the erosion after a flood. Automatic detection can make the difference between a major disaster, a costly retrofit or a minor retrofit."

Enter next-generation monitoring systems, which are helping to create the so-called "smart" bridges – with early-warning sensors that monitor a bridge's health. The St Anthony Falls Bridge, which recently replaced the one over the I-35, is made up of wires and fibre-optic strains built into the span which constantly report on structural weaknesses such as corroded concrete and strained joints. "The technology is about speed, it's about quality, and it's about efficiency," says Jon Chiglo, the civil engineer who managed the \$234 million project for the Minnesota Transportation Department. "We're not putting on Band-Aids. We plan to be energy-smart and resource-smart in the way we build and maintain our infrastructure."

"We are looking at how to make a cement-based sensing skin"
Jerome Lynch

It seems Chiglo's team was pretty close to the mark, since the total cost of incorporating the smart technologies amounted to \$1 million – or less than 1 per cent of the total building cost. The new Minneapolis bridge joins a handful of smart bridges with such sensors; another example is the striking 3km-long Charilaos Trikoupi bridge in Greece, which spans the Gulf of Corinth, providing a vital transport link between the town of Rio on the Peloponnese peninsula to Antirrio on the mainland. This bridge, opened in 2004, has roughly 300 sensors that alert its operators if an impending earthquake or weather conditions warrant it being closed to traffic, not to mention the state of its overall health. These sensors have already detected some abnormal vibrations in the cables holding the bridge, which led engineers to install additional weights as dampeners.

The technology might be incredible, but developers are hardly resting easy. The next age of sensors to monitor bridge health will be wireless, making installation and maintenance more efficient. Bridges in South Korea, China and Taiwan have been tested with wireless sensors to some success.

According to Jerome Lynch of the University of Michigan, the chief researcher on a project to help design the next generation of bridge monitoring systems, the newest developments will be skin-deep. "We are looking at how to make a cement-based sensing skin," he says. This will detect excessive strain in bridges and offer what will in effect be a "physical" check-up.

"[This] will add to what is currently being done, not replace it," says Professor Tim Gordon, head of Michigan University's Transportation Research Institute's Engineering Research Division. "The infrastructure problem and the feasibility of new monitoring strategies are emerging at the same time. We believe we have ways of testing the performance of bridges as integrated structures, not just inspecting their components."

And while the benefit of these technologies will probably only be felt in the decades to come, the world's bridges will be better places to deal with the growing needs of an expanding world. Like keeping it all moving.



Graphic / Newscom

SOLUTION EVOLUTION



2. Bridges
Charting the evolution of our modern day solutions

Year 0 The first bridges ever are made by nature, such as a log fallen across a stream. The first bridges made by humans were spans of wooden logs, using a simple support and crossbeam arrangement.

100 The Alcántara Bridge, a stone arch bridge using cement, was built over the Tagus River at Alcántara, Spain, by the Romans in 106. The bridge stands strong today.

1400 Rope bridges, a simple type of suspension bridge, are used by the Inca civilisation in the Andes mountains of South America. These were vital to connect communities across steep-sided valleys.

1700 The first book on bridge engineering is written by French engineer Hubert Gautier in 1716, inspiring fellow engineers and enthusiasts to find better means of designing such structures.

1780 A major breakthrough in bridge technology comes with The Iron Bridge over the River Severn in Coalbrookdale, England, in 1779 – the first ever cast-iron bridge.

1840 The advent of steel enabled the construction of much larger bridges on the iron truss model. Later models employed the ideas of the great Gustave Eiffel.

1940 The Upper Steel Arch Bridge in Niagara Falls, New York, is completely destroyed after an ice jam in the gorge forced the bridge off its foundations.

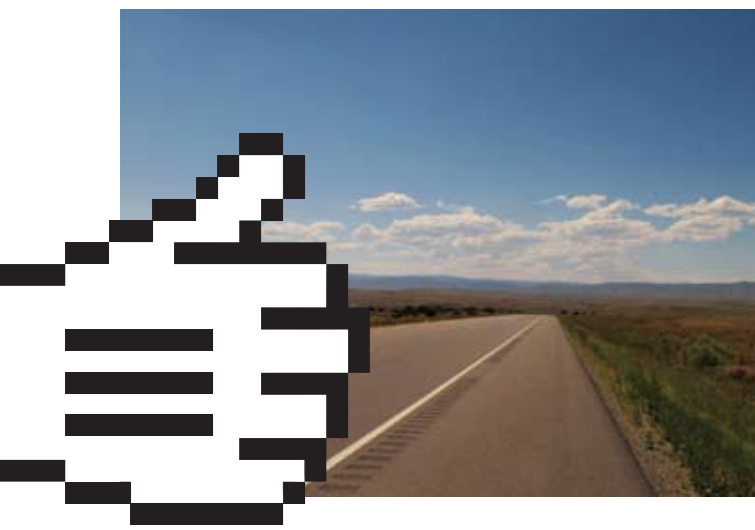
2007 The Hangzhou Bay Bridge, the longest trans-oceanic bridge in the world at 35.6km, opens, linking Shanghai with the Ningbo and Zhejiang provinces.

2012 The date for the completion of the Sheikh Rashid bin Saeed Crossing, the sixth crossing to be built in Dubai. The bridge will hold the title of longest in the world.

Hitchhiking 21st Century style

Words: Samer Aksoy

Virtual hitchhiking is a way to minimise the damage of single-occupier car travel



One of the most instantly recognisable hand signals is the extended, skyward-pointing thumb inviting offers for a ride. But it could be the unlikely next victim of technological advance. Hitchhiking has, of course, been around for thousands of years as a means for those of modest resources to get around. Now, though, with the rise in the cost of transport and increasing concerns about carbon emissions from cars, hitchhiking is suddenly re-emerging as the most effective way to get around.

These days, it has moved well beyond horror-movie stereotypes and even cast aside the undeniable social stigma of heading to work down a major trunk road

with "city centre" scrawled on a slice of cardboard. Of course, it's now all done through the internet.

Websites that connect car owners with would-be hitchhikers are springing up across the West. Sites like Ridester.com, Gishigo.com and the most popular, Pickuppal.com, connect frequent travellers – long-distance commuters, salesmen and the like – to people wanting to go to a certain destination and not wanting to be restricted by public transport schedules or prices. It requires simple registration, after which travellers can connect to passengers through date and place searches – and a price is then

negotiated, often based on sharing petrol costs. As in eBay, registered drivers have public profiles and information, and will lose their status should they default, change plans or be an undesirable travel companion. Everyone also knows who has collected whom and where they were going.

George Dunford, travel writer and avid hitchhiker, says it's "like having a digital thumb", while frequent user Kristen Nicole stated to The Explorer that it is "a more advanced version of the casual carpool that I used to use... it's good for the environment and good for the community. Great idea!"

Another development in virtual hitchhiking is a mobile application that is

available – exclusively, of course – on the iPhone, and matches drivers and hitchhikers travelling in the same direction. Designed by Avego and currently available in the US with a plan to expand worldwide, this service might possibly unleash the hitchhiker hidden inside all of us – bearing in mind that you must buy an iPhone first.

But with the twin benefits of saving money and helping the planet, getting your rides by way of the virtual highway ought to be the trend for 2010 and beyond. It may help kill the thumbs-up you see on the real highways, but it's not like you ever used that to get to work for 9am anyway. Right?



PEDALS OF HONOUR

54 hours to complete a race from one end of the United Kingdom to the other – and raising more than £3,000 for a UK children’s charity in the process

It wasn’t the usual guaranteed delivery from Aramex, but the global logistics company certainly ensured the successful completion of a unique length-of-Britain challenge in September. Three amateur cyclists from one of Aramex UK’s customers, Pearson VUE, were attempting to ride from one end of the United Kingdom to the other – in just over two days! The idea came from Jerry Cross, who has been racing competitively since he was 12 years old, and colleagues Mike Hobbs and Ian Timlin, both completely new to cycling. Jerry somehow managed to persuade the pair that cycling the 1,300km from the tip of Cornwall to the top of Scotland would be an ideal challenge.

“We’re doing this because at last year’s IT training awards we listened to the chairman of Childline talking about the charity’s work and how many calls they couldn’t answer each day because of a simple lack of funds,” says Mike Hobbs, Channel Sales Manager, Europe, Middle East and Africa, at Pearson VUE, a computer skills certification company. “It made my eyes water to think of how those children had gathered up the courage to call and the time was right to undertake a physical challenge to help raise as much money as we could for them.”

Training began in earnest several months ago, with 200km rides a common occurrence on weekends. But the problems weren’t simply physical: when they were up to speed on the bikes, they then had to confront the problem of how they would support their ride along the route. Their plan was to ride in relay fashion, each cyclist pedalling for four hours while the remaining pair would rest in a motorhome that would accompany the team – and that was where Aramex stepped in.

Pearson VUE has been an Aramex customer for over a year, mainly utilising international express services for both imports and exports, as well as sending regular shipments on Aramex’s European road freight service. It was fitting, therefore, that Aramex’s sponsorship enabled the team to hire the motorhome. The team was able to set off on schedule – and with a roof over their heads.

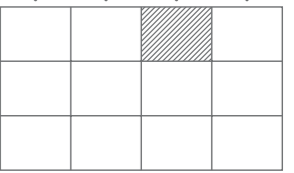
“The weather was amazing throughout,” says Jerry, after completing the two-day adventure. “We really couldn’t have been luckier, there were gentle winds along the whole route except when we reached the Cairngorms in northern Scotland. There was a really tough hill climb as we came out of Lancaster and we did have to negotiate our way round some rather tricky roundabouts in Stafford and Perth, but we made it all the way to John O’Groats.”

Commenting on the cyclists’ achievement, Aramex’s UK Country Manager, Jim Armour says: “We are very proud to have played our part in helping these amazing guys achieve their goal. To cover that distance in such a short amount of time shows fabulous determination and a tremendous will to succeed.

“Aramex takes an active part in supporting causes that can benefit both the local and wider communities and we are delighted that the cyclists from Pearson VUE are able to donate so much money to an important charity like Childline,” he concluded.

C 1 Frontiers

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LEAP OF FAITH

Aramex’s Country Manager for the United Arab Emirates, Samer Hajjar, takes the ultimate plunge over the Gulf



“I have always been the type of person who loves taking risk. But I had long wanted to go further, and always dreamed of the challenging, breathtaking adventure that was skydiving. So, I booked a slot and, early one morning, travelled to Umm al-Qiwan Airport, a small airfield in the middle of the desert. I started off by signing some papers that I am jumping on my own responsibility and death could be a possibility of this jump – which felt more like a will than a disclaimer. And despite being more than a little unnerved, I went ahead to the ground exercises. We learned how to jump from the plane, including the optimum position in air and the desired landing. Almost instantly, we boarded the plane and before I had time for second thoughts, we were airborne.

I don’t mind admitting I was more than a little scared. We reached the desired altitude of 11,000ft and the crew opened the door to reveal a gaping sky. My heart was pounding 1,000 beats a second and, realising that this was it, what I had been building up to, I abandoned any sense of logic and headed for the door – and simply jumped. And once in the air, free-falling, I opened my eyes and started to enjoy each and every second of what is an incredible experience. After less than a minute, we open the parachute and float towards the ground, still thousands of feet below. The descent was gradual and enabled me to appreciate that, yes, I had just jumped out of a plane. It was a thrilling experience that I am more than willing to go through again – and I invite everybody to try it out, too.”

What have you explored today?



Assem H. Hamzeh
Managing Director
ChoCo'a LLC

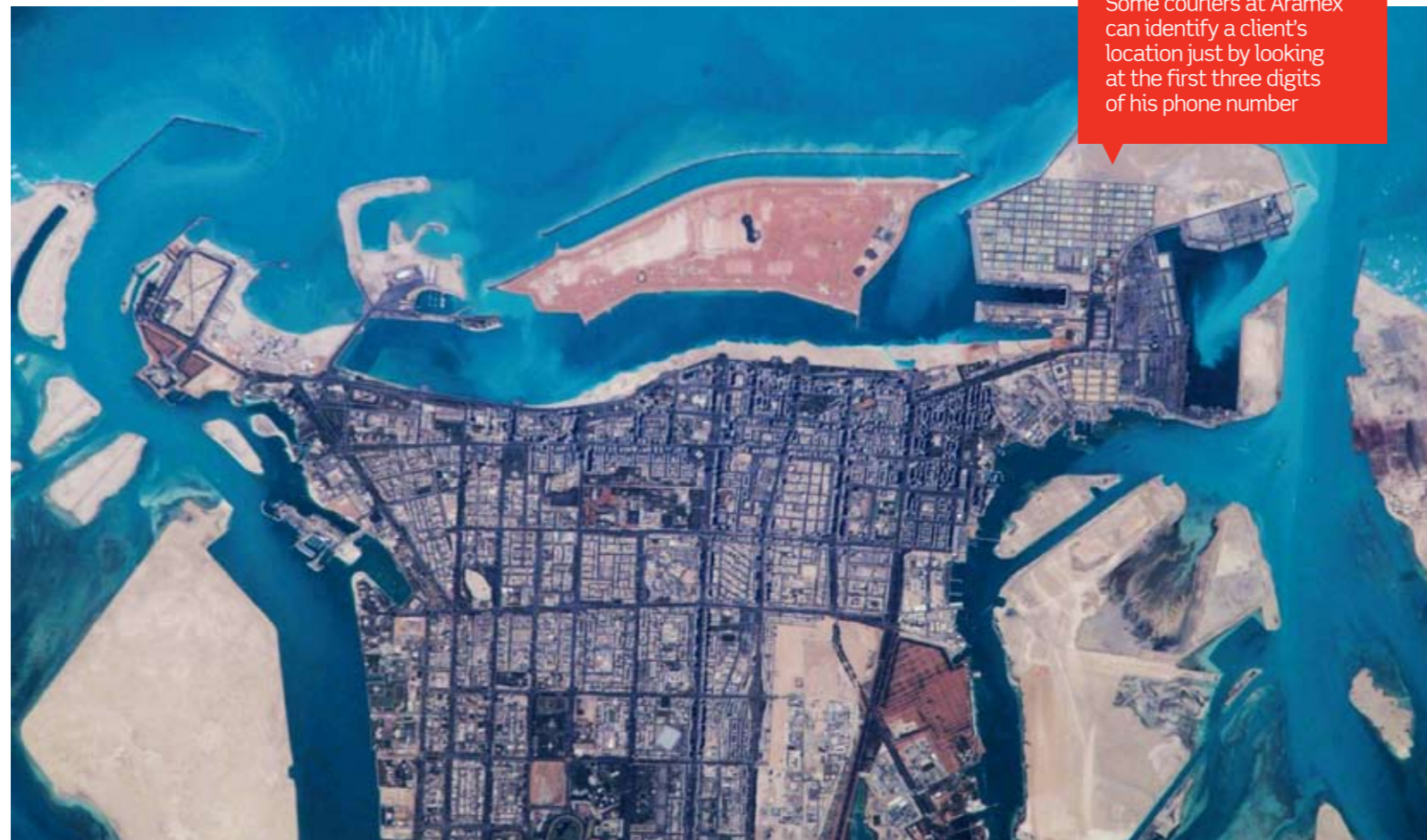
“As corny as it sounds, my most recent exploration adventure was that of my children’s. As most of Dubai residents, I was considered a workaholic with very little time for my family. After a wakeup call from my wife, I joined my kids’ soccer team as an assistant coach. Seriously, it was the most rewarding experience for me; I got to see them in their environment and was very proud of them and their achievements. They’re great kids and I’m very happy that I’m once again involved in their lives.”



Michael Trueschler
Director
Citrus TV FZ LLC

“What I have explored lately is how good my life really is. As everyone else, I am facing problems in business and my personal life. But putting this in relation to the terrible situation the world is currently in, I am very fortunate, and I think many of us really are. Just look at the people who lost their jobs and sometimes their homes, or who lost relatives in the recent floods in the Philippines, where life changed completely from one day to another. I am reminding myself more than ever to make the best out of every day, because things can change in an instance. I believe that in times like this, we should rethink our own approach to life and others. Are we focussing on what is really important in life, which is family, friends and our health? If not, it is time to do so. This is not meant to be philosophical or wise. It is more a simple reminder to look at ourselves, and maybe more of us will realise how good our lives really are.”

Frontiers takes a quickfire look at the latest developments in the logistics field and the world of Aramex.



Some couriers at Aramex can identify a client's location just by looking at the first three digits of his phone number

Graphic: Newscom

THE KNOWLEDGE OF ABU DHABI



The challenge of being a courier in Abu Dhabi has less to do with the traffic than the complex warren of unnamed streets

Words by: John Mather

Armed with a map, Aramex couriers navigate the capital of the Emirates without addresses, street names or cautious fellow drivers. Two hours into Mohammed Shafeeq Mughel's morning shift, he has been cut off by a host of angry drivers, blocked in by a parked lorry and nearly rear-ended two cars whose brake lights weren't working. But the deliveryman keeps his cool. When another car forces him to brake suddenly, he calmly points out: "No brake lights working for this gentleman. That is dangerous."

Mughel is a courier with Aramex, a company whose daily operations in Abu Dhabi are invariably defined by the city's lack of a formal addressing system. Delivery men of all varieties – carrying packages, food or emergency services – must rely on landmarks to navigate streets that go by multiple names and reach destinations that are often specified with less than numerical precision. But for Mughel, finding buildings is easy; it's the other drivers on the road he worries about.

Not that Mughel is exactly easy on the gas pedal himself, but after working as an Aramex courier for 16 years – a grand total of 13 of them in the district of Musaffah – navigating the roads has become robotic. Although he admits that he knows the names of only a handful of streets, he has managed to commit every back alley, traffic black spot and even tyre repair shop to his obviously considerable memory.

As a matter of strategy, Aramex tries to familiarise each of its drivers with one area. Unlike in New York, says the quality service manager Praven Eapen, where a person trying to get somewhere just needs a street name, building number and map, couriers here need an intimate knowledge of their surroundings. He boasts that he's never heard of a driver getting lost, and adds that some couriers at Aramex are so familiar with the city that they can identify a client's location just by looking at the first three digits of his phone number.

The explosion – and subsequent expansion – of these new neighbourhoods can cause significant problems, though. When people began moving to Khalifa City, Eapen helped drivers learn the various roundabouts and roads. But when they tried to follow the numbers on the streets, they realised there were many duplicates. "We realised there were two 'Eight Streets'," he says, miming flipping through a map.

When it comes to Musaffah, though, Mughel the courier is beyond toiling with a map. He's there six days a week, driving eight to nine hours a day. He wakes up at 5am and arrives at the Aramex office well in advance of his 8am departure time. By 7:45am, the building is buzzing with activity as handfuls of couriers organise the morning's haul. Thousands of packages pass through the location daily.

Once he arrives in Musaffah, the distance between stops may be no more than 30 metres. He drops off documents at Emirates National Sack Company, then a box at the Gasket Factory and then picks up a file at something called Information Fort LLC. In his lap is the run sheet for the day. He planned his route while idling in traffic on the way here, and reviews the preparations as he heads for his next delivery.

He swerves to avoid a cab driver barreling out of a driveway. Mughel has only been in one accident in 16 years. It was 12 years ago; a car changed lanes and smashed into him, wrecking the car but thankfully leaving him unscathed. "By the grace of God, I am still going on," he says. As we pass more trashed vehicles, Mughel becomes reflective. "Driving is an art," he says. "What do you think?"

A version of this story first appeared in The National newspaper

The cars of tomorrow



Car design hasn't appreciably changed in the last two decades – externally at least. But one man wants to change our approach to the car forever

Words by: John Mather

Ever used a Sony Walkman? Or an Apple iMac? Ross Lovegrove, the man who designed them, has been commissioned by BMW to re-evaluate car design for the 21st Century, taking into account the environment, our needs and our available resources. Although it's unlikely that his space-age lunar buggy will get made soon, the philosophy behind it underlines the kind of radical rethink we need in automotive design to reflect our changing needs. It also explains why, despite his work with a range of consumer brands, he's drawn to the car industry.

What does your innovative BMW study car tell us about your views on car design?
Ross Lovegrove:
We are in the 21st



century and we have new materials, technologies and processes at our disposal, so instead of slapping each other on the back and saying 'God, that's beautiful', we need to show that we are going to use resources in a fantastically intelligent way. Some car companies are bigger in terms of profit than a lot of countries, so why don't they explore some more?

We have seen some improvements in car design in recent years, but what are the prevailing problems that we're still stuck with?

RL: You still see big fat wheels all the time, for one, and I was told, when I was a little boy, that if you want to produce less friction you use bicycle wheels. We know the reality of driving: If you aren't on a freeway or highway, you're only doing about 20kmh. So you don't need all that extra performance or suggestion of performance. There is an arrogance in today's car design. It's the idea that you're in that tank and you're isolated from the real world.

Is that why your designs are so controversial in the car industry?

RL: Well I ask myself the same question. But I have an ability to move people emotionally with my form and my philosophy. And what I am trying to do is find a way for people to say one day: Ross, he's a really interesting guy. Let's work with him on a car. I'm not doing it because I need to show off by doing a car. I think I've got something to say, to bring this thing into the world of reality with lesser prices.

When you look at Mercedes or BMW, though, you don't really see cars that reflect the needs of big cities or the environment.

RL: They don't. And it's getting worse. There are some good signs, though; take the Smart Car. I have this idea to do a thing called the Smarter Car. You just take it a step further. You go back to the bubble cars, look at the lightness and transparency. In cities now, you cannot go fast. It needs to have some gentleness. It needs to relate to the process of architecture. Put a new car next to a Zaha Hadid building and the car would be really primitive compared to what she is doing.

Japanese dreams



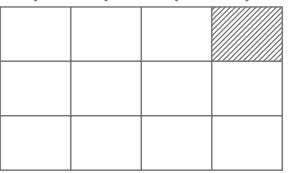
One of the busiest subway systems in the world gets greener stations

Japan has the world's most well-connected and integrated public transportation systems, and it already contributes to the environment by making the car

virtually unnecessary. However, Tokyo's Shibuya Station is taking it one step further, by focusing on the transport hub itself. A bold, innovative new design by architect Tadao Ando, known across the

globe as a pioneer of the use of light, wind and water in his projects, is set to reduce energy consumption by harnessing air flow to create a new strategy in subway ventilation.

The design sees the hot air produced by the subway trains flow up the central atrium, which is a massive, open three-floor space, and out into the open air. This in turn causes cold air to flow into the station, providing natural ventilation and greatly decreasing the station's reliance on air conditioning. Another energy reduction measure is the use of water pipes lining the station's outer shell and also coursing under the platform to provide a cooling effect. The station is literally greener, too, by including rows of indoor trees, not only providing additional cooling, but also creating oxygen and a calmer ambience. The goal is clear, according to Tadao Ando. "Architecture has a strong responsibility to nature and society," he says.



GENERAL DEMISE

The collapse of General Motors, one of the biggest employers in the US, had catastrophic effects on its supply chain – but are the roads closed forever?

Words by: Dr Iyad el-Anis, Nottingham Trent University



Graphcast / Corbis

For the best part of the past century, General Motors (GM), one of the “big three” Michigan automotive companies, was thought to be “too big to fail”. At the end of 2008, this belief was shattered as the company embarked on a dramatic slide towards bankruptcy, spreading panic throughout not just the US auto-industry but the entire manufacturing sector. On June 1, 2009, the company filed for Chapter 11 protection in what became the fourth largest bankruptcy in US history. The fallout impacts the firm’s partners and suppliers; not least the several thousand corporations in GM’s supply chain.

Yet, the bankruptcy of GM can hardly be described as unexpected. No company, however large, could survive the sort of losses GM suffered without having to undergo major re-structuring. In 2008, GM saw mammoth losses of \$30.9 billion, which increased its total losses since 2005 to \$82 billion. Things got even worse by mid-2009 with GM declaring it had debts totalling \$172.81 billion and global assets only amounting to \$82.29 billion – not even enough to service half its debt. A combination of terrible planning and financial mismanagement were blamed for the situation, although most observers and companies affiliated with GM didn’t seem to appreciate how irreparable the damage was.

In an effort to re-emerge from its collapse as a more efficient, streamlined and ultimately smaller automotive business – helped by President Obama’s urgings – GM has been forced to restructure its operations significantly. This is being done in two ways: the first is to scale down US operations, including manufacturing, distribution and servicing activities. The second is to sell off GM’s assets and subsidiary companies around the world. This restructuring will have negative impacts on GM’s suppliers as demand for their products and services will decline accordingly.

The most worrying thing for these companies is that outstanding contracts and money owed to them by GM will not be realised, potentially causing their own bankruptcy and collapse. This must have other automotive corporations, both in the US and around the world, in a spin as many of



them, such as GM rivals Ford, rely on the very same suppliers for some of their own manufacturing, distribution and servicing needs. In fact, it is estimated that if GM totally collapses and all its operations cease, up to 2.5 million jobs will be lost in the US alone. One million of the job losses won’t even be in the automotive industry at all but in related services, proving just how integrated the sector is within the US economy.

In the case of GM, the ill-fated decision taken in the mid-2000s to focus on SUVs, trucks and inefficient but powerful smaller cars demonstrates this high-risk environment. GM wanted to maximise short-term profit only for rocketing oil prices to all but kill the gas-guzzling beasts. Coupled with the global recession and the obvious popular interest in “greener” vehicles, GM had invested billions of dollars in projects that were predestined to fail.

So to the new plan for GM. After receiving over \$50 billion in taxpayers’ money, GM is now in effect owned by the government. As part of this enormous government bailout, Washington is demanding that GM downsize its US operations, sell off inefficient or costly foreign operations and refocus on small, greener vehicles for the future. This should make companies such as Delphi, Robert Bosch, TWR Automotive and American Axle breathe a sigh of relief as their services will still be contracted by GM and they should be guaranteed any back-dated debts owed them. For the rest, Washington is likely to guarantee all GM debts to the companies in its US supply chain as part of the bail-out plan.

Unfortunately, affected companies outside the US will not be so lucky. In Sweden, for example, GM subsidiary Saab has been denied assistance by the Swedish government and is now for sale to the highest bidder – or indeed, any bidder. The US Government certainly will not be offering up US taxpayers’ money to support Swedish companies that have been working with GM, and their GM-owed debts are not likely to be paid up any time soon. The same goes for supply chain companies that have worked with GM around the world in places as far-flung as China and Venezuela.

The demise of GM, therefore, has led to a de-globalisation of the company. Companies that have manufactured parts for GM vehicles, offered distribution, servicing and marketing are faced with a loss of business. And the troubles will in turn be felt by many other companies. GM’s Pontiac brand has already been cancelled this year, which means that Lear and Johnson Controls, suppliers to GM of mechanical and interior components such as seating, is facing a tough period of decreased sales. Others may be able to weather the storm a little longer and hope that their services will be requested by other companies or even possibly a resurgent GM.

“The role played by the supply chain in integrating automotive companies has to be acknowledged and managed. This cannot be overcome by good intentions”

The hope of many in the industry is that other major car manufacturers will buy-up GM operations and maintain demand in the supply chain. There may be some cause for optimism here as some companies have already bought GM operations and are carrying on business as usual. GM’s Hummer subsidiary, for example, is being bought by China’s The Sichuan Tengzhong Heavy Industrial Machinery Company. Representatives from China have said that Hummer production will continue apace and little will actually change. Still, it’s not going to be plain sailing. In order to break even, the current plan is to cut annual production and sales in the US market from 16 million to 10 million vehicles, meaning the companies that will still supply GM are going to have to make do with reduced orders. For GM’s employees the story is even more negative: 4,000 will lose their jobs by the end of 2009 and further cuts are likely in 2010 as production is kept below 2008 levels.

Ultimately, GM, and the global automotive industry, needs to address two things: Firstly, better market analysis. GM would not have supplied a market demanding greener, cheaper and more fuel efficient vehicles with expensive fuel-hungry models if it fully understood its customers. Secondly, the role played by the supply chain in integrating automotive companies has to be acknowledged and managed. This cannot be overcome by good intentions or through isolated corporate decision-making. Instead, companies should use GM’s decline as an example of what can happen if profit-driven competition is not checked with some industry coordination.

General signs



GM was the company most conspicuously affected by the economic crisis in America. Fadi Ghosn, Chief Marketing Officer of General Motors Middle East, offers his assessment of the future of the brand in the region.

Explorer: How have the recent developments regarding GM affected the company’s business in the Middle Eastern markets?

FG: GM US has now been given court approval to form the New GM from the company’s strongest assets and with a specific focus on cars, customers and culture. GM Middle East is now part of the New GM – and GM has been in the region for over 80 years and is very much a part of the fabric of the Middle East.

Explorer: How much of the slowdown in the Middle East is down to perception rather than reality?

FG: The financial crisis has affected all industries and all companies and is

definitely not based on perception. The global crisis led to a severe tightening of consumer credit at the end of last year that continues to this day. Until there are true signs of global recovery and a strong return of confidence, this will continue.

Explorer: Can you provide a better idea about the New GM and its presence in the Middle East?

FG: In the Middle East, we will continue to focus on the three core brands: Chevrolet, GMC and Cadillac, which have an iconic presence in the region. In spite of the very tough market conditions experienced so far this year, we actually outperformed the

market, increasing our market share. Our new vehicle launch plans are unchanged for 2009.

Explorer: What will be the fate of the brands that fall under old GM?

FG: Well, Sichuan Tengzhong Heavy Industrial Machinery Co and GM have confirmed details of the proposed transaction for Hummer, which, if it goes through, will assume existing dealer agreements. We are negotiating with a Koenigsegg Group-led consortium for the purchase of Saab that secures Saab’s future, with a sale expected to close by the end of the third quarter this year. GM and Penske Automotive Group have

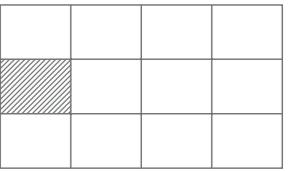
proposed a transaction for Saturn, which is a brand not sold in the Middle East.

Explorer: Will you start relying on hybrids, or do you feel that the market in the Middle East is still not enthusiastic enough about them?

FG: GM leads the way in bringing hybrid technology to the masses on a global scale and the Chevrolet Volt, due to be launched in 2011, is testament to that. In the Middle East, GM dealers sell some of the most fuel-efficient cars and trucks in the market. While hybrid vehicles will generate many sales across the globe, the Middle East is not expected to be a core market for them.

Explorer: Has your logistics and supply chain been affected by the whole situation in the US?

FG: No, our operations across the region continue to receive and deliver parts as usual. Our \$73 million Middle East Parts Distribution Center ensures we can provide the region with requested parts in a very short time. The Center supports 10 Middle Eastern and 20 African countries. It covers 59 distribution points: 38 in the Middle East (GM dealers and ACD WDs) and 21 in Africa (GM dealers). We monitor inventory very closely to ensure all spare parts are readily available and can be dispatched to any dealer in any country in the MENA region within 48 hours.



OVERGROUND

The new Dubai Metro is now operating in the Emirati city, with hopes that the rapid train network will ease traffic and boost business. But will enough people use it to commute to work – and what can other cities learn? **Words by: Duncan Forgan**

/// The city of Dubai, where progress is defined by which leisure miracle can be achieved by tomorrow lunchtime, has just revealed an altogether more functional addition to its futuristic skyline – and for a Middle Eastern city, it's no less astounding than a sail-shaped skyscraper or an indoor ski slope. In September, the red ribbon was cut on the most advanced public transport initiative ever seen in the Arab World. The Dubai Metro is not only the region's first automated rail system, it is set to be the world's longest, and the centrepiece of the government's plans for a fully

integrated public transport network. The system is estimated to have cost around AED15.1 billion so far and is being constructed in two phases: the Red Line and the Green Line. The Red Line, now fully operational, is 52.1km long and runs from Rashidiya near Dubai International Airport to the Jebel Ali neighbourhood, encompassing 29 stations. The 22.5km Green Line will run from al-Quasais in the east of the city to Jaddaf on the western end of Dubai Creek, taking in 19 stations en route. Another two lines – the Blue and the Purple – are in the pipeline and will provide another 96km of track.

UNDERGROUND





Grapheast / EPA / AFP

“People will no longer miss meetings due to traffic and will arrive at work in a better state of mind as journey times fall”

It's part of the plan to move people around the emirate without using the car – lessening the burden on both commuters and commercial transportation. “As Dubai grows,” says Mattar al-Tayer, Chairman of the Board and Executive Director of the Roads & Transport Authority (RTA), “commuters must be provided with excellent public transport alternatives, as a comprehensive and widely used public transport system will relieve pressure on roads and eliminate log-jams.”

It's not just wishful thinking. The RTA has pledged to spend AED75 billion in the next 15 years, with AED33.5 billion earmarked for public transport. Key to this is the development of the Metro, which the RTA hopes will transport 12-17 per cent of the city's commuters – and remove 10 per cent of the rush-hour traffic. Hopefully stories of people leaving their houses in Sharjah at 4am to avoid the jams and catching up on their lost sleep in the carpark, will be relegated to boomtown legend.

But the benefits aren't solely for commuters. “Perhaps not everyone will be able to leave their vehicles,” says al-Tayer, “but there will be a growing constituency that will. All of which is bound to improve the liveability of the city, its attractiveness as a destination to work in and visit – and, as congestion eases, its productivity.”

While not even the wildest of optimist would contend that Dubai's notoriously clogged highways will immediately become a thing of the past, with recent polls suggesting that 47 per cent wouldn't be tempted to use it even if were free, at least the city is taking its public transport seriously. “Our primary task is to provide and maintain a seamless multi-modal transport service,” says Paul Anderson, of Serco, the international services company awarded the contract for the metro. “That means that passengers – whether using a bus, taxi, or park and ride service – will experience a five star service in terms of affordability, accessibility, punctuality, aesthetics, cleanliness and security from the first to last mile. If we don't provide and maintain these standards in the first instance passengers will lose confidence and not use the service – it's as simple as that.”

The pricing structure for the system, unveiled in late June, might tempt those addicted to their cars. Ranging from AED2.50 to AED6.50 for standard single trip tickets, it competes with petrol and toll-road costs. And as one frustrated commuter on ArabainBusiness.com commented: “The car has its place, but being stuck in gridlocked urban traffic isn't it.”

Anderson also contends that the increased mobility provided by an integrated public transport system will have far reaching benefits in a number of fields. “Trips that were previously repressed due to time and cost restraints will now open up. In doing so the network will deliver liveability and productivity will also rise. People will no longer miss meetings due to traffic and they'll arrive at work in a better state of mind as journey times fall.”

It's not just Dubai that is looking to benefit. In the UAE alone, both Sharjah and Abu Dhabi have plans to implement metro systems, while a 25km long electric sky train system has been approved for the Saudi Arabian capital Riyadh. A new metro system in Mecca is scheduled to be up and running in time for the Hajj pilgrimage in November 2010.

With Dubai's metro system providing a lead, the region is looking more seriously at ways of improving its creaking, and often non-existent, public transport infrastructure. And if there are any nay-sayers doubting its effect, Dubai's Landmark properties are already noticing a price rise in properties located close to a station. If that doesn't stimulate interest, nothing will.

Integration is the key

The principal lesson from the new Metro system in Dubai is that it's nothing without a proper network of support

The most successful public transport systems in the world – London, New York, Paris – rely on more than the provision of a single solution. The key word is “integrated”, and in a city like Dubai, a vast, linear metropolis built along on sweeping highways, stations that are situated a long way from where people either live or work will not solve any problems. Therefore two plans are going into effect to bolster the network:

→ Bus network

The Dubai Metro Red Line will be supported by 518 air-conditioned buses operating on “counter routes” running parallel to the train lines, designed to ferry commuters to the rail links.

→ Multi-purpose tickets

Commuters can use their tickets on Metro trains and buses, and plans under discussion will enable Metro users to use their travel cards in local taxis to further enable Dubai inhabitants to access the system cost-effectively.

Amman's Best Friend?

With Dubai unveiling its gleaming new Metro system, Jordan's capital will be seeing what lessons can be learned in the coming months



The man responsible for designing and implementing the plan, Ayman Smadi, Director of Transport and Traffic Management at the Greater Amman Municipality, is eyeing events in Dubai with some interest.

As part of the wide-ranging Amman Master Plan for urban development, launched in 2006 amid considerable fanfare by Mayor Omar Maani, the Jordanian capital is set to welcome a completely integrated public transport system by 2025. In a city whose roads are completely dominated by the private car and increasing congestion, and whose urban zones are ill-defined and diffused, the introduction of a light railway and supporting bus network is seen as a vital step in creating a more liveable, modern city.

Explorer: What lessons can Dubai's Metro provide Amman, a very different city?
AS: There are key similarities; in the last ten years, Amman's population has also grown and land prices increased, leading to an urban sprawl as people have moved further and further away from the traditional commercial centres. This means they rely more on the private car to get them around. Although Amman's road network is good, congestion has started to be a problem at rush hours. But in comparison to Dubai, Amman as a city is much easier to get around, with quick travel times between key points and minimal congestion. Also, we're a radial city as opposed to a linear one.

Explorer: What, then, are the main components of Amman's transport plan?
AS: It aggressively aims to boost public transport use from the current level of 14 per cent of journeys (on buses and service cabs, not yellow taxis) to 40 per cent by 2025. It has three main phases: Firstly, it's improving services for current users so they aren't tempted to switch to the car as their personal income levels rise. Secondly, it's about developing capacity, and that means the creation of three rapid, high-capacity rail links that will criss-cross Downtown Amman along the main arteries like Wadi Abdoun, Wadi Saqra and also to the south-east through Raghadan. The rail link will be supported by two tiers of bus services, one to provide access to the metro stations and another that will supplement the new system. Thirdly, it's about managing transport policy to constrain car use and promote the public services.

Explorer: Do you see that Amman is a city whose socio-economic blend is more suited to public transport use than the Gulf?
AS: We do. Amman already has a strong user base, with many using buses and services out of choice. Plus there is an elastic group who use it when they need to – for instance when gas prices climbed in the summer of 2008. Our job is to provide better services for the first group and restore some dignity to public transport for the latter.

Explorer: What will be the key social benefits of the system?
AS: We plan development nodes around the stations with mixed-use complexes for leisure and retail. This will also have a sociological effect of creating hubs of activity that can be reached without a car – a problem that Amman, without a real commercial centre, has never really overcome – and providing the opportunity for Ammanis to walk.



Corbis



② Logistics and lifestyle

Logistics is an essential component of contemporary lifestyles; *The Explorer* looks at the key drivers that impact the consumer



HITTING THE ROAD

Going on tour is the biggest project a band will manage – especially when they’re as big as U2 and the Rolling Stones. John Corr has made a career of getting the world’s best acts from A to B. **Words by: Patrick Mascall**

Logistics and rock’n’roll. Not the commonest of bedfellows. But behind every axe-wielding guitar hero and sultry soul diva is a collective of individuals charged with delivering their equipment – plus all necessary bells and whistles – to a venue near you. Wherever that may be. And while musicians are wonderful at expressing emotions, practicalities are rarely their strong suit; without weeks of meticulous planning by companies such as London’s Sound Moves, most of the musical icons we have idolised through the years would barely have got beyond their garden gate, let alone to the other side of the world.

Given the gargantuan scale of modern touring at the very top level – the Rolling Stones brought in

over \$500 million on 2005’s A Bigger Bang Tour, and U2’s Vertigo Tour grossed \$260 million in the same year – there is a lot at stake for everyone involved. Since they were established in 1995, Sound Moves have assembled some of the industry’s most experienced and respected logistics experts in their 13 international offices. They provide bespoke solutions to meet the unique demands of live music, from one-off shows to 18 month global-straddling tours, and have worked with not just U2 and the Rolling Stones, but AC/DC, Radiohead, David Bowie and Pink. The Explorer asked Sound Moves’ John Corr about the demands of music on the road.

Explorer: What are the primary logistical elements of a major tour?

John Corr: There are two. They run through everything we do and they also conflict: the first is time, the second is money. The more time we have to do things, the cheaper the solution will be. On the bigger tours, about a year before there is even any public awareness that the act is going out on the road, we'll liaise with the various people responsible for putting the production together. This is the stage when you look at potential itineraries, routings and the like. How quickly we can move things between points A and B determines which shows are booked into the itinerary, in what order, and how many sets of equipment are needed to actually allow the tour to function. When tours are being put together, the organisers face the pressures of having upwards of 140, 150 people on the payroll everyday, all of whom need to be fed, watered and accommodated. So if we're taking a lot of time to move the equipment between locations, there is a larger overhead to cover for the organisers.

Explorer: Tour revenues for the big acts are vast, but are the costs of actually moving these elaborate productions around the planet underestimated?

JC: What has changed is that in the past, touring was a means of selling records. Now it's a huge, and increasingly important, income stream in its own right – especially when you consider the spin-offs like merchandising, and the impact on digital downloading. Each tour is akin to creating a new company from scratch, running it for a period of time, and then shutting it down with a black figure rather than a red one at the bottom. The organisers take on a large collection of staff, appoint a range of suppliers to provide equipment and resources, and they'll change their business premises two or three times a week for 18 months across the planet before winding the whole thing down, laying everyone off and returning all the equipment.

Explorer: Is multiple sets of equipment common in modern touring?

JC: Yes, it is. Certain parts of a tour's structure will be duplicated to allow multiple set-ups. With the big outdoor stadium shows, there is usually only one version of the face of the stage – the key visual appearance that the paying public see – as that is a very expensive component. That's called the universal



production, as it goes everywhere. But the actual structure that lies underneath it – the stage that supports the façade – will exist in multiple forms that leapfrog each other around the world. For tours like U2, there may be five or six sets of substructure around the world at any one time. While the band is performing on a stage in one city, one section of the crew will still be dismantling the substructure in the previous city, and another part of the team will be building it in the next one. The logistics of moving the substructure, particularly in Europe where you can drive between cities, aren't too difficult, but it's moving the universal production, the main backline package of sound and instruments plus all the video screens, that gets more challenging. In the Southern Hemisphere, you're then into chartering cargo aircraft.

Explorer: Is it a common scenario to see major acts charter entire cargo planes?

JC: Most of the entertainment freight travels in the holds of passenger planes, but there is only so much room beneath the floor of a 747. Some of the larger items of equipment have to go on dedicated cargo aircraft, but as there are fewer scheduled cargo services, especially not between the range of cities tours need to cover, you inevitably move into chartering your own aircraft.

“Celine Dion cancelled some shows. But she was very keen not to let her fans down and wanted to reschedule them. This meant she played Fort Lauderdale, Florida, on a Friday, Costa Rica on the Saturday, and then Tulsa, Oklahoma, on the Monday”

Explorer: If a 747 isn't big enough, what kind of scale are we talking?

JC: On the Vertigo Tour in 2005, U2 had three 747s just for cargo. I don't yet know the plans for their new 360 Tour, but I imagine they'll need a similar solution once again because they can't physically wait for their huge freight package to be moved by sea. But that is all part of the logistical planning; the organisers will give us an idea of the weight and volume of the equipment they need to move and the time frames within which they need to move it, and we'll give them a range of options and budgets.

Explorer: How do you work out the order to assemble these giant mobile jigsaws? There's no point having your video screens arrive a day before the stage...

JC: Absolutely, and unfortunately you tend to break a show down in the reverse order of how you'd want to put it back together at the next one – so the first stuff you take out of the current venue is generally the last stuff to go into the next one. This comes down to the specialist trucking companies, in which as many as 80 trucks answer to a lead truck driver. In Europe, that means managing the very strict laws over mandatory driving breaks – and also to bus drivers carrying the crews. There's no point having the equipment turn up without the manpower to unload and erect it.

Explorer: Are you actually out on the road with the artists or do you work remotely?

JC: A bit of both. We appoint a tour principal to manage the tour globally, and for the whole of last year I worked on Celine Dion's world tour, from supervising the first loads in Canada in January 2008, right through to the end of the tour in February this year. We have a network of offices globally, too, so we can use them where we need to, and good local agents. But if we have a particularly critical move taking place, we'll be there in person; Celine Dion had an illness in November and cancelled shows. But she was very keen not to let her fans down and wanted to reschedule them, which meant fitting them in and around existing shows in Costa Rica and Montreal. This meant she played Fort Lauderdale, Florida on a Friday, Costa Rica on the Saturday, and then Tulsa, Oklahoma on the Monday. So we chartered a moderate-sized air freighter to get the equipment around – and I was there the whole time.

Explorer: Are rescheduled shows the ultimate spanner in the works for you?

JC: It's just what happens. You have to be ready to react to the unexpected. We had a situation around Easter time with Oasis in the Far East where the Chinese government refused them permission to play. We had to do all we could to protect the rest of the itinerary, which meant a lot of rescheduling of things like air cargo and passenger bookings, customs documentation, trucking, warehousing... But we got there in the end. Or a band will get offered a private party for a large fee, so you have to fit in what is essentially another show. If commercial opportunities arise, then they get done.



EPA / Getty Images

Explorer: But even with the greatest planning, with so many parts to this huge interdependent chain, things must inevitably go wrong...

JC: Things happen, but our policy is to share information on problems as soon as we have it. Working in isolation is pointless. Provided everyone works together, there aren't too many situations where you can't get at least something to work. One of our competitors had a charter plane land at an airstrip only to find there was no fuel and the show had to take place a day late. But we have jumped on an aircraft and hand carried a spare part to a show. If that's the quickest way of solving a problem, that's what we'll do.

Explorer: How big a problem is individual customs laws? And what about the now all-consuming security issue? Is that all under your jurisdiction?

JC: That's one of our key areas of expertise – but customs worldwide is fairly well understood and manageable. In the major markets, customs officers know what to expect and we know what to expect at customs. There is a document called an ATA Carnet, which is basically a passport used in about 75 per cent of the world for equipment. It's a voucher system in which customs confirm what's coming in, and they match it to another on departure, so there's no tax and duty liability. Security is a big one, especially given that most of what we move goes on scheduled aircraft. That means delivering freight to the airline at an agreed time prior to departure, and security screening extends that period. In London, we have our own ex-ray scanning machine and we are approved by the UK Government to screen cargo for carriage on passenger planes.

Explorer: What has been the most challenging tour you've been involved with?

JC: I'd say David Bowie's Reality Tour in 2004, because he was splitting his equipment in multiple directions to play different kinds of shows in Asia. He also cancelled a few shows, so we were juggling sub-sets of equipment, and that all had to get back to the US to pick up the rearranged dates.

Explorer: What have you got coming up?

JC: We're involved with U2's 360 Tour. They use cutting-edge technology and new ideas, which always raises concerns as it isn't tried and tested for its ability to withstand the rigours of heavy touring.

Explorer: So, three jumbos again?

JC: I don't know yet. Last year, REM's production manager raised the question of whether tours have become too big and complex. People are complaining about the cost of tickets because they don't actually understand the high production values. But it's the sheer amount of people and equipment needed to put on a show of the kind people have come to expect – and the need to move it constantly – that makes concerts expensive. At some stage someone has got to say “Stop!” But it'll be a very brave act to cut it right back to basics!

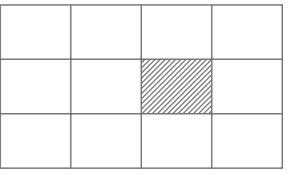


Bring on “The Claw!”

U2 don't know the meaning of the word “minimal”

U2's 360 Tour, which kicked off in Barcelona in June, will involve a revolutionary four-legged structure supporting a revolving stage that will allow the band to play shows in the round. Long-time U2 Show Director Willie Williams got the idea

for the set – known as “the Claw” – from the futuristic, Disney-style Theme Building at LAX. At 50 metres in height, the Claw is twice as high as the previous largest stadium stage set, from the Rolling Stones' A Bigger Bang Tour. Each of the Claw's four sides will have its own full-size sound system – each powerful enough for an entire arena. Assembled in pieces around the world, the set will be made of solid steel and 120 trucks will cart it from show to show.



In Mumbai, some 5,000 lunchbox carriers deliver home-cooked food to more than **200,000 people every single day** – becoming a major study for business schools and even receiving invitations to address Microsoft’s upper management

Words by: Subhash Sharma

A MASTERCLASS IN LOGISTICS AND EFFICIENCY

Just like any other normal working day in Mumbai, as the 10.45am Churchgate train slows to a halt at Vile Parle station, Baban Kadam and his four colleagues get into military formation. They switch into high alert. As they did the previous day, and the day before that, they will get about 15 seconds to load four crates holding about 100 dabbas, or tiffin boxes, into the luggage compartment before the train blasts off towards the next station on the suburban railway network. With clockwork precision, they disembark, grab the crates, load and stack them alongside others already in the compartment which were brought on by their fellow dabbawallas (tiffin box delivery men). They then all head towards the final station on the western corridor of the Mumbai local train network.

Once the train sets off again, the dabbawallas switch into “easy mode”, they have a little time for relaxation, gossip and friendly banter before they reach their destination in 40 minutes, whereupon there will be more frenzied activity to unload the

crates again. This chitchat keeps up their energy and spirits, as it can’t be allowed to ebb during the frantic course of the day.

There’s also new business to amass. Amid the constant loading and unloading of dabba crates at the stations, Baban Kadam takes a call on his mobile phone from a prospective client who wants to use his services. Such is the trustworthiness of the dabbawallas that the deal can be worked out over the phone, and with all details in-hand, Baban Kadam can direct his subordinate to collect the dabba the next morning from the new client – and so will begin another long business relationship of mutual trust and, hopefully, satisfaction.

Then, back on alert as the train nears Churchgate, Baban Kadam and his colleagues fan out to assemble everything and divide up their respective crates. The dabbas have precise colour markings and codes carefully marked on them that indicate their station of origin, destination station, building name and floor for the delivery. It has become a



crucial part of the management of their operation. The exchanges and sorting happen in what looks like a blur to the passerby or commuter standing on the platform waiting for the train. The transfers are all done with spot-on precision and consistent professionalism, but made to look like an effortless chore, as if the dabbawallas have long been programmed to perform like machines. Indeed, such is their organisational efficiency, they are regularly invited to give lectures at prestigious Business Administration colleges, conferences and corporate meetings, where lap-top-wielding MBA graduates learn how they perform at this level with this kind of meticulous planning, commitment to their work and incredible teamwork.

Baban Kadam and his colleagues are part of a 120-year-old illustrious institution known as the Nutan Mumbai Tiffin Box Suppliers Charitable Trust (NMTBSCT), an unparalleled, disciplined and doughty army, popularly known as the “Dabbawallas of Mumbai”. It was way back in 1890 that an

Indian entrepreneur named Mahadeo Havaji Bacche invented the tiffin distribution business, meeting the culinary needs of Mumbai’s rapidly expanding working population, both British and Indian. His idea caught on and grew in leaps and bounds into the present-day body.

Today, the NMTBSCT is comprised of around 5,000 semi-literate working men, but are part of probably the world’s most ingenious meal distribution system. Their system is so accurate and precise that the American business magazine *Forbes* awarded them a “6 Sigma performance rating”, a term used in quality assurance if the percentage of correctness is 99.9999999. Or, in this context, for every six million tiffins delivered, only one fails to arrive. This error rate means in effect that a single tiffin might – the emphasis is on the “might” – go astray once every two months. The rating is the same as that given to the top blue chip companies around the world – not bad considering most dabbawallas are, at best, semi-literate.



“Without fail, every single day for the last 25 years, I’ve had hot homemade food, without a single lapse”

way home. “This is the city of innovation, and this is just an example. I’ve heard there have been instances where clients have received chequebooks, and even cash, neatly concealed in the dabbas sent by a family member from home. The dabbawallas never open a customer’s lunchbox, it’s one of their many principles – as is always wearing their distinct ‘Gandhi caps’,” Jignesh Shah says.

Lessons in logistics

The Dabbawallas’ logistics and supply management processes that deliver this error-free operation have drawn global attention, from the likes of the Prince Charles to Richard Branson, and from IIMs – the biggest management school in India – to various other business schools and offices as far away as Nebraska in the United States. All have invited the semi-literate dabbawallas to deliver speeches to share their mantras on time management and supply-chain management.

Mumbai’s annual monsoon also fails to interrupt the work. And the unassailable spirit of these men in white caps has seen them featured in the *Guinness Book of World Records*, and on the TV show *Ripley’s Believe-it-or-Not*. But to the dabbawallas it is all in a day’s work.

“We are very proud,” says Raghunath Medghe, president of NMTBSCT, “that we have not been on strike for the last 116 years, and this enamoured Prince Charles so much that we were the only Indians to be personally invited to the royal wedding of Prince Charles and Camilla, which is indeed an honour for us, and recognition of our work ethic.”

He explains further: “Our lifeline is the local train service in Mumbai. There’s a train every four minutes. Without them we would not be able to do our business. On average, every tiffin box changes hands four times and travels 60-70km on its journey to its eventual destination. In our organisation, nobody is an employer and no one is an employee. Each dabbawala considers himself a shareholder and entrepreneur. The range of customers includes students, entrepreneurs, managers, and especially bank staff and mill workers. Customers tend to be middle-class citizens who, for reasons of economy, hygiene, caste and dietary restrictions – or simply because they prefer wholesome food from their own kitchen – rely on us to deliver a midday meal. New customers are generally acquired through referrals. Now you can SMS or even book the services of a dabbawalla online.

“Every dabbawalla contributes Rs15 per month to the association. This is used to benefit the community, for loans or hiring marriage halls at concession rates. All problems are usually resolved by association officials, whose rulings are binding. Meetings are held on the 15th of every month. At these meetings, particular emphasis is paid to customer service. If a tiffin is lost or stolen, an investigation is promptly instituted. Customers may deduct costs from any dabbawalla found guilty of such a charge,” he adds matter-of-factly.

Delivering happiness

The core mantras of the dabawallas are: work is worship, the customer is God, time is money, and unity is power. They use zero fuel, zero modern technology, have zero investment costs, zero disputes, and achieve 100 per cent customer satisfaction. This has led them to receiving accolades that include the 6 Sigma Certificate, and ISO 9001 certification from by the Joint Accreditation System Of Australia & New Zealand (JASANZ).

Recently, to take advantage of its enormous network, Mumbai’s telecom major, Airtel, linked up with the dabbawalla association to deliver prepaid phone cards, new connections

The job of the dabbawallas involves collecting home-cooked food from the client’s house every morning at around 9am. It is delivered to their office in time for lunch, then the empty lunchboxes are collected and returned to the house at around 4pm. About 200,000 tiffin boxes travel this way to Mumbaikers in their offices every day and this service costs the client between Rs.350 and 500 (\$8 to \$10) per month. The total monthly earnings are divided equally among all the dabbawallas, and each gets about Rs.5000 (\$100) per month as his share.

These multi-layered boxes loaded on crates that are hauled atop a pushing cart, using either a cycle or dabbawalla’s sturdy running legs as its driving force. Once all the packed dabbas have been collected they head to the nearest railway station, to be sorted by destination and loaded onto the constantly arriving local trains.

At about lunch time, between telephone calls, sipping a hot cup of tea in his air-conditioned office, 60-year-old Jignesh Shah recounts why he has been a loyal customer of the dabbawallas for the past 25 years. In his younger days, having spent many months dining at nearby eateries and in hotels, his health started to fail and he was prescribed good, home-cooked food. He realised early on that if he wanted to enjoy this at his office he needed the services of the dabbawallas.

“The delivery charge is very reasonable,” he says. “Besides, I save on medical bills and having food from home is hygienic, healthy and certainly cheaper in the long run. And without fail, every single day for the last 25 years, I’ve had hot homemade food, without a single lapse as far as I can remember.”

Just as he is in the middle of his tale, the doorbell rings and there is the dabba at his doorstep. The delivering dabbawalla has already disappeared in a flash, without even waiting for the door to open – he has another 19 boxes to deliver to hungry but loyal customers.

Jignesh Shah opens the dabba carefully, and with a soft smile he polishes off the just-delivered meal. Packed in the dabba he comes across a brief scribbled note from his wife, reminding him of some important groceries to collect on his

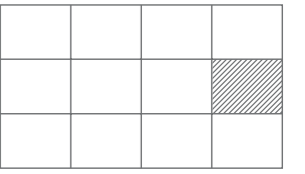


and bundled handsets. “This is a one-of-a-kind initiative we tapped for deeper penetration into the market,” said Airtel CEO Manu Talwar. “The dabbawallas were chosen as they are known for their honest, down-to-earth and gentlemanly nature.”

But delivering food to their customers is the dabbawallas’ only target, and it remains undisturbed by external factors. The success of the system is the envy of any modern manager. When asked about the secret of their success, Raghunath Medghe answers: “Consistency and reliability are the hallmarks of our service. What we promise, we deliver. We enjoy our work because we make our customers happy. So in a way it can be said we are in the business of delivering happiness. The joy on the face of a hungry customer when he receives his dabba on time, every time, is something that has to be seen to be believed.”

Then, as if to validate his point, a dabbawalla emerges with Raghunath Medghe’s own packed dabba, freshly sent from home. He accepts with the broadest grin.

“Consistency and reliability are the hallmarks of our service. What we promise, we deliver. We enjoy our work because we make our customers happy – it can be said we are in the business of delivering happiness”



strike it rich

In recent decades, entrepreneurship in the Arab World has been dented by the **easy money from natural resources**. But there are signs important changes have already started



Gallo Image / Getty Images / AFP

“Rather than being viewed as an economic liability to their societies, Arab youth should be looked upon as potential agents of positive change”



“The entrepreneurial spirit would, on the face of it, almost seem endemic in the Arab World, a place that, in popular and perhaps slightly Orientalist imagination, is teeming with souqs and bazaars, traders and merchants, endless haggling and healthy profits. The reality in the 21st Century is somewhat different, though, especially in the post-oil economies of the Gulf, where wealth can owe as much to geographical good fortune as local inspiration. In other parts of the Middle East, land values and low levels of capital gains tax have created a new generation of independently wealthy citizens able to sustain lifestyles well beyond the means of their salaried compatriots. As a result, the region’s asset funds and stock markets are dependent on energy prices and real estate bubbles – with the magic words of innovation and entrepreneurship taking a backseat to raw commodity trading.

“People have become very used to making easy money,” said Peter Anderson, chief financial officer for Parker & Boyd, a venture capital company specialising in innovative technology companies and with a growing presence in the Arab World, before hinting at more positive signs. “While a cultural aversion to risk and failure had limited the number of venture capital companies in the past, we believe things have changed among younger generations.”

That latter view is reflected in a wide-ranging poll conducted by Gallup in their *Silatech Index: Voices of Young Arabs* report, which finds an overwhelming majority of young people aged between 15 and 29 believing that entrepreneurs create jobs. Moreover, an average of one in four across the region say they will start their own business at some point – more than five times the level expressed by Americans of the same age. “Rather than being viewed as an economic liability to their societies and their families, Arab youth should be looked upon as potential agents of positive change,” the reports authors, Adam Sitte and Magali Rheault, state. “Economies that successfully promote young people’s entrepreneurial ambitions could find themselves supporting sustained economic growth for years to come.”

Unfortunately, though, institutional shortcomings are still acting as impediments. While expenditures on education are high in comparison with Asia and Latin America, drop-out rates are worryingly high, as is the lack of key skills among university graduates – McKinsey consultants stating that as much as 57 per cent of new graduates lacked practical skills for the job market. Underlining what is a disconnect between academia and the workplace, the most able graduates, they add, are still tending to leave the region, or perhaps settling for secure jobs in the public sector which under-utilises their skills.

Therefore, despite large numbers of NGOs springing up to try and foster entrepreneurship, like Jordan’s Queen Rania National Entrepreneurship Competition, the best hopes for the region seem to rest on private-sector success stories. The best example was set by the recent purchase by Yahoo of Arabic internet portal Maktoob – a company that was established over a decade ago by Jordanian entrepreneurs Samih Toukan and Hussam Khoury.

Such stories give hope that the Middle East can experience its own Microsoft moments; where pioneers with little more than a good idea and an abundance of commitment can establish powerhouse companies worth millions of dollars. No matter how much help centralised authority can offer, or how many funds from oil-rich emirates are granted, case studies of young locals achieving their dreams ought to provide an important spur to similar success stories in the future.

net gains

Why the Maktoob sale to Yahoo! is so important for the future of Middle East entrepreneurialism

Words by: Fadi Ghandour

A version of this article first appeared in *Maktoob Business*



When it comes to its actual impact on the lives of people in the Middle East, and certainly the wider world, what it means is perhaps more important than what it is. When Yahoo!, the global Internet portal and search engine, acquired Maktoob, the largest Arabic portal, the 16.5 million of the latter’s Middle Eastern users didn’t exactly feel a seismic shift in their experience – but it did immediately thrust two entrepreneurs from the Arab World into the spotlight, underlining the importance of the region’s online community. The Arab World was, as a result of the reported \$85 million deal, instantly and compellingly stamped on the global internet map.

It is the ultimate success story in a region long used to failure. For the Middle East’s younger generations, it is a wonderful example of how, through a combination of boundless creativity and down-to-earth business sense, a dream can turn into a brilliant achievement. It will get people to pay attention to this region’s knowledge-based industry, where there is an impressive number of technology entrepreneurs.

For the region’s leaders, it is hopefully a timely, and possibly painful reminder of the distance between their priorities and the ambitions of an increasingly wired younger generation who are eager to move away from a state-driven, oil-dominated future. For our wealthy Arab investors, it is a wakeup call that true value lies in our youth rather than in real estate, and that talent is closer to home than they could have ever imagined.

For the Arab World, it is proof that money may count for something but, in the final analysis, an education, smarts and determination count for much more, because the two

entrepreneurial gentlemen who made Maktoob started out in Jordan – their home and, it just so happens, one of our area’s more resource-poor countries – and, even when their company reached way beyond it, never left.

We should, therefore, celebrate the story of Maktoob, and we should hail its founders, Samih Toukan and Hussam Khoury, for being such tenacious entrepreneurs, at once innovative, patient and practical. But before the acquisition becomes yesterday’s news, as an early investor in Maktoob, as a friend of Samih and Hussam’s and, yes, as an occasional mentor to both, I would like to share with you the lessons learned from this experience:

Lesson 1: It is not about vision. It is instead about a tedious process of discovery. It is about a unique product at the right time for the right geography. Maktoob started as a consulting company, then changed to become one of the first (if not the first) Arab website developers, and then moved on to inventing Arabic web email. They saw the niche and they went all the way, building everything around that niche.

Lesson 2: Conserve your cash. There is nothing more important for your survival than cash. Cash burn is not something to be proud of, so burn the least amount possible. That means founders should not take salaries as long as the business cannot afford them. Maktoob lived off bread crumbs for the longest time; they kept developing the business until the first venture investor came.

Lesson 3: Don’t fall for the hype. When Maktoob happened, cash burn was the fashion, but Samih and Hussam kept their eyes on the company, did not become seduced by sexy trends and kept building value. None of their much richer competitors survived the dotcom crash. Maktoob flourished.

Lesson 4: Build your team. This is a no brainer, but few entrepreneurs realise that it is always about your team no matter how good you are. Build the team, retain it, reward it with stock and give it freedom to innovate.

Lesson 5: Mentors are important. So listen to them and seek them out all the time. They will always give you a different perspective, challenge you and keep you on your toes. Dig deep into their knowledge: It is priceless.

Lesson 6: Aim for success not exits. Two decades of building a business is a long time. Samih and Hussam knew the exit will come only with a good brand and a viable business.

Lesson 7: Your shareholding percentage does not matter. What matters is building value for your clients, and the rewards will not be too far behind. The value of your business is what you build, and how much you own is relative to that value. It is about how to get to the exit in dollar terms, not the percentage you own; 50 per cent of \$10 million is half of 10 per cent of \$100 million.

Lesson 8: Partner with your venture and PE capital investors. Set the terms of reference early on to make sure that they understand your business and leave you alone to run it. Abraaj and Tiger understood that, and Samih and Hussam were left to build value. All equity partners made lots of money because they understood this basic rule.

Lesson 9: Split your responsibilities clearly and early. The combination of Samih and Hussam as a team, as friends and as partners is unique. I don’t know anyone that had the ability to split responsibilities the way they did – and with a smile.

Lesson 10: Keep your eye on the ball in negotiations. When talking with someone like Yahoo, don’t get arrogant and keep someone to run the business in case of a no go. When Samih was on the road Hussam kept the engines greased and running.




Photo Essay

The Explorer showcases the best contemporary photography, highlighting our incredible planet.

WAYS AND MEANS

Use of roads is one of the most fundamental facilitators of human activity – whether social, commercial or adversarial. From small tracks used by shepherds to multi-lane highways spanning continents, the road connects people to produce, produce to markets and, above all, communities to communities.



Interesting junction Previous page: “The Big I” in Albuquerque, New Mexico, is one of the most spectacular examples of the mammoth road interconnectors that huge interstates in America require.

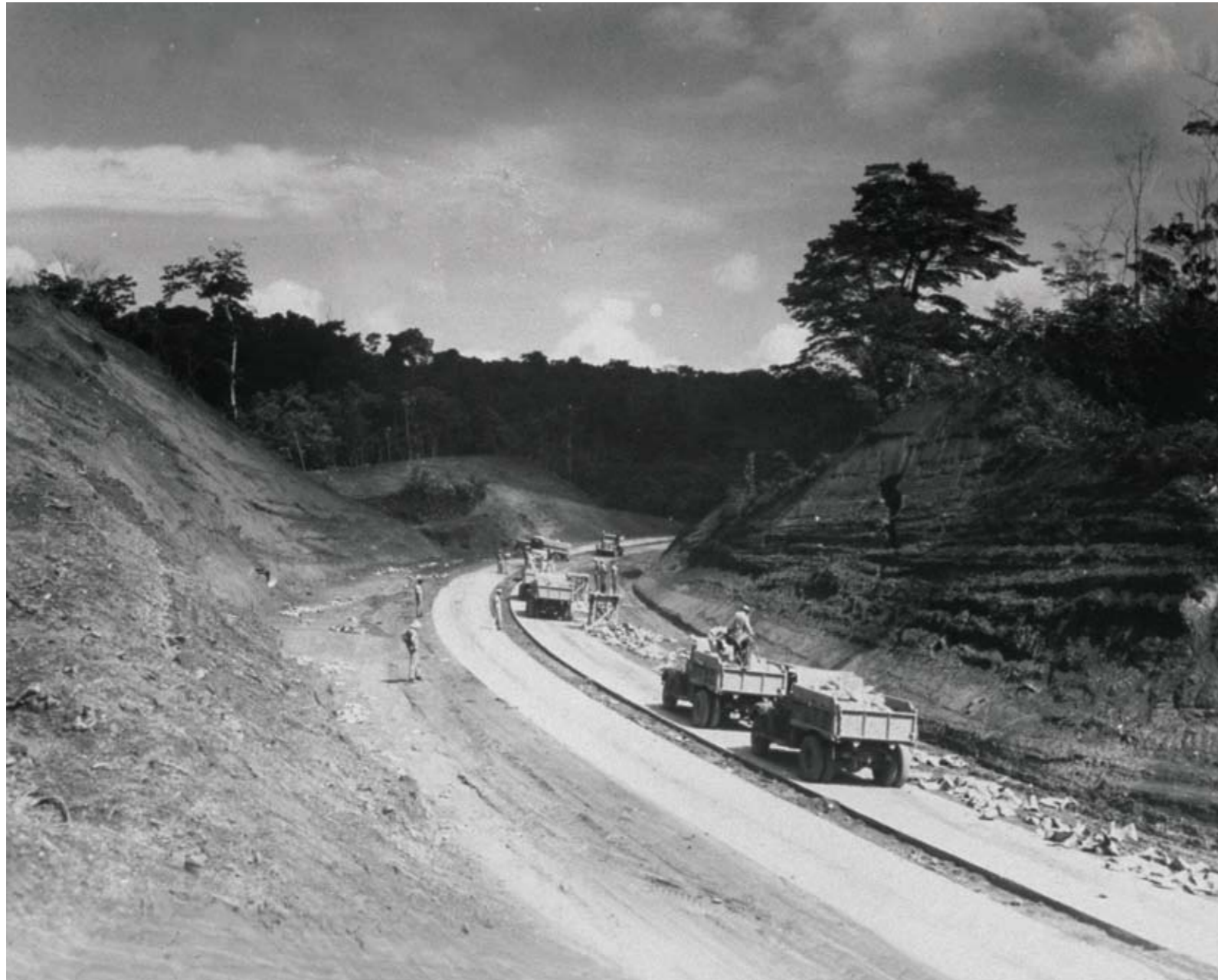


Grapheast / Newscom / AFP / Grapheast / Corbis

Compare and contrast America vs Yemen. Main: A road cut into the spectacular Wadi Do'An, in the Hadramaout province of Yemen. Top left: The iconic Route 66 in California, which became a symbol for the optimism of America's West. Top right: A road connecting the Yemeni cities of Sanaa and Marib. Above: A pencil-straight road through the incredible Monument Valley National Park, Arizona.



Lost highways Left: A road with hairpins galore cuts a circuitous route through the Swiss Alps. This image: A unpaved road skirts the wild coastline of the Socotra Islands in the western edge of the Indian Ocean.



Getty Images

Highway to PROSPERITY

The road out of an economic crisis in the 1930s was literally that – a series of roads and bridges. What lessons from Roosevelt’s public works can we learn today?

Words by: Musa al-Shuqairi

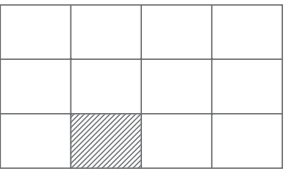


//// The economic crisis that faced the United States of America since late 2008, and inherited by a president promising change and accountability, is not without precedent. And while few pundits in the news media can agree as to the best way to stimulate a recovery, the lessons of the Great Depression of the 1930s – the last great economic disaster to confront the country – have been picked over by both economists and politicians, not least as public ownership and state control are central parts of the recovery policy.

Following the Wall Street Crash of 1929, provoked by a familiar combination of greed, short-termism and, ultimately, unalloyed panic and mass sell-offs, America slipped into a steep decline, with swathes of bankruptcies, massive unemployment and wholesale migrations of rural poor hitting the road to find work. The 32nd president of the United States, Franklin D Roosevelt, took office under this all-enveloping misery. “I pledge you,” he announced, famously, in 1933, “I

3 Logistics in history

The Explorer looks back at how the logistics challenges of the past can offer solutions for the future



pledge myself, to a new deal for the American people.” And after his landslide victory, he made good on his word.

He immediately enacted legislation that aimed to relieve unemployment, reform business practices and recover the economy; collectively, it became known as the “New Deal”. “Our greatest task is to put people back to work,” Roosevelt announced. He used the public purse to fund huge public works projects that hired skilled and unskilled workers through new agencies like the Civilian Conservation Corps (CCC), the Public Works Administration (PWA), the Civil Works Administration (CWA) and the biggest “New Deal” agency: The Works Progress Association (WPA). They were all designed to stimulate the economy by putting wages in people’s pockets – and improve the nation’s infrastructure to further help by building drivers of commerce such as roads and bridges, schools and universities.

“When Franklin Roosevelt was inaugurated, 13 to 15 million people were out of work,” said Nick Taylor, author of a new book called *American-Made: The Enduring Legacy of the WPA*. “Some people got checks. Some people got surplus foodstuffs. But eventually the idea was to provide jobs, to allow people the dignity of work.”

The National Industry Recovery Act was one of the first pieces of legislation in FDR’s efforts, and roads were a principal focus. In 1933, Congress passed a bill that appropriated \$200 million for highway projects, with a quarter to be spent on secondary and feeder roads. The first project was a highway between Salt Lake City, Utah, and Saltair Road opened on August 5th, 1933. The NIRA ended up spending \$3.3 billion for public works projects, including 16,330 miles of new roads in a single year, in its two-year lifespan before it was (incredibly) deemed unconstitutional and abolished.

The WPA thus became the core of the New Deal, adding 570,000 miles of new roads to an impressive portfolio of hospitals, schools and sanitation systems. “The WPA’s role in road projects was a tremendous shot in the arm for the highway construction sector,” says William Kaszynski, the author of *The American Highway: The history and culture of the road in the United States*. “Without the WPA, the interstate highway system would have been postponed for perhaps decades.”

President Roosevelt advocated modern interstate highways to create employment, proposing three east-west and three north-south routes. During the early years of the Great Depression, road maintenance had been neglected by local government because of inadequate funding. “Even in the 1930s, the United States still had a largely 19th Century infrastructure,” adds Nick Taylor. “Rural and secondary roads were for the most part unpaved, and rainy season turned many of them into swamps of mud. The first thrust of the WPA’s road-building programme was improving farm-to-market roads and also building new rural roads and bridges where they were needed.”

The upgrade of local streets included widening, providing additional parking space, the removal of abandoned streetcar tracks, and the replacement of rough cobblestone paving with even-surfaced asphalt. In addition, the WPA was responsible for some of the most iconic intra-city street projects; for example, the Merritt Parkway, which is recognised as the most scenic road in Connecticut with its 64 unique bridges, was enabled by WPA grant in excess of \$20 million dollars.

The road network also boosted the westward drift as farmers and labourers in the infamous Dust Bowl of the central states sought new opportunities in California. In turn, the WPA and PWA developed and expanded the local road network, including California State Route 1 which runs throughout the Pacific Oceans coastline across the state.

Of course, much like today and the free-market fundamentalists, the plans were not without controversy – not least due to their impact on tax and the national debt. “The



AFP

“The WPA’s role in road projects was a tremendous shot in the arm for the highway construction sector. Without it, the interstate highway system would have been postponed for perhaps decades”

New Deal tripled federal taxes between 1933 and 1940,” says Jim Powell author of *FDR’s Folly: How Roosevelt and His New Deal Prolonged the Great Depression*, one of the many revisionist New Deal critics who consider such state measures either fascist or communist, and at the very least unconstitutional. Nor were all the “alphabet soup” projects successful. In addition to the short-lived NIRA, the CWA survived less than six months, yet still spent over \$200 million a month.

That said, few argue that government spending ended the Great Depression – whether via the New Deal or the massive central expenditure of World War II. And there might be lessons for today’s Democratic president. “[Congress] should invest in the more than 3,000 ready-to-go highway projects that could be under contract within the next couple of months,” said John Horsley, executive director of the American Association of State Highway and Transportation Officials, shortly before the 2008 presidential elections. “Funding these ready to go projects offers Congress a tremendous opportunity to put Americans to work and help cash-strapped states repair and replace our crumbling infrastructure.”

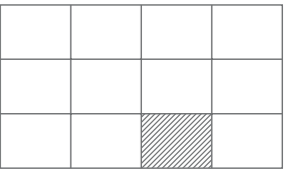
While Obama has called for the creation of a National Infrastructure Reinvestment Bank, whether he will journey the road traveled by FDR remains to be seen. But putting wages in the pockets of the many must have as much validity as shoring up the errors of the few.

SWIMMING AGAINST THE TIDE



3 Natural World

The Explorer takes a look at nature's answers to the challenges of logistics – whether moving from place to place, understanding location or refining communication.



The bluefin tuna is one of the largest fish in the planet's oceans, and they continue to astound scientists with their annual migration

Over 1,000 fish is, by any scientific benchmark, a healthy study sample. And by using a combination of electronic tagging, GPS positioning technology, the same horizon-and-stars techniques used by 17th Century mariners, plus nearly ten years of research, the extraordinary migrations of the bluefin tuna across prodigious distances in the Atlantic Ocean and the Mediterranean Sea have now been tracked and recorded.

The study, undertaken by the Tuna Research and Conservation Center in Pacific Grove, California, with Stanford University, has demonstrated that fish not only commute vast distances, they are adept

at using tried and trusted routes deep in the ocean – unhindered by climatic changes or pressure.

Bluefin tuna (*Thunnus thynnus*) are impressive creatures by any standard; mature adults can reach 3 metres in length and weigh a staggering 800kg, and their swimming power is generated from banks of muscles that can propel them from one side of the Atlantic Ocean to another in less than three weeks. Indeed, the muscle mass also means they are highly prized by sushi chefs, and when one bluefin was sold in Japan for \$173,000, their commercial value led to vast overfishing – and the reason for the ongoing study.

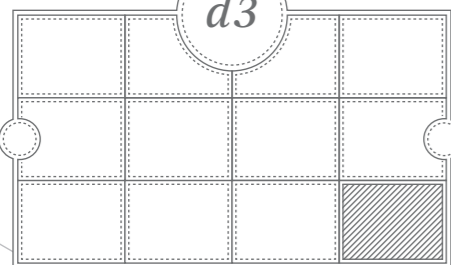
It began in 1997 in New England, Canada, with the goal of determining “the long-term movements, origins and behaviour of bluefin tuna schools found on the New England shelf in summer and fall”, and focused on spawning-size fish.

Gulf of Maine bluefin use the exact same route home – entering their waters from the continental America slope through the Straits of Florida

The results were startling. Firstly, “known” spawning grounds in the Gulf of Mexico and the Mediterranean failed to report any of the tagged fish, leading to the conclusion that there is another spawning site of which marine scientists were previously unaware. Further study revealed that bluefin tuna from entirely different schools – the Western Atlantic and the Eastern Atlantic and Mediterranean – commingle in the summer months in the Central-North Atlantic. They commute from their homes, mix with other fish from different schools, and then return; annually in the case of Gulf of Maine bluefins, but sometimes only after three years of pan-oceanic migration for those from the Mediterranean. Once eastern bluefin tuna spawn, moreover, they appear to return east and remain there without the same ceaseless trans-Atlantic foraging as their western cousins.

The tagging also showed that fish use tried and trusted routes. Gulf of Maine bluefins, for instance, use the exact same route home, entering their waters from the continental America slope through the Straits of Florida – and diving to depths of over a kilometre, coping with vast temperature and pressure variations. That said, these “roads” out are much broader than those coming back. In 2000, two tagged fish released from the same point had both headed south from Maine, both crossed the Gulf Stream, but within three months were more than 5,000 kilometres apart!

Science has demonstrated the mass migration capabilities of bluefin tuna, and their use of undersea routes to spawn and forage thousands of miles from home. And now that we know where they move, and when, policies can be developed to ensure they traverse the Atlantic for generations to come.



The Explorer will chronicle the expeditions of a grand explorer in every issue. The achievements of these courageous pioneers brought major developments, from opening new trade routes and paving the way to the colonization of uncharted lands, to grandiose scientific discoveries and changing human history.

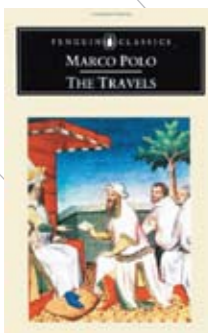
Famous EXPLORERS

Marco Polo

c. September 15, 1254 – c. January 9, 1324



AFP



The Travels of Marco Polo

Author: Marco Polo

Edited by: Peter Harris

Introduction: Colin Thubron

Published by:

Everyman's Library

Pages: 472

“Here begins the introduction of this book which is called *The Description of the World*. Lords, emperors, and kings, dukes, and marquesses, counts, knights, and burgesses, and all people who wish to know the different generations of men and the diversities of the different regions of the world, then take this book and have it read and here you will find all the greatest marvels and the great diversities...”

So begins Marco Polo's book, *The Description of the World* – better known as *The Travels of Marco Polo* – which covers his travels along the Silk Road. It told of the trials that he, his father and uncle had to overcome to reach China, and became an instant success – some achievement at a time when the invention of the European printing press was still two hundred years away. Today, *The Description of the World* has become the world's favourite travelogue, a source of inspiration for all would-be travellers.

Marco's love of exploration was perhaps inevitable. His father and uncle, partners in a trading operation when Venice was the world leader in foreign commerce, had left their hometown in 1264 to look for business opportunities in the Far East. They set off on their first voyage when Marco was only 6, returning nine years later with a letter from Emperor Kublai Khan, which asked the Roman Catholic Church to send him 100 learned men to teach his people about Christianity and Western science.

In 1271, the Polo brothers made the journey back to China – without the requested “learned men”, but with the 17-year-old Marco. The three Polos passed through Armenia, Persia, and Afghanistan, over the Pamirs, and all along the Silk Road to Kublai Khan's China. Marco was evidently an excellent storyteller, a

“No other man, Christian or Saracen, Mongol or pagan, has explored so much of the world as Messer Marco”

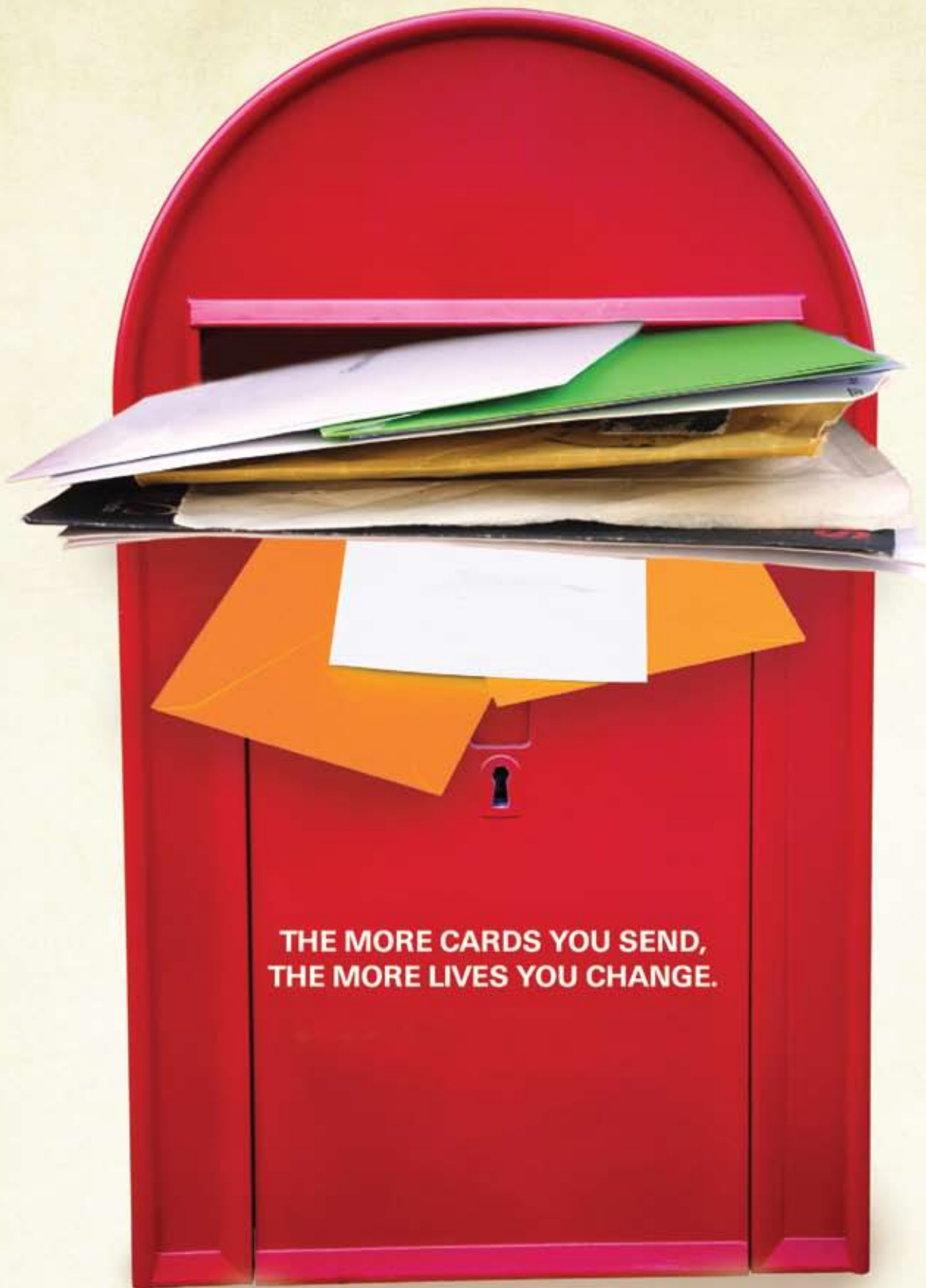
characteristic that led Kublai to keep his Venetian guests for more than 16 years in his court. With the approval of the Khan, the Polos began widespread trading ventures within his empire, and while on these business trips, Marco demonstrated his ability to relate what he saw in clear, accessible terms. The younger Polo's reports from the heart of China, which formed the basis of his account, contained information on local customs, business conditions, and events, which Kublai used to keep informed of developments within his empire.

His attention to detail helped make *The Description of The World* the literary sensation it became. Marco was by no means the first European to reach China, but thanks to his writing, his trip was the first to be widely known – and certainly the best-documented. The trip would show Europeans the economic and cultural importance of the Silk Road, and his description of the Far East and its riches even inspired Christopher Columbus' decision to try to reach the lands by a western route – a journey that subsequently altered the course of Western civilisation.

Marco Polo's achievement, though, should be considered on a par with even that feat. And it is perhaps best summed up by the last words from his book: “I believe it was God's will that we should come back so that men might know the things that are in the world, since, as we have said in the first chapter of this book, no other man, Christian or Saracen, Mongol or pagan, has explored so much of the world as Messer Marco, son of Messer Niccolo Polo, great and noble citizen of the city of Venice.”

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