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SPECIAL POINTS OF INTEREST

- **ARE WE DOING A GOOD JOB FOR YOU?** If the answer is yes, consider introducing us to a customer or supplier. If they go with the Outsource team you win, too. Ask us about our residuals program.
- **DO YOU SHIP WITH US SOME OF THE TIME?** Become a Program Customer and we will guarantee savings of 10%.

DROUGHT, EL NIÑO AND THE PANAMA CANAL

The Panama Canal, which recently celebrated its centenary, sees more than 300m tons of goods per year shipping through its lanes between the Atlantic and Pacific Oceans. With the new, deeper third set of locks on schedule to finish next year and able to accommodate the post-Panamax ships, that number will only increase.

But the canal faces a threat that could potentially keep it from functioning reliably in years to come. An estimated 52m gallons of water—think of roughly the amount of water found in 82 Olympic-sized swimming pools—is required to move just one ship through the canal, and an average of 34 ships go through the canal each day. Extreme weather events, creating periods of flood and drought, threaten the consistent water supply required to keep the canal operational.

The source of the water for the canal comes from Gatun Lake and Alajuela Lake, which are actually reservoirs resulting from damming the Chagres River, the largest river in the Panama Canal’s watershed. A recent dry spell attributed to El Niño has caused the lakes’ water levels to drop significantly—enough so to prompt the head of the canal authority, Jorge Luis Quintano, to announce in August that by early 2015 the worst drought in decades may force limits on the weight of cargo carried by ships on the canal. Rainfall last year was well below normal—the lowest in 100 years—and the lakes failed to fill all the way.

Continued drought conditions have been cause for concern. Aside from the potential effect on the Panama Canal, a central pillar of the country’s economy, the drought has also led to the deaths of cattle, dried up crops, and forced cities to ration electricity due to failing hydroelectric stations and a surge in the use of air-conditioning.

The bad news is that the Intergovernmental Panel on Climate Change predicts that the region will continue to experience severe dry seasons that could diminish water supply and big storms that threaten to flood the infrastructure and shut down the canal. Something like that happened in December, 2010, when the canal had to be closed for 17 hours after an unprecedented storm dumped rain so quickly that Gatun and Alajuela lakes overflowed their banks and threatened the locks. This backed up shipping for about a day.

“A huge storm can cause so much infrastructure damage,” said Robert Stallard, a hydrologist at the Smithsonian Tropical Research Institute in Panama City who studies how climate change and land use affect the canal watershed. “It would cost hundreds of millions to billions of dollars if a suitably destructive, large [storm] event were to occur and the canal had to be shut down.”

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DROUGHT, EL NIÑO AND THE PANAMA CANAL

And there is another risk posed by intense storms. The canal depends on the watershed to work as a sponge, absorbing rain during the wet season and storing it for the dry season. If it rains too much all at once, trees and plants cannot capture and store enough water, which means that less is available during the dry season.

Weather extremes could lead to costly slow-downs that would actually make the canal a less efficient shipping route and cause delays. If the Panama Canal Authority is forced to impose weight limits on ships passing through, these restrictions could have a worldwide impact on the shipment of goods. Ships may have to travel around the tip of South America, or to West Coast ports and then have the freight moved cross-country by overland rail or trucking routes. Either way will add significantly to the cost of goods. That additional cost will, ultimately and inevitably, be passed on to consumers.

Ports in the eastern U.S. have invested billions to expand their capacity to accommodate the larger post-Panamax ships in anticipation of the opening of the new locks in the Panama

Canal. These ships, which can hold three times the cargo of the biggest ships that can currently move through the Panama Canal, are expected to carry 60% of global shipping cargo by 2030. Inadequate water levels will have a serious impact on the ability of the canal to accommodate these vessels. The ripple effect may be considerable, both locally and globally.

The El Niño effect on global weather is predictable and its onset is detectable, but its pattern and degree of intensity is irregular. Meteorologist Chris Orr expects that this fall will remain dry until about December or January for the region, but believes that the rainfall will be above normal through next summer. If true, this spells good news for the region and for global shipping. But it may still take until November, 2015 to completely fill the feeder lakes, so there is likely to be trouble in the short-term.

SOURCE: *The Guardian*—8/14/14; *The Sovereign Investor*—9/2/14; *The Australian*—8/13/14; research topic *El Niño*.

DOT TIGER 2014 PROGRAM

The Department of Transportation (DOT) announced on September 12 that they would provide \$600 million for 72 transportation projects in 46 states and the District of Columbia from its TIGER (Transportation Investment Generating Economic Recover) 2014 program. The DOT received 797 eligible applications from 49 states, territories, and D.C., a 36% increase from 2013, with requests for a total of \$9 billion.

Some of the funds have been awarded to projects investing in public transportation, such as the construction of a 7.6 mile bus rapid transit line in Richmond which will connect transit-dependent residents to jobs, and the modernization of Boston's Ruggles Station which will, among other things, link it to the parking garage at Northeastern University. These public transit projects serve as a direct benefit to job-seekers and job-creators, helping communities as a whole.

Funds have also been awarded to infrastructure projects, such as the new Route 47 Missouri River Bridge Project in Washington, MO, to replace the decaying 78-year-old existing bridge, and the Three County Roadway Improvements Program in Mississippi.

Some projects that have been granted funds are those that

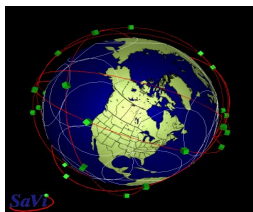
are using innovation to solve logistical problems and plan for future needs. One such is a project in North Texas that is seeking to promote multimodal transportation options to schools, improve transportation safety near schools, and advance long-term planning for school siting, with a focus on involving local governments, independent school districts and transit agencies.

Since 2009, the TIGER Program has provided nearly \$4.1 billion to 342 projects in all 50 states, the District of Columbia, and Puerto Rico—including 117 projects to support rural and tribal communities. Demand for the program has been overwhelming, and during the previous five rounds the DOT has received more than 6,000 applications requesting more than \$124 billion for transportation projects across the country. Congress provided the most recent funding as part of the bipartisan Consolidated Appropriations Act, 2014, which was signed by the President on January 17, 2014.

SOURCE: *DOT Press Release*—9/12/14.



THE INTERNET OF THINGS PART 2: M2M AND THE SUPPLY CHAIN



Eye for Transport recently published a report in conjunction with AT&T, based on a survey that culled responses from nearly 350 industry executives. The report sought to determine how executives at transportation and supply chain management companies use or plan to use technology to address some of the challenges facing the industry today, challenges such as higher operating costs and the commoditization of prices, an increasingly complicated regulatory environment, capacity crunches and the irregularity of customer demand, and the demands for business growth.

One of the key conclusions to be drawn from the survey results is that Supply Chain, Transportation, and Logistics leaders view the collection, analysis, and sharing of critical visibility data intelligence as a necessity and a key tool to overcoming the increasing complexity and challenges their industry is facing. Almost 90% of respondents report that improving operational visibility—knowing where a shipment is and having the ability to monitor the environmental conditions in near real-time in-transit—is seen as a critical and necessary requirement or at the least very important.

The survey also showed that organizations are becoming more sophisticated in what they deem as important visibility requirements. Location is not the only factor being monitored; near real-time information on such things as temperature, humidity, security, vibration, and other environmental conditions are considered to be critical to maintaining the quality of goods from departure to destination.

One clear finding of the report is that Machine to Machine (M2M) technologies will almost certainly surpass both RFID and bar-codes as a means of gathering important supply chain information. In fact, it is thought that it will rank second only to GPS as a visibility tool.

“M2M technology [aka Internet of Things, IoT] is becoming prevalent throughout society and business; the supply chain is no exception, indeed one could argue that supply chain and transportation has a huge amount to gain from the adoption of M2M technology,” states Eye for Transport CEO, Chris Saynor. “The ability to collect accurate data in real time is a vital component of a successful supply chain. M2M technology is enabling this, and allowing companies to make effective decisions.

The speed of M2M adoption in the supply chain is staggering. In terms of future deployments of operation visibility technology, only GPS exceeds M2M as a medium of choice.”

“Not only does M2M technology help to streamline operations throughout the supply chain, it also provides businesses with the ability to transform how they interact and communicate with customers,” said Mike Troiano, Vice President, Advanced Mobility Solutions, AT&T Mobile and Business Solutions. “We are on the front lines with businesses of all sizes creating, managing, and deploying the M2M solutions they need to stay competitive.”

Not everyone has the financial wherewithal to employ a full complement of these sophisticated systems right now, but it is estimated that by 2020 component costs will have come down to the point that connectivity will become a standard feature.

“The transformation of trade has been underway for some time. It is manifested most clearly in wider geographical participation in trade and the rise of international supply chain production. The first of these developments reflects the dynamism of emerging economies. The second is a vivid part of the recent story of globalization. Technology has been the great enabler of globalization, but globalization is a human construct and is therefore neither inevitable nor irreversible.... We should remember that the gains it brings could be nullified or at least mitigated if short-term pressures are allowed to override long-term interests, and if its social consequences in terms of the unevenness of its benefits are neglected.

“Technology has not just provided the wherewithal to make globalization possible in a physical and virtual sense, but it is also the key source of increased productivity associated with innovation and growth.... The sources of new technology will shift increasingly towards emerging economies. New technologies and innovation will emerge with greater vigour from the services sector. Technology could also change much of what we take for granted today in terms of production and consumption patterns.”

*Pascal Lamy, World Trade Organization Director-General—
Excerpts from the Foreword to the 2013 World Trade Report*

SOURCE: Eye for Transport / AT&T Report “Visibility, Speed and Agility—How M2M is Redefining the Supply Chain and Transportation”; World Trade Organization 2013 Annual Report.

PHOTO: Orbcomm satellite network.

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TRIVIA

1. S.P.E.C.T.R.E. is one of James Bond's arch enemies. What do the initials stand for?
2. In the 13th century, children were baptized with what?
3. In Boston, by law, what is it illegal to have in the back seat of your car?
4. This city in central Spain was an important Roman town, and its Roman aqueduct is still in use. A Spanish classical guitarist shares the same name. Name the town and/or the guitarist.

[Click here for answers to Trivia questions.](#)

ABOUT US

Established in 1990, OUTSOURCE, Inc. offers a complete range of freight management services and supply chain solutions to help you improve control and increase profitability.

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Air, sea, rail and truck—we can handle all of your domestic and international shipping logistics and transport needs, freeing you to do what you do best.....grow your business.

