



Biometric Implementations to monitor Time Attendance in the Manufacturing Sector

- by Mr. Johan Yusof, Marketing Executive, FingerTec Worldwide

The manufacturing sector plays an important role in contributing to a country's GDP. In the UK, the manufacturing sector contributes 10.4% of the country's GDP (Wright, S., 2013). An article pointed out that the USA's manufacturing sector contributed \$2.03 trillion to the economy, which is 12.5 percent of the country's GDP (National Association of Manufacturers, n.d.). In 2010, China overtook America as the world's largest manufacturing nation and in early 2013, they managed to generate \$2.9 trillion in output annually against America's \$2.43 trillion (Sims, D., 2013).

Manufacturing encompasses various industries, such as food and beverage products, textiles, furniture and chemical products, but is generally most associated with companies that specialize in engineering and industrial design. Some examples of major companies involved in the manufacturing sector include General Electric, Siemens and Toyota.

Some of these companies house a huge number of employees and this in turn comes with several issues pertaining to em-

ployees' time and attendance. This definitely will affect the industry as productivity is crucial in order for manufacturing companies to succeed and with cases such as absenteeism and tardiness getting in the way of employee productivity, this will cause the industry to suffer losses.

This article takes a look at some of the issues faced by the sector and how biometric time clocks can help solve them.

Workforce Issues Plaguing the Manufacturing Sector

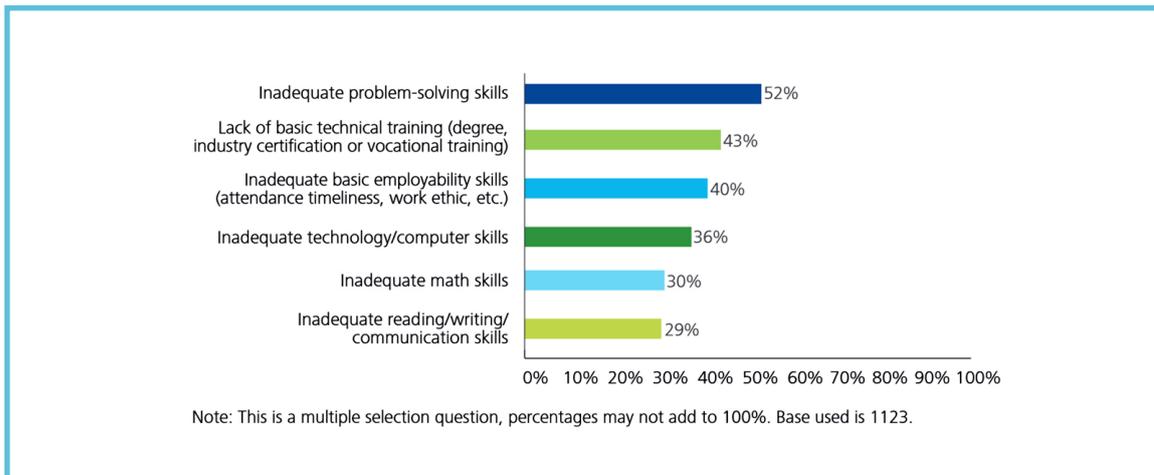


According to a 2013 report by the United Nations Statistics Division, manufacturing activities continue to grow worldwide and remain an essential key component of all economic statistics as the source of all physical goods. The manufacturing sector plays a leading role for growth in most developing countries.

Paul Golden, founder and managing partner of Schilling Ventures, LLC, remarked that the biggest obstacle facing the manufacturing sector is the lack of skilled training among its employees. Golden said that the lack of skilled laborers hinders productivity, causing a disadvantage against off-shore competitors. Many companies are also struggling to find employees with strong work ethics, opting instead on employees who opt for lower pay and in turn, results in work that is of poor quality (Stringfellow, 2012)

A survey conducted by Deloitte Development LLC and The Manufacturing Institute (Morrison et. al. 2011) shows inadequate basic employability skills, such as attendance timeliness and work ethic, coming in third among the most serious skill deficiencies in manufacturers' current employees. This comes right behind lack of basic technical training, such as degree, industry certification or vocational training and inadequate problem-solving skills as serious skill deficiencies, but is still considered an issue when taking into consideration the deficiency's placing.

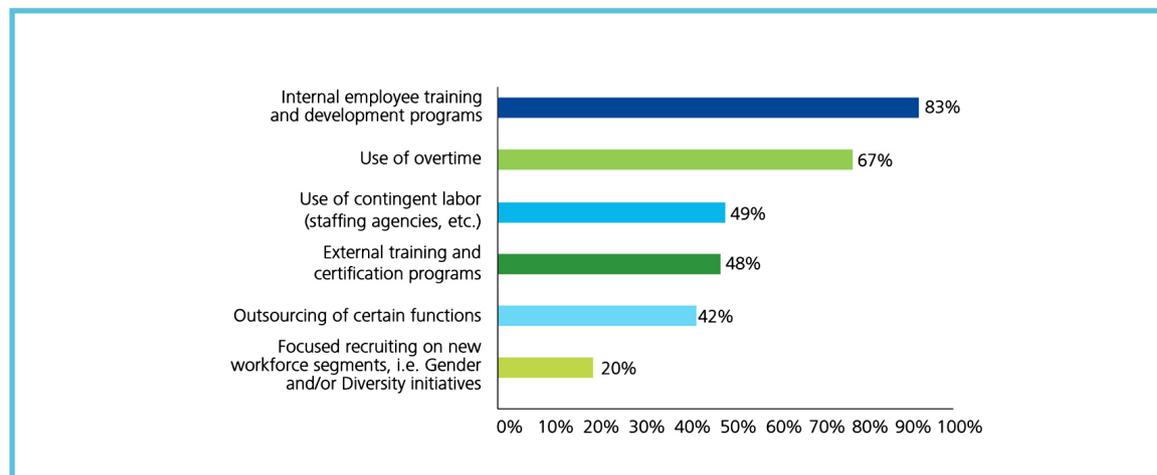
What are the most serious skill deficiencies in your current employees?



In the same survey, there was an emphasis placed on developing talents from the pool of employees a manufacturing company has. In order for them to make a significant impact, manufacturers should consider using various approaches, such as competency modelling, in order to gain momentum in their internal talent development efforts. Some training programs, such as career development programs and competency models, can be an invaluable tool for employees to reach the expectations in skills, knowledge and abilities that their employers re-

quire of them to possess. While many manufacturers do invest in training programs for their employees, evidence has suggested that these programs are falling short of their expected goals. The following chart makes note of two-third of the respondents who rely on overtime while the use of third-party labor by nearly half of the respondents were done to help close the skill gaps. The methods used by the manufacturers are proven to be costly, inefficient and can also add up to a decrease in overall performance.

Which methods do you currently use to mitigate existing skill gaps?



Becheikh et. al. (2005) wrote about innovation and how it determines its development within firms in the manufacturing sector. Austrian economist Joseph Schumpeter (1934, 1942) made the claim that innovation represents the driving force of economic development while arguing that “innovations made by capitalist entrepreneurs ensure a cyclic alternation of prosperity and recession phases, which in turn ensures economic expansion.” One important determinant of innovation is by staffing companies with highly educated, technically

qualified and experienced personnel ranging from diverse backgrounds while another looks at human resource strategies, such as training, job security, motivation via a compensation system and the modulation of work time. These strategies have proven to assist companies in having a qualified and motivated workforce that are capable of “creating new technologies and absorbing outside-developed ones (Hoffman et. al., 1998; Romijn and Albaladejo, 2002).

Overtimes, Shifts and Productivity Issues Abound



Hard labor is prevalent in the manufacturing sector, especially with companies that specialize in engineering and industrial design. To add more fuel to the fire, overtimes and shifts are usually imposed on the employees who work tirelessly during late hours and this may cause reduced productivity and worker errors. In the case of construction projects, Thomas and Raynar (1997) found decreases in efficiencies of 10-15% for 50 to 60-hour work weeks. This is made due to the inability to speed up the supply of materials, lack of tools or equipment, congestion, mistakes and unintended events, changes and rework. Hanna et. al. (2005) revealed other worrying factors of long working hours for employers, including higher pay rates at time and a half, increased absenteeism and low morale (Caruso, 2006).

Unscheduled leaves can, more often than not, be a bane to a company's business. Employees would call in sick or take time off from work and leave little to zero notice to their employers on their absence. This will result in low productivity and morale in the workplace. According to a survey report by the Society for Human Resource Management (2009), unscheduled leaves that take place in certain industries, such as manufacturing and service, can have huge implications in terms of productivity and coverage in key positions.

During an economy downturn, employers are known to

offer few leave options as paid leave is considered one of the costliest benefits employers offer. More organizations have been looking to alternative leave options as a potential way to deal with the fallout of an economic meltdown, including the emergence of new work patterns that will encourage broader use of employee leave benefits. A lot of employers are known to be less willing to offer any kind of leave, especially paid leave, in order for them to operate with fewer employees and smaller budgets during troubled times. More likely than not, employers will still continue to offer both paid and unpaid leave, but will also look for ways to minimize costs.

Another option is to utilize paid time off (PTO) plans. What this plan does is combine paid leave into one comprehensive plan, including traditional vacation time, sick leave and personal days and in the USA, paid time off (PTO) plans have been gradually increasing among employers. Employers see this plan as a way to minimize the cost of leave because the combined number of days offered is generally less than the number offered through separate vacation and sick leave plans. During an economic downturn, this would encourage more employers to adopt these types of plans to streamline and simplify the leave administration process. Meanwhile, small numbers of organizations encourage employees to take unpaid vacation time as a way to save on labor costs.

Biometric Solutions Made-to-Spec for Manufacturing Companies

In order to reduce cases where employees contribute to low productivity and absenteeism due to working shifts and overtime, it is best to monitor their attendances and when they clock in and out of their scheduled shifts. The most effective way to do so is through the use of biometric time clocks. Fingerprint verification is known for being adequate in verifying attendances due to the accuracy of a terminal's minutiae matching technology. This helps to eliminate fraudulent cases of buddy punching, where an employee will help his colleague punch in his attendance for him when he is either late for work or absent.

Employees in manufacturing companies literally get their hands dirty when it comes to producing goods and this may result in their fingers wearing out overtime. Those who work in heavier manufacturing industries, such as automotive manufacturing, are also constantly having their gloves on due to the parts, materials and accessories they have to handle on a daily basis. To ensure employees are able to verify themselves without having to use their fingerprints,

face recognition devices are presented as an alternative to fingerprint devices. Face recognition terminals, such as Face ID 4 from FingerTec, are useful for employees who want to verify their attendances as the terminals require no physical contact and verification is done quickly and accurately. Aside from face recognition, employees can also verify themselves through the use of card or password, verification methods that are usually embedded in biometrics products.

While PTO plans, as mentioned earlier, is a useful policy, one of its biggest drawbacks is the probability of employees missing work more frequently, which would cause absenteeism to occur. In addition, if an employee were to use up all of his or her allotted PTO days, yet shows up to work ill, he or she will be subjected to working while being sick, which may also result in lower productivity. As for shifts and overtimes, with many employees to juggle as they put in their work, it will be a struggle for human resource to keep track on their attendance and activities. This is where TimeTec Cloud comes in as a solution to these issues.

TimeTec Cloud is a cloud time attendance solution that is efficient in managing staff attendance issues. With more companies turning to cloud computing in order to secure their data and access them whenever and wherever they like, TimeTec Cloud is designed to reduce administrative overheads by eliminating manual timecard calculations. This is done through TimeTec Cloud servers that manage, maintain and monitor storage of all data from the company's terminals. Some of TimeTec Cloud's key features may play a role in managing a company's workforce. The terminal raw data management of the application is useful to check, trace or export raw data from the terminal and through the data audit list, it will enable users to view relevant information on particular events or activities that take place at the terminal.

Schedule No. * Description Schedule Type

Week Day	Day Type	In	1st Break	2nd Break	3rd Break	4th Break	5th Break	Out	OT	Action
Sunday	Restday								08:00 AM 10:00 PM	
Monday	Workday	08:00 AM	10:00 AM 10:30 AM	12:00 PM 12:30 PM	02:00 PM 02:30 PM	04:00 PM 04:30 PM	06:00 PM 06:30 PM	08:00 PM		
Tuesday	Workday	08:00 AM	10:00 AM 10:30 AM	12:00 PM 12:30 PM	02:00 PM 02:30 PM	04:00 PM 04:30 PM	06:00 PM 06:30 PM	08:00 PM		
Wednesday	Workday	08:00 AM	10:00 AM 10:30 AM	12:00 PM 12:30 PM	02:00 PM 02:30 PM	04:00 PM 04:30 PM	06:00 PM 06:30 PM	08:00 PM		
Thursday	Workday	08:00 AM	10:00 AM 10:30 AM	12:00 PM 12:30 PM	02:00 PM 02:30 PM	04:00 PM 04:30 PM	06:00 PM 06:30 PM	08:00 PM		
Friday	Workday	08:00 AM	10:00 AM 10:30 AM	12:00 PM 12:30 PM	02:00 PM 02:30 PM	04:00 PM 04:30 PM	06:00 PM 06:30 PM	08:00 PM		
Saturday	Restday								08:00 AM 10:00 PM	

Round to nearest minutes:-

Rounding:-

Deduct late-in time or early-out time from work time if more than (minutes):-

Break time duration for flexi-break range in minutes:-

Deduct actual break time from work time:-

Keeping tabs on activities and events taking place at the terminal via TimeTec Cloud

Another key feature is clocking schedules. This feature provides daily, weekly and flexible clocking schedules to support normal, overnight and multiple shifts configuration. For manufacturing companies that are stringent about wanting their employees to work overtime and shifts, this would be an easy way for human resource to keep track on who has been working shifts and overtimes and manage their payroll duties well. Additionally, the clocking schedule would also be a great way to monitor employees who might be working well beyond the allotted time they have been originally tasked with and reduce them from showing up at work tomorrow with heavy fatigue that will lead to low productivity.

Data Audit List

This tab enables you to view all of the downloaded clocking activities along with its relevant information such as when and where a particular event or activity takes place.

Select Date 29/08/2013 Convert Delete

Log ID	Terminal ID	Serial No.	User ID	Employee Name	Clocking Time	Clocking Type	Remark	Location	Attendance	Slot
14745887 3	0		2023	Vincent	29/08/2013 06:19:32 PM	0 : Check-In			29/08/2013	12
14745887 2	0		2023	Vincent	29/08/2013 06:19:08 PM	0 : Check-In			29/08/2013	12
14745885 6	0	4828102	3119	Julianna	29/08/2013 06:06:05 PM	0 : Check-In		148 Jalan BK 2/7, Bandar Kinrara 2, 47180 Puchong, Selangor, Malaysia		
14745885 5	0	4828102	3119	Julianna	29/08/2013 06:06:01 PM	0 : Check-In		148 Jalan BK 2/7, Bandar Kinrara 2, 47180 Puchong, Selangor, Malaysia		
14745885 4	0	4828102	3119	Julianna	29/08/2013 06:05:50 PM	0 : Check-In		148 Jalan BK 2/7, Bandar Kinrara 2, 47180 Puchong, Selangor, Malaysia		

Manage and monitor employees effectively using TimeTec Cloud's clocking schedules

TimeTec Cloud is also able to generate multiple reports that will come in handy when it comes to handling the employees' salaries. 26 pre-configured reports are available in TimeTec Cloud. In addition to the usual daily and weekly attendance listing to record staff attendance, reports for tardiness and staff who are on leave can also be generated. In line with those who have to work overtime, an overtime approval worksheet can also be filled up by the employee in order for human resource to identify and monitor the staff who have been given the approval of working overtime.

Report
My Profile

Attendance Listing
Attendance Analysis
Terminal Analysis
Duty Schedule Listings
Table Listings

Electronic Time Card
Electronic Time Card (6 columns)
Daily Attendance Listing
Weekly Attendance Listing
Attendance Sheet
Job Cost Analysis
Detailed Employee Time Card
Correction Report
Tardiness Report
On Leave Report
Overtime Approval Worksheet
Vacation and Disease Report

A whopping 26-preconfigured reports can be generated for your convenience

Moving Forward to a Productive Workforce



While it may seem that installing biometric time clocks are expensive, in the long term, it is a worthy investment for any kind of company that intends on taking their staff's attendance to the next level. With the use of biometrics as a way of identifying one's self to clock-in and clock-out, there is no need for manual time clocks, such as the ones that use time cards, which may be more of an inconvenience due to the constant purchase of costly time cards. In addition, with the use of software such as TimeTec Cloud that is tailored to manage a company's workforce, everything is automated and systematic to make things easy for human resource.

As 2013 came to an end, the USA's manufacturing sector grew at the second-fastest pace in more than two years as this was fueled by a gain in orders that will help propel the country's expansion (Shobhana, C., 2014). In order for the future to look even brighter for the manufacturing sector, productivity is key and the aid of biometric time clocks, such as the ones from FingerTec, will lead the way to a more prolific and active workforce in the industry.

References

- Becheikh, N., Landry, R. and Amara, N., 2005, Lessons from innovation empirical studies in the manufacturing sector: A systematic review of the literature from 1993–2003, *Science Direct*.
- Caruso, C. C., 2006, Possible Broad Impacts of Long Work Hours, *National Institute for Occupational Safety and Health*.
- Examining Paid Leave in the Workplace, 2009, *Society for Human Resource Management*.
- Facts About Manufacturing in the United States, n.d., *National Association of Manufacturers*. [ONLINE] Available at: <http://www.nam.org/Statistics-And-Data/Facts-About-Manufacturing/Landing.aspx> (Accessed 7th February, 2014)
- Manufacturing Statistics – Current trends and challenges, 2013, *United Nations Statistics Division*.
- Morrison, T., Maciejewski, B., Giffi, C., Derocco, E. S., McNelly, J. and Carrick, G., 2011, Boiling point? The skills gap in U.S. manufacturing, *Deloitte and The Manufacturing Institute*.
- Shobhana, C., 2014, Manufacturing Growth to Help Propel U.S. Expansion: Economy, *Bloomberg Luxury, Bloomberg*. [ONLINE] Available at: <http://www.bloomberg.com/news/2014-01-02/u-s-ism-manufacturing-index-fell-to-57-in-december-from-57-3.html> (Accessed 27th February, 2014)
- Sims, D., 2013, China Widens as World's Largest Manufacturer, *Industry Market Trends, ThomasNet News*. [ONLINE] Available at: <http://news.thomasnet.com/IMT/2013/03/14/china-widens-lead-as-worlds-largest-manufacturer/> (Accessed 10th February, 2014)
- Stringfellow, A, 2012, Challenges Facing Today's Manufacturing Industry, *OPEN Forum, American Express*. [ONLINE] Available at: <https://www.americanexpress.com/us/small-business/openforum/articles/challenges-facing-todays-manufacturing-industry/> (Accessed 10th February, 2014)
- Wright, S., 2013, Health and safety in manufacturing in Great Britain, 2013, *Health and Safety Executive*.