

# RMG sector's tipping point

## Offshore apparel manufacturing may move back home as automation takes over



OFFSHORING of apparel manufacturing has been a blessing for many developing countries. The readymade garments (RMG) industry, employer of 40 million workers, mostly rural women, contributes more than 80 percent to Bangladesh's export revenue. Low-cost labour has been the primary reason for western retailers to wait for months to get a shipment from offshore destinations. Once technology becomes a cheaper alternative to the least costly manufacturing labour, will apparel manufacturing complete the journey in returning home?

As countries like Bangladesh, Vietnam or Cambodia do not have the technological edge in apparel making, why should economics of automation suggest that they should remain the cheaper alternative? With advances in robotics and automation, reshoring is bound to happen. The challenge is to detect the tipping point so that both premature exit and prolonged stay could be avoided in minimising the loss.

It's well understood that apparel making is an incredibly labour-intensive process. Starting from design, pattern-making, and cutting through sewing, there appears to be 14 major steps in turning fabrics into ready-made garments. Even in this age of automation, human intervention is quite necessary at every stage of production. But there has been continuous development of technological alternatives that has introduced automation at each step—reducing the need for labour. Automation in the form of computer-aided design and machine-assisted cutting is already in practice.

Among all the stages of apparel production, sewing is perceived to be notoriously difficult to automate.



PHOTO: STAR

Despite the success in cutting fabric, for instance, and sometimes sewing buttons or pockets, failure to automate the aligning of material correctly to the sewing head, feeding it through and constantly adjusting the fabric to prevent it slipping and buckling, means that there is no automated production line in which fabric goes in at the one end and finished garments, such as jeans and t-shirts, come out on the other. But recent developments indicate that this critical barrier has been overcome. A start-up in Georgia (US) has developed a highly calibrated machine vision innovation to watch and analyse fabric—succeeding in detecting distortions and robotically adjusting the fabric, while feeding to sewing head. Such automated sewing technology has successfully demonstrated that a t-shirt making plant working under the

guidance of a single human handler, can produce as many shirts per hour as about 17 workers in a similar production line in Bangladesh or Cambodia. This development indicates that we are now not too far from a time when automation will make machine intensive production cheaper than labour.

The next question is, how much automation is enough to take apparel manufacturing to the tipping point of reshoring—taking back production from offshore destinations. Research suggests that within an off-shored manufacturing operation, an increase by one robot per 1,000 workers is associated with a 3.5 percent increase of reshoring activity. On average, a single robot usually takes the job of 6 workers. In apparel manufacturing, the delegation of roles from human to machine takes place in different

forms, starting from the deployment of robots for handling packages to micro level automation in feeding fabrics to sewing head. Such diverse forms of automation often make it difficult to develop a prediction model based on robot density.

Another measure could be measuring the effect of automation on the reduction of labour requirement in foreseeing the tipping point of reshoring. Economics of the total cost of production suggests that reaching a completely human free state is not required to justify the relocation of plants from offshore locations. The example of Adidas relocating its manufacturing to high-wage countries such as US and Germany, employing 160 people as opposed to 1,000 workers in a comparable factory in Asian countries like Indonesia or Vietnam, indicates that once automation replaces workers up to a certain level, the tipping point of reshoring can be reached. Other factors such as cluster effects should also be taken into consideration in fine tuning such prediction model influencing business decisions.

Historically, as countries develop and wages rise, the apparel-making trade moves on to the next cheapest location: from western countries to developing ones like China and Bangladesh. Due to technological progression, instead of moving to the next cheapest labour destination, apparel manufacturing is about to return next door to the major retailers. As progress is being made in incorporating an increasing level of robotics and automation, labour cost advantage in apparel manufacturing in the age of the Fourth Industrial Revolution has been continuously eroding. There is no doubt that smart machines will keep progressing in reducing low skilled labour requirement, consequentially reshoring apparel manufacturing. The challenge for existing offshore destinations is to predict such trend and remain in sync—as both premature exit and overstay are harmful.

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# A personal tribute to Nusrat Jahan Rafi



My first visit to a madrasa school for female students was in July 2014. We met in a large rectangular room, with a faint damp stench, which they used both as a classroom and as their bedroom. The madrasa employs a mentally challenged woman as caretaker. She walked us through a narrow corridor to the room where we were to meet. The girls were taking a nap, as they often are, after Asr. After a few loud knocks on the door, one of the little ones, barely about eight, came out rubbing her sleepy eyes.

Immediately, the caretaker took a stick that was lying around and started beating it on the floor and chasing the girls about the room. That woke them up and suddenly, 20 to 30 girls were scurrying around, restlessly. I told the woman it wasn't necessary and we started to reassure the girls. I noticed how afraid they were, or probably just shy of outsiders. They huddled together, clutching their knees, quite literally shrinking themselves, covering their faces as they spoke. Over the years, with significant effort from the teachers, some members of the administration, our volunteers and staff members and the girls themselves, they have grown more into their skin. They have started to unshrink. And I have stood a proud witness to their unshrinking.

Until I read that Nusrat Jahan Rafi, the 18-year-old Alim examinee who was set ablaze on the terrace of the

madrasa she studied and had sustained 80 percent burn injuries on her body, had died after a five-day long battle with death.

When I am asked why I do what I do, what my vision is, I think about making space for more girls like Nusrat to flourish. But I am forced to consider the possibility, that maybe, this petty world, will never make enough space for Nusrat and her kind. That as soon as my girls start to unshrink themselves, to grow the courage to fly, they too will have their wings set ablaze by misogyny. They will be ripped apart by someone gripped by some inexplicable fear that she will take up too much space. That she will become something they cannot contain. And so she must be destroyed.

The truth is, she will. Or she

would have. This girl was not one to be silenced. She was, like a phoenix, born to rise over and over again from the ashes. And so she did, till her very last breath. She rose over and over again. Her battle started long before March 27, when her family filed a formal complaint with allegations of sexual harassment i.e. attempted rape, against the principal of the madrasa, Siraj Ud Doula. But this wasn't the first time she had been subjected to sexual harassment. Two years ago, the daily *Manab Zamin* reported, this same young woman, 16 at the time, upon rejecting the advances of a local goon, had had *chun* thrown into her eyes. She had reported the incident back then too and afterward, with her eyes still burning from the attack, she sat for her exams. Two years later, after an

attempted rape by her school principal, she once again displayed the courage to go to her family, report the incident, and then lodge a formal complaint against the head of her school, who is also locally powerful and influential.

At the point at which she was set on fire by her attackers, Nusrat was adamantly refusing to withdraw her complaint. She was set on fire on the school grounds, the rooftop of the building, where she was supposed to appear for her board examination. I am struggling to find the words to capture my disbelief at the sense of impunity that someone must have in order to think that someone will be set on fire in a school, during an ongoing board examination and the attacker(s) will go scot-free. But that, unfortunately, is the predictable reality.

Nusrat's family reported that the local police had tried to muddy the process. Reports on leading national dailies quoted the officer in charge commenting that they would check if she was really attacked or if it was an attempted suicide. It took several days for the police to actually bring in the principal for questioning. But what I find more astounding is that local students and residents brought out a rally to demand the "unconditional release" of Sirajuddaulah. Needless to say, the only possible explanation is local political influence.

Over five days, Nusrat fought a valiant battle to live, giving in right after she made the following statement, "I will protest, I will protest this crime until my last breath." As I watched the video, now being widely circulated on Facebook, my eyes caught a poem that was written by two girls we work with as part of a workshop on Women's Day. Loosely translated, as follows:

*My dream is very big  
I want to be free  
I will make my dream come true  
I will not stay captive.*

When I read the poems my girls write, I am usually filled with hope. But this time, I am gripped by fear. What if they do start to claim their freedom? What if they grow as unabashedly fearless as Nusrat? Will they, too, be set on fire?

With no certainty can I claim that they won't. Misogyny is so deep-

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Nusrat Jahan Rafi

PHOTO: STAR

seated and so rampant, it is ready with kerosene in hand to set fire to anything that rouses it, on school grounds, buses, trains and homes. Be it a two-year-old baby or an 80-year-old woman, misogyny burns everyone.

But how many can you burn? A phoenix obtains new life by arising from the ashes of its predecessor. Over and over again.

Shagufta Hossain is the Founder and Executive Director of Leaping Boundaries. Leaping Boundaries aims to empower female madrasah students by increasing their visibility and access to platforms where they are traditionally underrepresented.

QUOTABLE  
Quote

**CORETTA SCOTT KING**  
(1927-2006)  
AMERICAN AUTHOR

*My story is a freedom song of struggle. It is about finding one's purpose, how to overcome fear and to stand up for causes bigger than one's self.*

CROSSWORD BY THOMAS JOSEPH

ACROSS

1 Dealer's foe

5 Pool-swimming count

9 Verdi pieces

11 Simple calculators

13 Rho follower

14 Showed again

15 Bat wood

16 Yard event

18 Club layer

20 Jar part

21 Put away

22 Blinds piece

23 Harry's friend

24 "Aw, shucks!"

25 Rotisserie part

27 Constructed

29 Caffeine source

30 Disperses, as a search party

32 Talking crazily

34 Dog warning

35 Brat's opposite

36 Writer Bret

38 Throb

39 Some exams

40 Dry run

41 Iowa State setting

5 Tee choice

6 Beame and Burrows

7 Geometric shape

8 Justice Antonin

10 Titan circles it

12 Bumbling

17 Great serve

19 Bender

22 Six, in Seville

24 Zealous

25 Satchel part

26 Gorp bit

27 Prohibit

28 Slow mover

30 Steak cut

31 Lock

33 Hardy heroine

37 Coach Parseghian

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by Mort Walker

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