

Automation and digitization in Operations

Digital, Analytics and Automation provides opportunity to drive the improvements beyond what we have achieved so far



Digitization & automation can bring a step-change in performance trajectory ...

90%+

Availability of equipment

40+%

Throughput / capacity unlock

50%+

Improvement in quality outcomes (i.e. OOS, deviations)

98-99%+

On-time (in-full) delivery rates

40%+

Reduction in conversion costs

30%+

Enhancement in people productivity

Environmental sustainability

(minimum carbon footprint, optimized water / energy consumption and minimum waste)

... and transform the operating model on the shop-floor



Inter-connected and intelligent equipment



Automated & integrated business planning



E2E seamless material flow 'touchless' experience from dispensing to dispatch



Realtime performance visibility across the organization; i.e. minute-level at each machine



Data-driven decision-making at all levels in the organization

This will also allow us to shift to a lean and transformed manufacturing network overall;

Over last few years, we have set up several foundational elements to drive digitization and automation ...



Foundational layers for digital & analytics Description					Illustrative applications						Cipla's current position
	V Data layer			Enterprise-wide integration of data	Data lake				Data War	ehouse	
	Ш	IT layer	(((•	IT applications to capture data across functions / areas	ERP (e.g. SAP)	eTRACK	LIMS	TRACKW ISE	MES (eBMR)	Local apps (BMS, EHS, EMS, etc.)	
	П	Operating technology layer	#	Recording & storage of operations data (e.g. from sensors)	SCADA Remote Viewer, Historians, SQL DB						
					PLC, HMI				SCADA/I	ocs	
	١.	IIOT and sensors	(C)	Sensors on equipment to capture process, and environment data	Sensor						
					Equipment						

... and this has led to a few early wins for us





Advanced analytics driven supply robustness

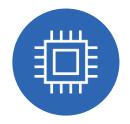


50%+ improvement in supply and reliability outcomes across the network



Automated data logging and reporting





Digital 'boardroom' for organization-wide transparency





Advanced analytics led reduction of invalid OOS



30%+ reduction of manual entries by elimination of paper-based processes

Granular Visibility of holistic KPIs across levels in the organization

35%+ reduction in invalid OOS

However our aspiration going forward is even more bold!





Create "touchless factories"
by rewiring plant operations,
upgrading technology and
reducing operator/analyst
dependence



Enable data-driven decisionmaking and performance enhancement, through rapid deployment of Industry 4.0 use cases



Build a 'digitally native' organization with at-scale DnA talent & capabilities i.e. upgrade existing roles and add new capabilities



Achieve top decile
performance in operations,
on performance outcomes
(quality, cost, productivity, &
service levels) while also
ensuring environmental
sustainability

Our aim is transform the work-life of our people and institute a digitally native organization



≡ Changes in 'Day In Life Of' operators



Shift dialogues at Digital board; i.e. real-time update vs. dated manual data



Looks at dynamic real-time scheduler to get work-allocation for shift



Checks equipment condition; i.e. no need for physical inspection



Uses advanced analytics to set optimal machine parameters



Gamified capability
building on key
modules for utilizing
downtime



Leverage real-time machine condition monitoring (IIoT-led) to report breakdowns



Follows visual instructions for change-overs



Has minimum interaction with equipment (continuous / integrated mfg.)

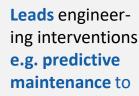
Transformation in activities of cross functional teams





Uses automated alerts to IPQA for seamless line-clearance





reduce breakdowns utilizing IIoT



Assists investingator and IPQA driving aided RCA for early investigation

Learnings from our journey so far





Aspirations should be big-and-bold, i.e. digitization and automation is beyond the 'incremental'



Don't wait for 'greenfield' facilities to start; Real value unlock happens in existing facilities



Maintain a strong value-backed view to any investment/ initiative - Easy to fall into the trap of investing for the sake of "technology"



Dedicated carved-out team needed to drive and sustain such a large scale effort



Focus on both onboarding new skills, but also on re-skilling existing workforce – true transformation can only happen through a combination of both



There will always be people 'on the fence' for such efforts; critical to take them along