

REVIVING THE PHARMA ANCILLARY INDUSTRY

Roadmap for Resilience with Excellence

June, 2020



EXECUTIVE SUMMARY (1/2)

The success of ~\$41 Bn Pharma industry is driven by a network of Ancillary Partnerships

- The **pharma industry** is a jewel in India's crown with **long term growth opportunities**
- The **~\$9 Bn ancillary industry** is a key contributor to the success of pharma industry. . Key Level 1 ancillaries include API/KSMs, Packaging (Plastic, Aluminum, Glass) and Excipients and Chemicals. **MSMEs** have **salience of ~55-60%** within ancillaries, contributed by ~10,000 – 11,000 units

Ancillaries have faced significant disruption due to a variety of factors during lockdown

- Restricted movement and fear for safety has resulted in constraints in **manpower availability**
 - Movement constraints have been caused by lack of public transport and unclear communication to ground authorities leading to employees being denied passage. A fraction of the workforce is also unwilling to resume work citing fear of infection and pressure from families
- Impacted surface and seas transports have led to **logistics disruptions**
 - Low availability of trucks and truckers due to absenteeism, refusal for carrying part load, issues with transport permits for interstate movement and clogged sea ports have resulted in disrupted surface and sea transport
- **Raw Material shortage** caused by operating constraints, absence of operating permits and lack of sufficient orders has relatively been less disruptive than manpower and logistics, however the situation may worsen in the future once the inventories servicing current requirements run out
- Stretched working capital cycles and increased input costs are creating **financial distress** for smaller players
 - Reduced inventory turnover and payable days along with stretched receivables is creating a strain on the working capital
 - An overall cost impact of 9% - 11% anticipated for all ancillary players, with smaller players facing severe financial distress
- At an overall level, Baddi and Vapi clusters have been more adversely impacted due the challenges posed by lockdown
- Disruptions in third party services as well as delivery pressure from customers have been sporadic challenges across ancillaries

The road ahead is fraught with risks

- While challenges like surface logistics and RM shortages are getting resolved with lockdown relaxations, areas like manpower availability (due to permitted movement of migrant labor), clogged sea-ports and financial distress (especially for MSMEs) require **urgent action**
- Epidemiology suggests that a recurrence of Covid-19 is imminent. However, key **questions vis-à-vis disaster management** like definition of essential goods, clear communication to ground authorities and communication to alleviate public fear **remain unanswered**
- Further, the COVID crisis and its implications have **amplified structural risks** for the industry - single source dependence for imports and increased costs to comply with new ways of working

EXECUTIVE SUMMARY (2/2)

Concerted efforts across Govt, large pharma ,ancillaries and IPA necessary for revival

We propose **six recommendations** to ensure the ancillary industry **recovers rapidly** and is emerges **resilient and stronger** than ever thus securing **long term success** for the industry

ACCELERATE RECOVERY for business continuity (next 3 months)

1

Government to deliver **financial relief to the MSME ancillaries**

- While the Govt, had announced relief measures for MSMEs in form of INR 3 Lakh Crores collateral-free automatic loans for MSMEs, they will have to ensure effective disbursal of the proposed intervention. Additional relief on electricity costs and wage support packages and moratoriums on statutory payments like ESI, PF and gratuity will **improve the financial situation** of MSMEs

2

Ancillaries to **create and implement protocols for worker safety** to convince the workforce and **ensure safe return to work**

- Guidelines from the govt. on pre-emptive safety protocols and measures along with awareness of insurance schemes and COVID treatment centers would go a long way in bolstering this effort

BUILD RESILIENCE for preparedness in case of recurrence (next 6 months)

3

A **robust disaster management mechanism**

- A **COVID control tower**, driven by IPA and supported by industry and Government stakeholders) **will be at the nerve center** supported by the business continuity toolkit - these will play a pivotal role in influencing and managing communications across stakeholders

4

A **cross-industry collaboration platform** , led by large Indian Pharma manufacturers will drive greater visibility in the ancillary value chain to proactively identify supply risks

INVOKE RENAISSANCE to emerge stronger (next 1-2 years)

5

Reducing reliance on imports from a single geography to manage supply disruptions

- This will require the govt. to identify strategic APIs to for indigenous manufacturing and facilitate execution of this plan through inducing clusters by early approvals, set-up of common utilities, lowered borrowing costs and research based linkages to continuously innovate

6

Mentorship / knowledge sharing , facilitated by IPA and pharma companies, will enable ancillary competitiveness through access to frugal innovation, sourcing assistance, better payment terms and persuading pharma companies to accept price hikes

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02 SETTING THE CONTEXT

03 CHALLENGES FACED BY ANCILLARY PLAYERS

04 RECOMMENDATIONS

REPORT OBJECTIVES

Current situation:

COVID-19 presents itself as an unprecedented event resulting in several new challenges plaguing the pharmaceutical supply chain. The crisis highlights the cascading effects of ancillaries on the overall functioning of the pharmaceutical ecosystem. These challenges are further compounded by the limited visibility industry stakeholders have into ancillaries.

IPA-Accenture initiative:

IPA and Accenture recognized that urgent action is required to support the ancillaries and therefore collaborated to identify interventions that will enable business recovery.

The methodology for identifying these interventions is interactive - through IPA's and CRISIL's facilitation, Accenture has conducted several interviews across large Indian pharma manufacturers, pharma ancillaries and industry SMEs to develop a holistic perspective.

Outcome:

This report focuses on understanding the root causes of the challenges and possible recommendations across the time horizon:

- **Execution focused interventions** - To navigate the current situation and help ancillaries get back on their feet in the short term while minimizing the impact on bottom line
- **Policy level recommendations** – Ideation of long-term interventions to help the business stabilize over time, sustain their performance and succeed in the 'new normal'

We believe that concerted efforts across pharma and ancillaries, government and the IPA will be necessary to implement the recommendations. This document will help in expediting the action by bringing all industry stakeholders on the same page while also furthering the policy agenda of the ancillary industry.

WE FOLLOWED A MULTI-PRONGED METHODOLOGY, INCLUDING PRIMARY INTERACTIONS ACROSS ANCILLARY PLAYERS, FOR OUR ANALYSIS AND RECOMMENDATIONS



PRIMARY RESEARCH

- Interviews across clusters and industry segments for ground level insights



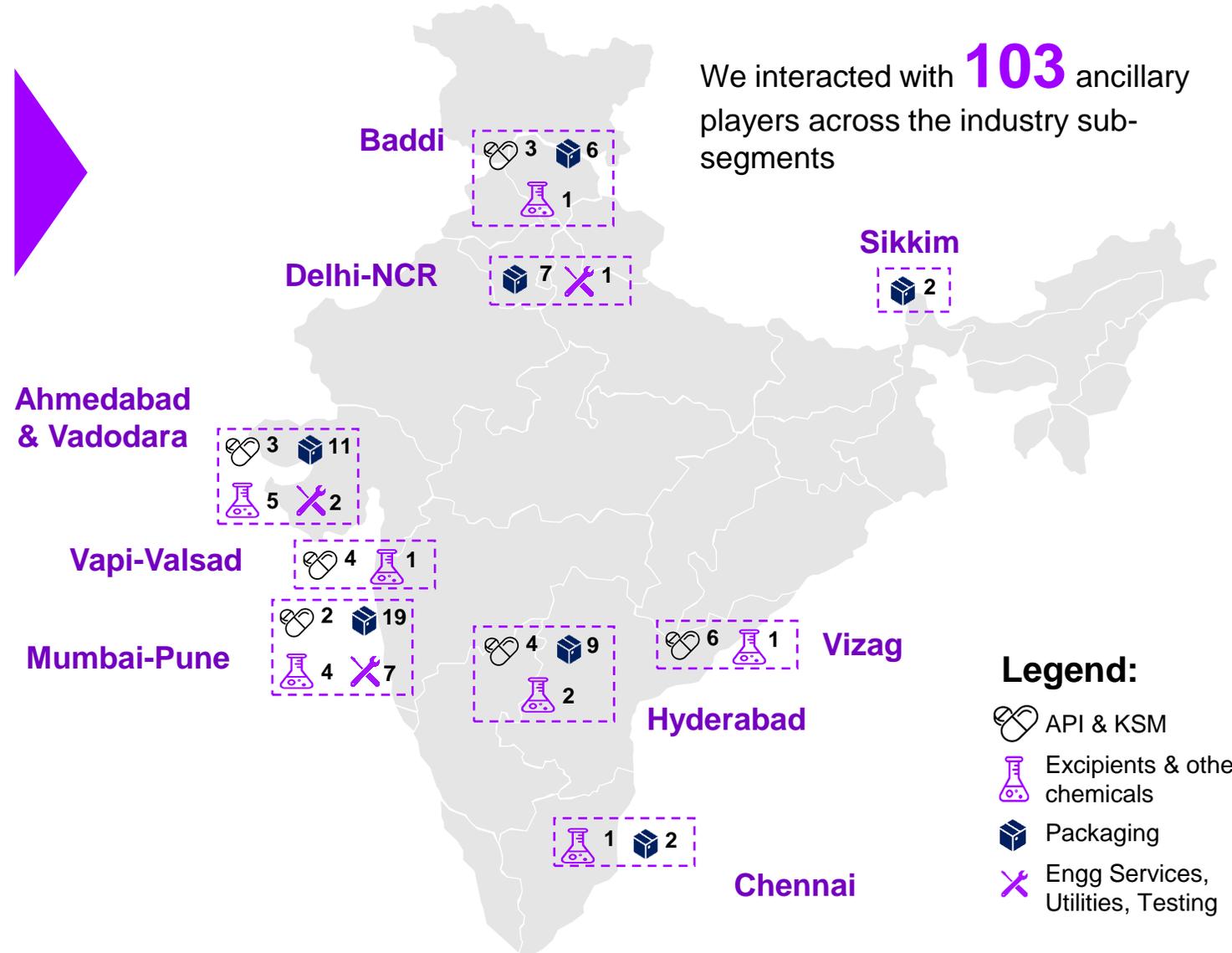
SECONDARY RESEARCH

- Augment primary research inputs on evolving industry scenario and challenges faced



BEST PRACTICES

- Leverage learnings from other countries and state governments around crisis management and industry support



Legend:

- API & KSM
- Excipients & other chemicals
- Packaging
- Engg Services, Utilities, Testing

SETTING THE CONTEXT



THE ~\$41 BN PHARMA INDUSTRY IS A JEWEL IN INDIA'S CROWN



Pharmacy of the world

- ~22% share of the global generics market, largest in the world
- ~550 US FDA approved plants (maximum outside the US)
- 50% of global demand fulfilled for vaccines



One of the lowest prices in the world

- Indians pay 70% less than the global median to buy medicines
- One of the lowest manufacturing costs (almost 50% of Europe)
- Provision of access to affordable treatment (e.g. anti-retrovirals in Africa) to people / Governments who have an affordability challenge



Pivotal role in the global COVID crisis

- Quick production ramp-up of potential COVID drugs
e.g. Favipiravir (Fujifilm Toyama Chemical), Remdesivir (Gilead)
- Supplying COVID support drugs to the world
e.g. HCQ Tablets to 108 nations, \$5.4 billion worth of Paracetamol

Long term growth opportunity

Possibility to increase value share

- India accounts for 10% of global production by volume, but 1.5% by value
- Potential to switch from generics to higher margin licensed drugs

Strategic shifts in pharma supply chain

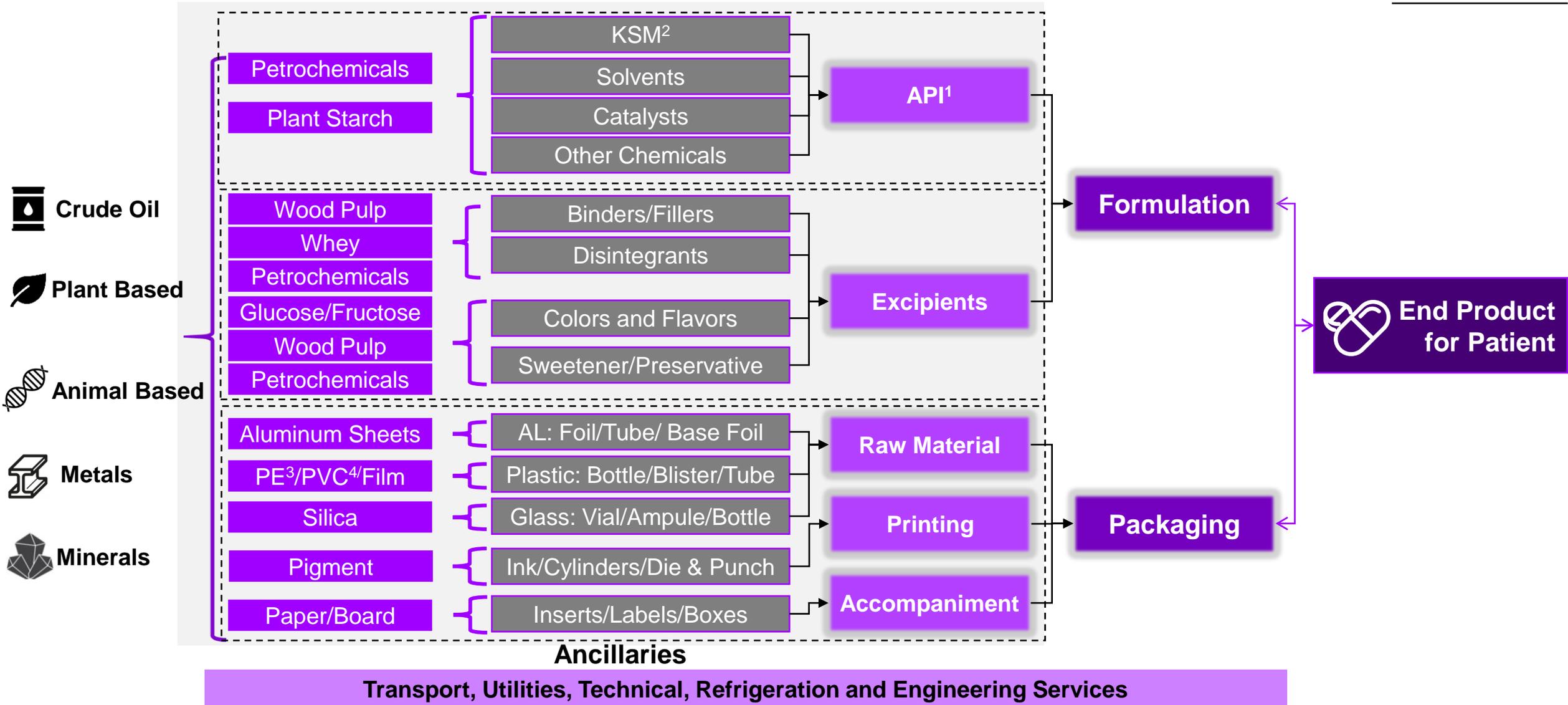
- There is a strong global push to de-risk pharma supply chains and reduce dependence on China
- Rising wages and anti-pollution drive have eroded China's once-overwhelming cost advantage

Govt. promotes manufacturing

- \$182 Mn incentive by Govt. to promote manufacturing of 53 critical KSMs & APIs
- \$455 Mn financial assistance to Telangana Govt's proposed pharma city

THE SUCCESS OF PHARMA INDUSTRY HAS BEEN DRIVEN THROUGH A NETWORK OF ANCILLARY PARTNERSHIPS

Non-Exhaustive



1 – Active Pharmaceutical Ingredient | 2 – Key Starting Material | 3 – Polyethylene | 4 - Polyvinylchloride

Source: Accenture Research and Industry Reports

MSME PLAYERS HAVE SIGNIFICANT SALIENCE IN THE ~\$9 BN ANCILLARY INDUSTRY



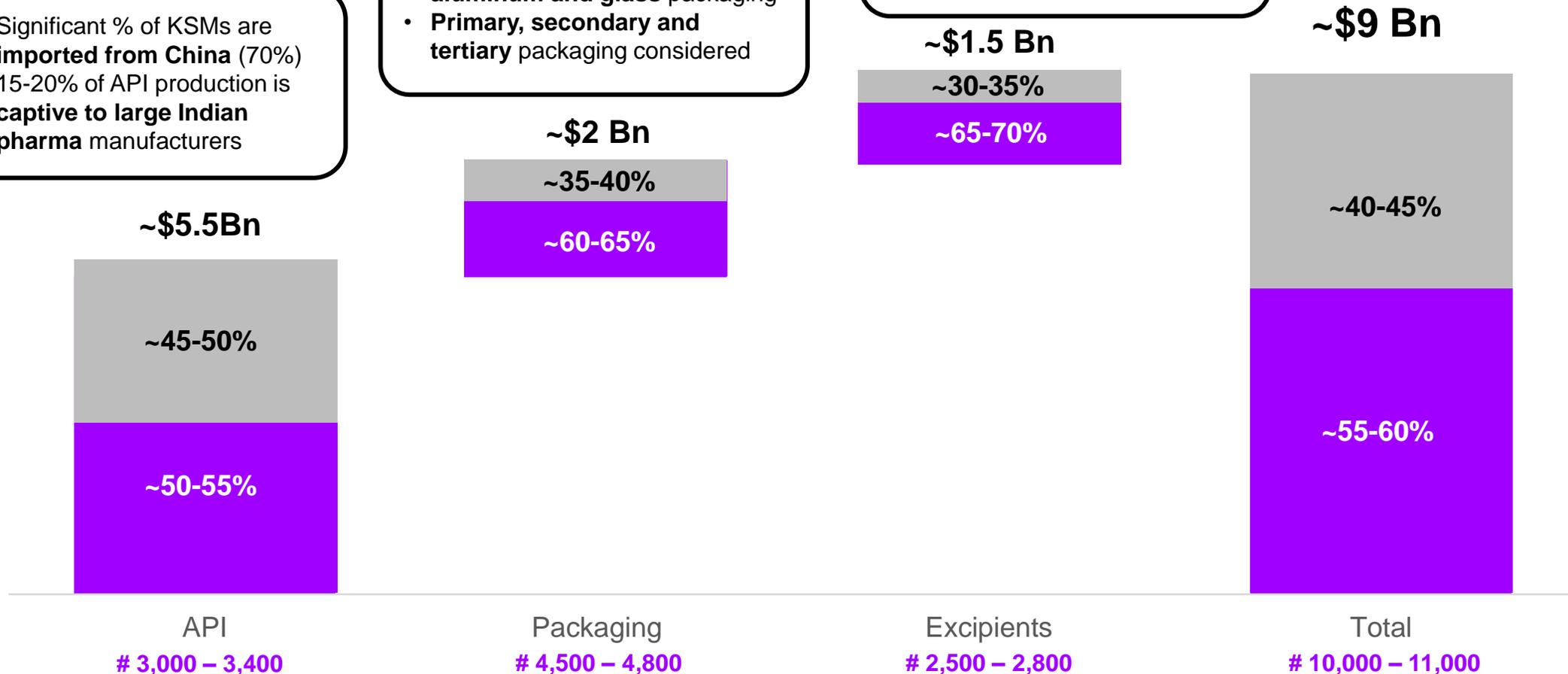
- Significant % of KSMs are **imported from China (70%)**
- 15-20% of API production is **captive to large Indian pharma** manufacturers



- Includes **plastic, paper, aluminum and glass** packaging
- **Primary, secondary and tertiary** packaging considered



- Comprises of **excipient, chemical and solvent** companies
- Large manufactures **supply to a variety of industries**

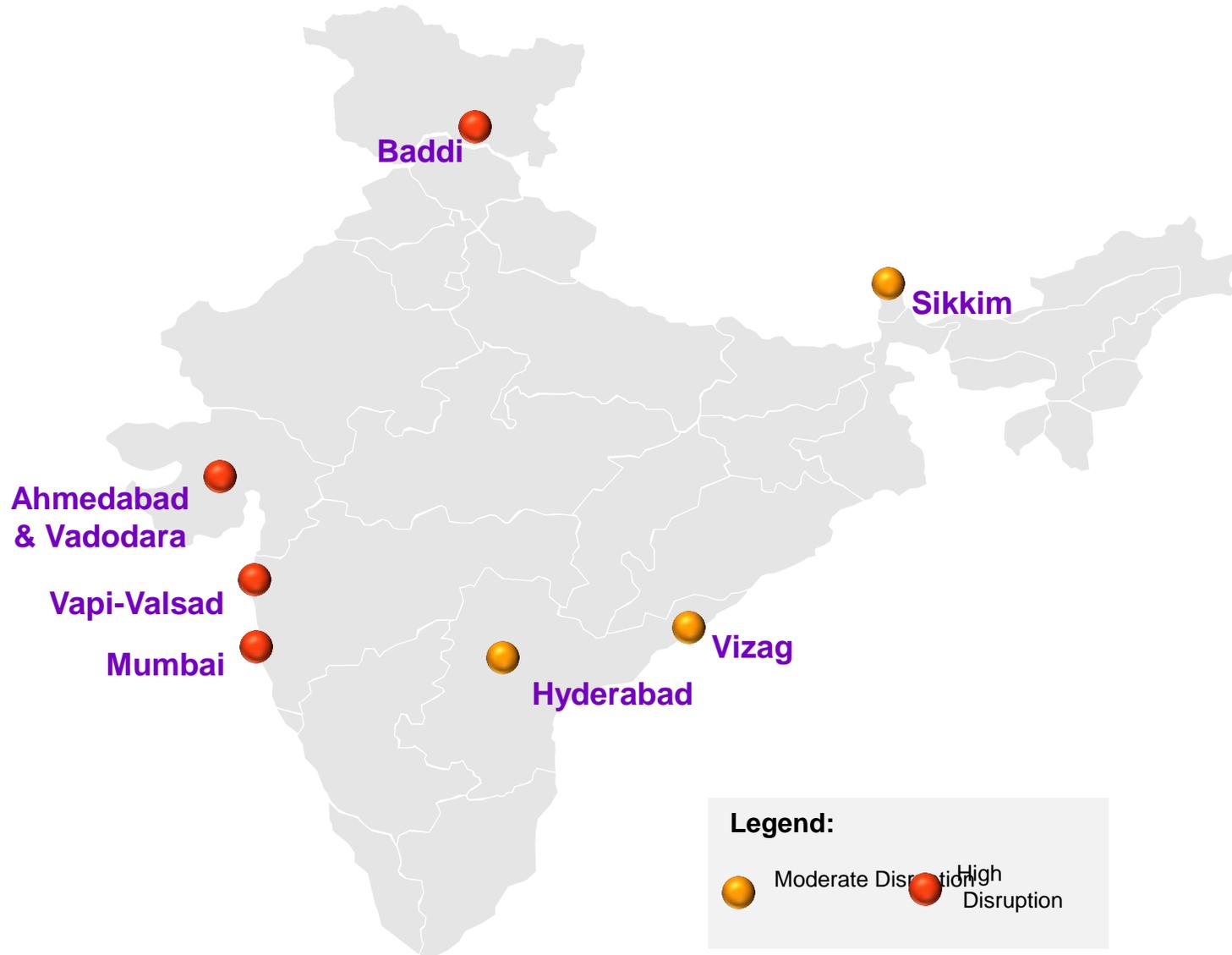


\$Bn - Market Size | # - No. of MSME Units | ■ MSME Salience | ■ Large ancillary salience

Note: MSME is defined as companies with annual revenue <100 Cr

Source: Accenture Research, Pharmexcil, IBEF, CRISIL and Industry Reports

ACROSS CLUSTERS, THE COVID PANDEMIC HAS LED TO WIDESPREAD DISRUPTIONS IN THE ANCILLARY INDUSTRY



Challenges faced by ancillaries



Manpower Availability



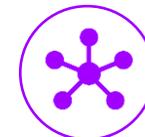
Logistics Disruptions



Raw Material Shortage



Financial Distress



Disruption in 3rd Party Services



Delivery Pressure from Customers

CHALLENGES FACED BY ANCILLARIES



A MULTITUDE OF FACTORS HAVE BEEN RESPONSIBLE FOR THE DISRUPTION CAUSED BY COVID-19 LOCKDOWN

What are the current challenges faced by your company?



Impact on **movement and fear for safety** is causing labor shortage across blue collar, white collar and 3rd party workforce



Challenges around **availability, permissions and load adherence** for fleets and clogged sea-ports have resulted in major disruptions



Constrained operations of starting material suppliers has impacted supplies. Inventories are helping manage the current shortfall



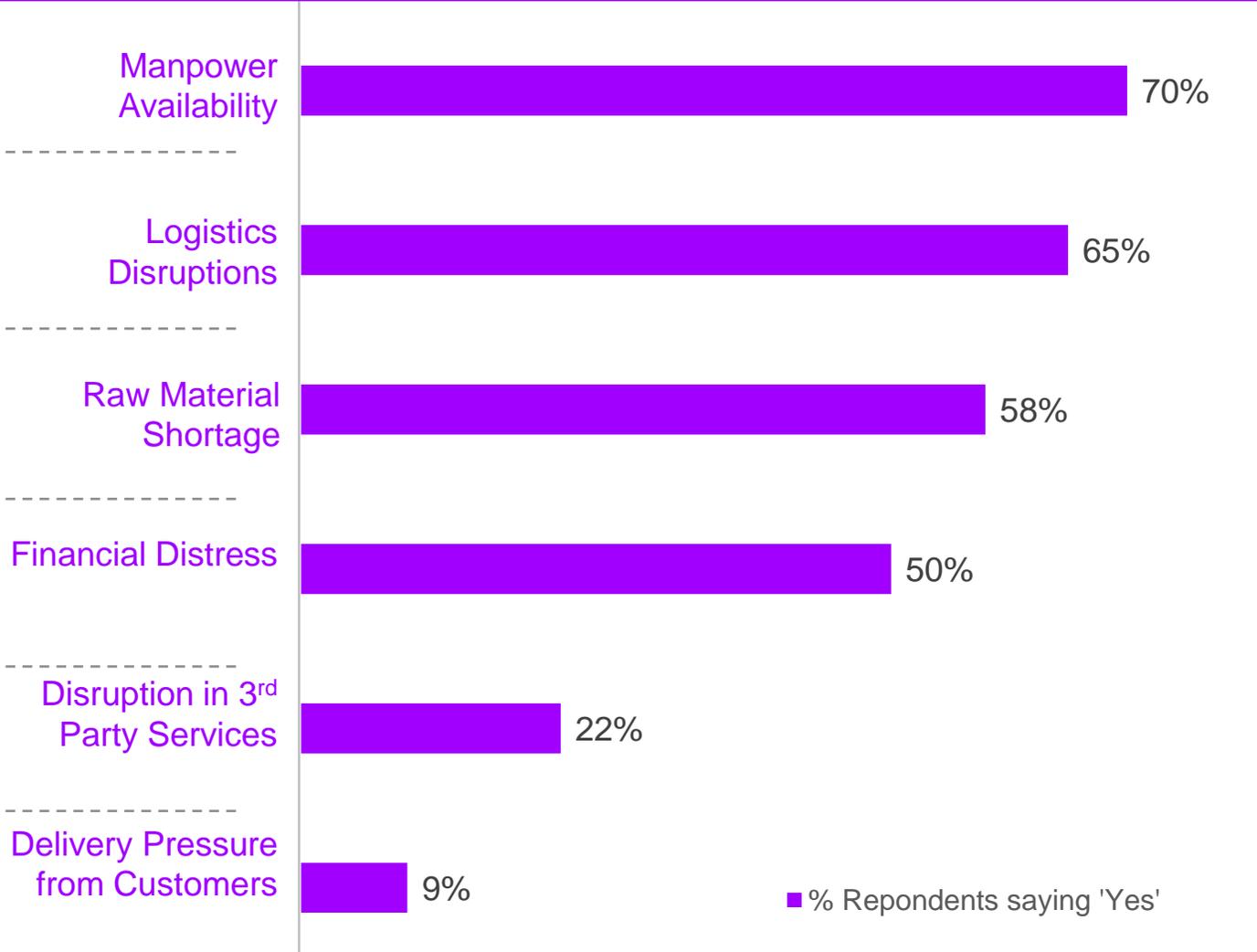
Impact on **inventory turnover, payable days, receivables & increased input costs** are creating financial distress specially for smaller players



Challenges around 3rd party services like engineering and courier services were limited



Pharma companies have been cooperative in case of stretched delivery timelines



■ % Repondents saying 'Yes'

Note: Respondents could choose more than one factor

Source: Primary Interviews

EACH OF THESE CHALLENGES ARE DRIVEN BY MULTIPLE FACTORS WITH SOME INDUSTRIES AND CLUSTERS SHOWING A HIGHER IMPACT



Manpower Availability

- **Restricted movement** due to lack of public transport and unclear communication to ground authorities, along with **fear for safety** has resulted in constrained manpower availability
- While **packaging companies** are impacted due to low automation, **API players** are constrained by their dependence on skilled labor
- **Clusters like Baddi & Daman** with greater need for interstate movement are facing higher manpower shortage



Logistics Disruptions

- Issues with **truck and trucker availability** due to high absenteeism, **FTL¹ adherence** for material delivery, and not receiving **transport permissions** are disrupting surface transport
- **Clogged sea ports** due to limited availability of workforce are causing delays in shipment delivery
- With a **low degree of co-location** with customers, **API players** are more adversely affected due to logistics constraints while packaging companies are able to manage well



Raw Material Shortage

- The RM vendors of the ancillary companies have been impacted by **operating constraints, absence of operating permits** and **lack of sufficient orders**, leading to RM shortages. However, current requirements are being managed through inventory
- The **situation might worsen** in the future once as inventory levels deplete
- Critical starting materials which are industry agnostic are likely to become **bottlenecks** if production does not start soon



Financial Distress

- **Reduced inventory turnover and payables** along with **stretched receivables** have led to a high working capital burden on ancillaries
- **Smaller players** are currently **more vulnerable** to this burden, given that their working capital cycles were already stretched even before the lockdown
- To add to working capital woes, lower utilizations coupled with higher cost base are expected to cause **severe financial distress for MSMEs**

1 – Full Truck Load

WHILE SOME CHALLENGES ARE GETTING RESOLVED WITH LOCKDOWN RELAXATIONS, CERTAIN ASPECTS REQUIRE URGENT ACTION



Manpower Availability



Local labor availability will improve. However migrant labor shortage is likely in select clusters as respective State Governments facilitate their return



Logistics Disruptions



With lockdown relaxations, interstate movement and truck availability is improving. However, unclogging of sea ports is likely to take longer to resolve owing to workforce constraints



RM Shortage



Supplies are improving as increasing number of suppliers re-start operations. However, there might be a momentary dip due to inventory run-outs and high supply lead times



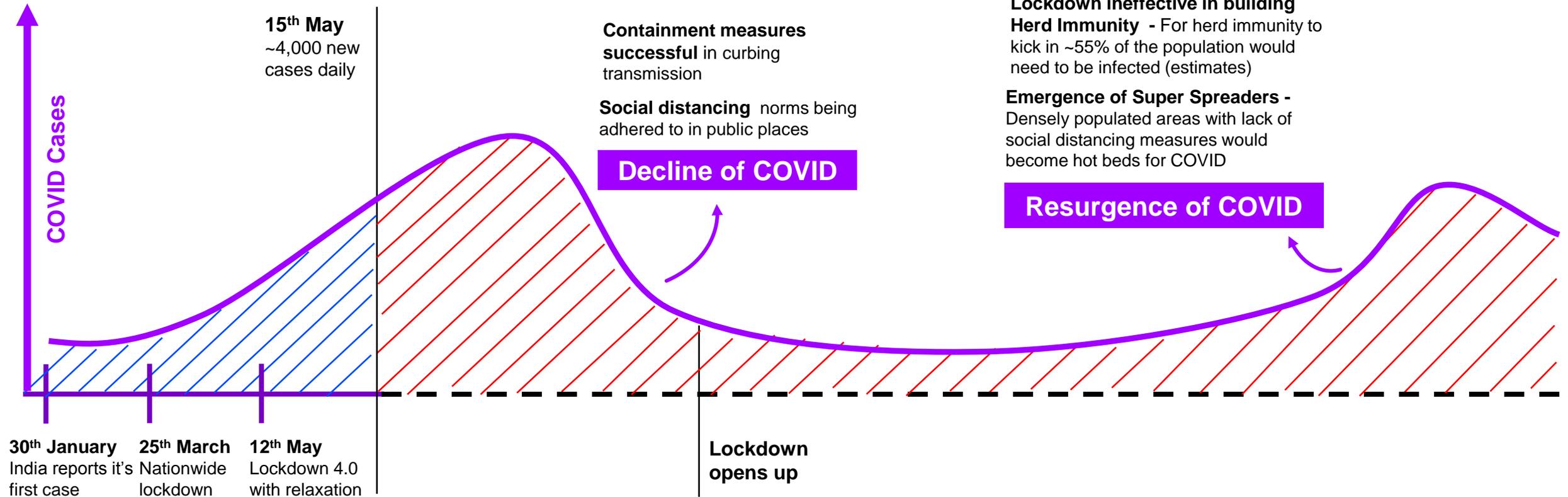
Financial Distress



Working capital benefits proposed by the govt. might get offset due to higher input costs & low utilization. An effective mechanism to ensure benefit disbursal to MSMEs is required



EPIDEMIOLOGY SUGGESTS THAT A RECURRENCE OF COVID-19 IS IMMINENT...



Likely recurrence of COVID in Wuhan

After a 35-day streak of no cases, 6 new cases of COVID were reported from a residential compound sparking fears of a second wave, leading to the government mandating testing for all residents of Wuhan

...HOWEVER, KEY QUESTIONS PERTAINING TO UNDERLYING CAUSES OF THE CHALLENGES REMAIN UNANSWERED

CHALLENGES FACED BY ANCILLARY PLAYERS



Operating Constraints
No operating permits



Lack of sufficient orders



Restricted movement of manpower



Transport permissions



Operating Constraints

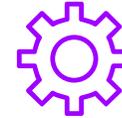


Fear for safety
Depleted labor pool



Trucker availability
Clogged sea ports

UNDERLYING CAUSES & UNANSWERED QUESTIONS



Definition of Essential
Goods

How do we ensure that the essential goods are comprehensively defined in a way to ensure operating permission from Day 1 ?



Loss in Translation

How will the govt. ensure that communication to ground authorities leaves no room for ambiguity ?



No route of escalation

Whom do companies reach out to for resolving issued related to permissions & stoppages?



Lack of communication
to alleviate public fear

Within the people in authority, who is responsible for reaching out to the masses to give them the confidence that it is safe to travel to work?

FURTHER, THE COVID CRISIS AND ITS IMPLICATIONS HAVE **AMPLIFIED CERTAIN STRUCTURAL RISKS** FOR THE PHARMA INDUSTRY



Triggers



Risks



DEPENDENCE ON IMPORTS FROM A SINGLE GEOGRAPHY

The pharma ancillary supplies for both API/ KSMs (~70%) and capital equipment (~50%) have **significant dependence on China**. Hence, supply chain disruptions could have been worse.

When such a scenario recurs, we would once again be **significantly underprepared** to deal with it since this challenge has not been resolved



INCREASED COSTS TO COMPLY WITH NEW WAYS OF WORKING

With new ways of working, **companies will have to adapt** to operating with social distancing and reduced manpower to ensure safety. This will result in the players incurring **additional costs**

There will be a **severe impact on productivity and cost structures of MSMEs** amongst ancillaries, which will impact the industry competitiveness

RECOMMENDATIONS



WE PROPOSE **SIX RECOMMENDATIONS** TO ENSURE THAT THE INDUSTRY RECOVERS RAPIDLY AND EMERGES STRONGER THAN EVER



accelerate
RECOVERY

Next 3 months*



build
RESILIENCE

Next 6 months*



invoke
RENAISSANCE

Next 1-2 years*

1

Deliver **financial relief** to ancillaries

3

Develop robust **disaster management capabilities**

2

Enable **safe return** of workforce

4

Create an ecosystem to promote **trust and transparency** among all industry players

5

Reduce reliance on imports from a single source

6

Ensure competitiveness of ancillaries in the new normal

* Indication of the time by which these recommendations should be implemented completely



THE CENTRAL GOVERNMENT HAS ANNOUNCED **RELIEF PACKAGES FOR MSMEs** WHICH IS LIKELY TO EASE THEIR FINANCIAL DISTRESS



The Indian Government has announced the provision of a fiscal relief package for MSMEs



Support on working capital extension and relief on other costs can also ease the distress

➤ 3 Lakh Crores collateral - free automatic loans for MSMEs

- The government has extended an **emergency collateral-free credit line of up to 20% of their outstanding credit** (as of February 29) to MSMEs with loans of up to Rs 25 crore outstanding and turnover of up to Rs 100 crore
- The loans will **have a 4-year tenure with 12 months moratorium** on principal repayment. Interest is to be capped
- **100% credit guarantee cover to banks and NBFCs** on principal and interest which should enhance the flow of funds from banks to NBFCs to MSMEs and help alleviate near-term liquidity pressures

➤ 20,000 Cr subordinate debt for stressed MSMEs

➤ 50,000 Cr equity infusion for MSMEs through fund of funds

However, the Govt. needs to ensure that there is a mechanism in place for **effective disbursement of the proposed interventions & availability of loans to smaller units in the MSME space**

- Provide **tax subsidies** along with **refund policies & reduction in GST**
- Administer **relief on electricity bills up to 10% on the fixed expenses** for a period of 6 months, thus allowing companies to pay only basis consumption
- Provide **direct wage support / subsidy package** or extend loan support for paying wages for the next 3-6 months at a concessional rate of interest
- Announce **moratorium on all statutory payments** such as ESI, PF and gratuity payments for the next 6 months to all MSMEs up to a pre-defined turnover limit. (Under PMGKY, the current threshold for giving relief (up to 100 employees and 90% employees with < ₹ 15000 monthly wage) can also be relaxed as entities in API/KSM industries are marginally overshooting these limits).

Ownership:



Government



PROVIDING ASSURANCE TO MIGRANT WORKERS AND IMPLEMENTING WORKER SAFETY PROTOCOLS IS ESSENTIAL TO ENSURE A SECURE RETURN TO WORK



Need to communicate with, and convince migrant labor to return

- Employers and government have to work in tandem in order to assuage concerns on:
 - **Safety of life:** Checks and balances for personal safety
 - **Safety of employment:** Guarantee & security of employment on work resumption
- Ancillary manufacturers need to be given clear guidelines on pre-emptive measures with implementation support from authorities
- To assuage the concerns around medical treatment, access to health insurance schemes may be necessary. Ayushman Bharat, which covers COVID testing and treatment under their umbrella, will be an ideal instrument. If required, some criteria in relation to individuals who are not entitled to avail of the scheme can be relaxed by the Government as a one-time dispensation

Conviction in safety measures can be established through:

1. **Robust SOPs** for disinfection and quick resumption of operations
2. **Use of technology** to monitor employee and workplace safety and compliance – safe distancing and contact tracing



Ownership:



Ancillaries

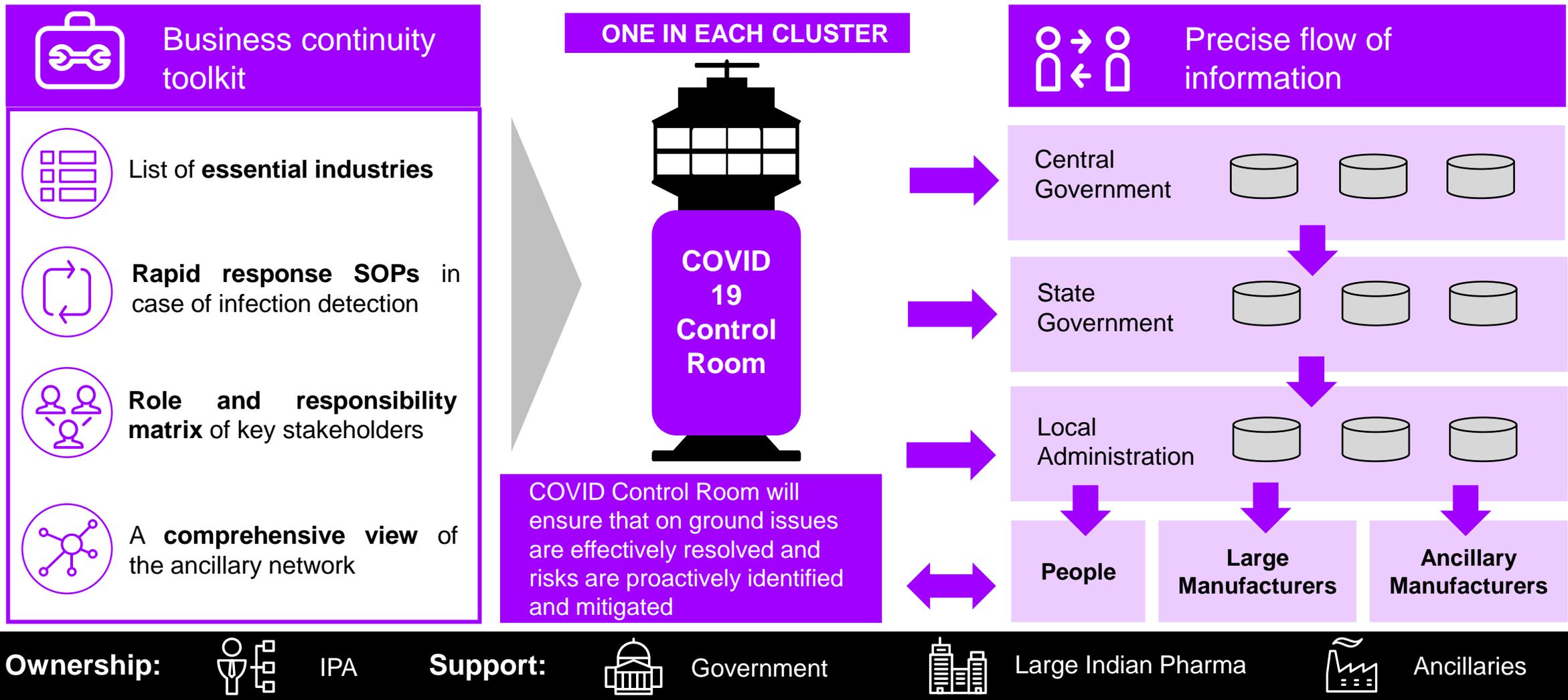
Support:



Government



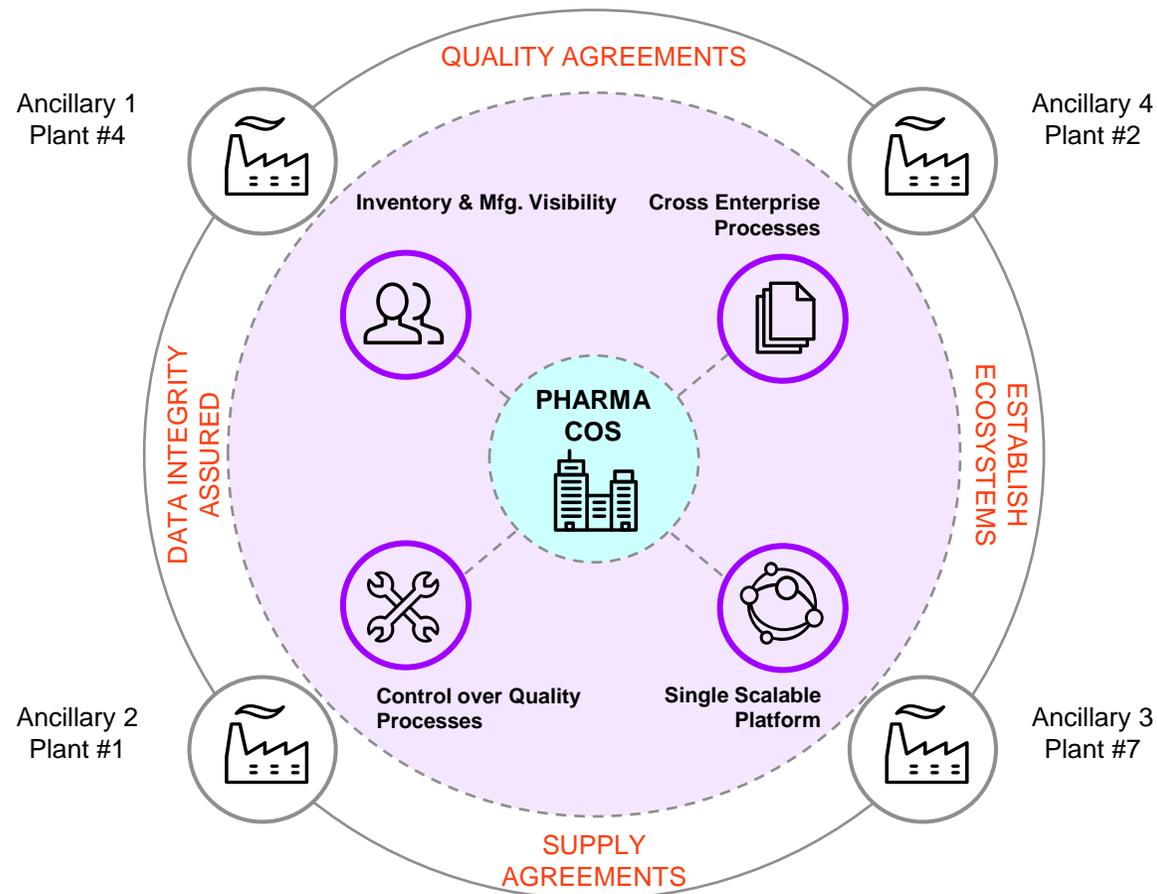
A ROBUST DISASTER MANAGEMENT CAPABILITY WILL LEVERAGE LEARNINGS FROM PAST DISRUPTIONS WITH A CONTROL TOWER AT THE NERVE CENTRE



Ministries / Departments



A CROSS-INDUSTRY COLLABORATION PLATFORM WILL DRIVE GREATER VISIBILITY IN THE ANCILLARY VALUE CHAIN TO PROACTIVELY IDENTIFY SUPPLY RISKS



Collaboration and Risk Management

Transparency resulting from regular exchange of information has many advantages for across the value chain



Collaboration

Knowledge sharing creates a climate of trust between players in the chain

Supply Chain Map



Risk Dashboard



Risk Mitigation Plans



Risk Management

Real-time control and monitoring helps identify potential threats and resolve them before the impact

Ownership:



Large Indian Pharma

Support:



IPAs



Ancillaries



REDUCING RELIANCE ON IMPORTS FROM A SINGLE GEOGRAPHY WILL HELP MANAGE SUPPLY DISRUPTIONS

For strategic APIs, Govt. could provide plug-and-play infrastructural support in dedicated zones

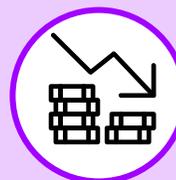
Planning

- Identifying strategic APIs for local sourcing, which are:
 - APIs with future potential- to provide future scale of production
 - APIs where India has strong development and manufacturing skills
- Identify large dedicated clusters for operating manufacturing plants – such clusters could be situated next to ports, KSMs

Execution

- Extending pre-approval of environmental clearance and easing other regulatory clearances (like simplifying the license renewal process)
- Setting up common utilities such as solvent recovery and distillation plants, power and steam units, effluent treatment plants, etc., to make smaller units economically viable in these zones
- Lowering costs of borrowing to set up a plant in these API hubs/SEZs through tie-ups with multilateral financing agencies
- Embedding strong research based linkages to continuously innovate to improve process technologies (e.g., yield improvement)

CHINESE GOVERNMENT'S INITIATIVES TO DRIVE API GROWTH



Lower borrowing costs
5%-7%



Lower labor & electricity costs
11 US cents/kwh



Lower logistics costs
1% of expenses



Clusters in the close proximity of starting materials
E.g. Petrochemicals

15% y-o-y growth of industry

5x increase in API manufacturers in 5 years

Multiple sources for capital equipment: Look beyond China at countries like South Korea, Malaysia and Taiwan to develop alternate suppliers

Ownership:



Government

Support:



Ancillaries



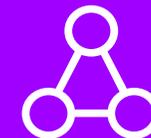
MENTORSHIP/KNOWLEDGE SHARING WILL ENABLE ANCILLARY COMPETITIVENESS

Industry bodies and Large Indian Pharma companies can come together to support ancillary manufacturers



MENTORSHIP

Access to frugal innovation – Help MSMEs access innovative ecosystem players with solutions in the space of ‘safe operations’
Support innovation in a viable manner through demand aggregation



Sourcing assistance - Aggregate demand across ancillary manufacturers of a similar kind and negotiate better with the source



Better payment terms – Ensure that payments terms across the chain are improved to enable efficient payments cycles and sufficient flow of working capital



Price increase – Persuade pharma companies to accept price hikes wherever required factor inputs justify the same



COMMERCIAL ACUMEN

Ownership:



IPA

Support:



Large Indian Pharma



Ancillaries

OVERALL, CONCERTED EFFORTS ACROSS PHARMA AND ANCILLARIES, GOVERNMENT AND THE IPA WILL BE NECESSARY TO IMPLEMENT THE RECOMMENDATIONS



Government



IPA



Large Indian Pharma



Ancillaries



1 Deliver **financial relief** to ancillaries



2 Enable **safe return** of workforce



3 Develop robust **disaster management capabilities**



4 Create an ecosystem to promote **trust & transparency** among all industry players



5 Reduce **reliance on imports** from a single source



6 Ensure **competitiveness of ancillaries** in the new normal



Ownership Support

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APPENDIX 1 - LIST OF RELEVANT ANCILLARIES CLASSIFIED AS ESSENTIAL



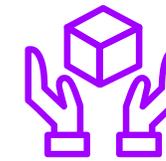
MANUFACTURING RELATED

1. API Manufacturing Units
2. Glass Bottle making plants
3. Suppliers of Chemicals, industrial gases, diluents or fillers, binders or adhesives, disintegrants, lubricants, glidant
4. Raw Material Suppliers (KSM, Solvent, colors, flavors, coating materials and excipients)
5. All packing materials viz, foils both plain & printed; cartons, DFC boxes, fiber drums, HDPE DRUMS, stereo and ink for the same, printed label etc.
6. Plastic & Flexible packaging Units
7. Aluminum Foil and caps manufacturing Units
8. Laboratory chemicals and equipment such column etc. required for QC testing
9. Machine Fabrication and Maintenance Services; Spares Service Provider
10. Technical service providers – for Qualification, Validation, etc.
11. Effluent Treatment Services Provider; Hazardous Waste disposal
12. PVC fills and Plastic bottles PET and PPHDPE
13. Briquette
14. Safety Equipment suppliers
15. Ancillary units like recovered solvent recyclers
16. Industry scrap dealers, processors



SUPPLY CHAIN RELATED

1. Printing units for pharma inputs; Label printing units
2. Ancillary units for printing industry like plate makes, etc.
3. Private Pharma Testing Labs (in Hyderabad) who specialize in critical testing
4. Thermocol box manufacturing units & Ice Gel pack units required for cold chain products.
5. Truck Agencies
6. Paper and Cardboard manufacturing units for packaging
7. Transport services for inbound RM/PM and outbound Finished Goods
8. Carriage and Forwarding Agent (CFA) operations
9. Temperature and Refrigeration equipment & services



SUPPORTING INDUSTRIES

1. Transport Companies (for carrying workers to Plants and back)
2. Service providers of Boilers, Compressors, Stability Chambers
3. Service providers of Calibration of Instruments, HPLC & GC Columns
4. Service providers of clean room equipment
5. Courier Services

APPENDIX 2 - SWIFT ACTION COUPLED WITH FINANCIAL SUPPORT WERE KEY TO **EARLY RECOVERY OF CHINA'S INDUSTRY**

<p>Challenges</p>	<ul style="list-style-type: none"> ➤ Govt pushed industries to operate and meet the requirements; industries were unwilling due to manpower issues ➤ Price Increase – Increase in cargo charges and input raw material cost by 5-10% ➤ Exports – Air shipments were a major challenge while sea shipments were streamlined ➤ Key pharmaceutical activities such as site inspections/certifications halted 			
<p>Key Interventions</p>	 <p>Financial Support</p>	<ul style="list-style-type: none"> • Fiscal policy and flexible monetary policy for supporting companies to raise money and get loans • Policies to help SMBs¹, such as halving VAT, allowing the SMBs exemption from, reduction in or deferral of payment of social insurance, tax refund policy, etc. • Reduced interest rates from 4.5% to 1.5%, offered subsidized loans to SMEs, postponed principal and interest loan repayment from Jan 25 to June 30, 2020 • Govt. support to be able to defer and reduce essential costs like trimming electricity charges by 5% 	 <p>Manpower</p>	<ul style="list-style-type: none"> • Arranged chartered transport and offered allowances to bring migrant workers from provinces with surplus • Subsidized pickup and drop off of migrants • Waived health insurance cost • Instituted flexible work hours
	 <p>Logistics</p>	<ul style="list-style-type: none"> • Natural advantage due to presence of large cluster areas leading to high co-location with suppliers • Transport system well-organized and predictable 		
	 <p>RM</p>	<ul style="list-style-type: none"> • Coordinated local raw material and accessory resources for supply channels • Promoted cross-city collaboration as needed 		
<p>Recovery of industries (as on March last week):</p>	<ul style="list-style-type: none"> ➤ 99% work resumption rate for large enterprises outside Hubei (95% in Hubei) ➤ 92% work resumption rate for all government-owned firms ➤ 77% Work resumption rate for small and medium enterprises outside Hubei 			

APPENDIX 3 - LIST OF REFERENCES FOR SECONDARY RESEARCH

Industry Facts and Figures

- IBEF
- Make In India
- Department of MSME
- IQVIA
- GBRE
- Medbelle Research
- IPA
- CRISIL
- Invest India
- The Economist
- News Reports
(The Print, News 18, Bloomberg, The Wire)
- Pharmexcil , ExpressPharma and PharmaBiz

China Insights

- Working Papers by Chicago Booth Review
- Working Papers by Tsinghua University
- China State Council Department Website
- News Reports
(China Briefing, Xinhua News, China News Service)

COVID Epidemiology Trends

- World Health Organization
- World Economic Forum
- News Reports
(Wall Street Journal and Forbes)
- National Institute of Allergy and Infectious Diseases

Monetary Incentives by Governments

- News Reports
(Forbes, CNBC, Jakarta Post and ASEAN Briefing)
- US Small Business Administration
- Official website of the United Kingdom Government
- British Business Bank
- Government of Canada (Department of Finance)
- Australian Government Department of Business
- Government of Singapore
- Dezan Shira and Associates
- German-Indonesian Chamber of Industry and Commerce

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