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Cutting-Edge Tech Forging India as a Software Product Nation

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Shri S. Krishnan Secretary Ministry of Electronics and Information Technology The ra

The rapidly changing world of technology places India in a pivotal position. India's global recognition is no longer limited to "IT services" but the country is emerging as a strong player in software product innovation. As we chart our journey toward becoming a formidable player in software products, it is imperative to harness cutting-edge technologies and explore sectors where India can leverage its existing strengths to propel growth.

To harness India's true potential in the creation of software products, concerted efforts are being made to create a conducive environment. The infrastructure created by Digital India, the JAM trinity, India Stack, and the wave of startups coming out of the Startup India initiative has spurred a paradigm shift towards verticalizing of technology across industries. Indian software products nowadays cater to niche industry demands and the focus is now on design and creation of IP.

The National Policy on Software Products (NPSP) announced in 2019 was intended to play a pivotal role in aligning government efforts with industry aspirations with STPI playing a key role. NPSP 2019 has helped to nurture a vibrant Software Product Industry, foster startups, encourage R&D, and enhance access to capital but there is much more to be done, and huge potential lies untapped.

The Knowledge Report "Innovation Overdrive: Cutting-Edge Tech Forging India as a Software Product Nation" is a compendium of valuable insights, analyzing trends, delving deep into the Indian software products landscape, elucidating the distinct roles of various stakeholders and outlining the competitive landscape of product players, both domestically and internationally. I expect this report to be the single significant resource relating to the past, present and future of the Indian Software Products Ecosystem and believe that it will empower all stakeholders to contribute constructively towards the goal of making India a Software Product Nation.

I congratulate the STPI team for bringing out this insightful report at an opportune time.





Shri Arvind Kumar Director General Software Technology Parks of India With each passing day, technology is impacting human lives more & more. Software & hardware are getting more & more tightly coupled and distinction between a Software Product vis-à-vis Service is blurring.

The growth trajectory of the Indian software product industry is influenced by several pivotal factors. Among these are the accelerating pace of digital transformation, vertical specialization, the rising demand for DeepTech products, the rapid adoption of SaaS and the supportive regulatory provisions.

Currently valued at approximately US\$ 14.2 billion, the Indian software product market encompasses over 4,500 companies, buoyed by the widespread embrace of cloud-based solutions. This expansion is additionally driven by the growing acceptance of software products across various business scales, including small and medium-sized enterprises, alongside community adoption at diverse levels. Moreover, key sectors such as industrial, automotive, healthcare, agriculture, and BFSI are expected to drive over 60% of the AI-driven value in GDP by FY26, further underlining the immense potential of the software product industry. It is estimated that the AI adoption alone will add \$500 billion to India's GDP by 2025.

The global software product industry is witnessing a surge due to the advent of emerging technologies, and Indian enterprises and startups are well-positioned to capitalize on this trend. Indian software product companies enjoy distinct advantages, including adequate availability of world-class talent locally and cost and value arbitrage resulting from competitive pricing. The growth of the IT/ITes sector and a vast reservoir of skilled professionals augur well for the growth of the software product creation from India.

This Knowledge Report serves as a testament to the vibrant ecosystem of innovation and entrepreneurship in the Indian software product industry. I am confident that the insights presented herein will strengthen our strategic initiatives aimed at further propelling India as a global leader in software product innovation.





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Dr. Devesh Tyagi Senior Director Software Technology Parks of India Today the world is witnessing profound impact of emerging technologies like never before. The innovations are not only shaping the software product landscape but also redefining the way we perceive and interact with technology.

This Knowledge Report delves into the distinction between software products and services, emphasizing their unique characteristics and roles within the industry. While software products are tangible entities with a longer life cycle encompassing various stages from conception to release, services provide essential support and customization, albeit with scalability challenges.

It is essential to recognize that the software product industry plays a crucial role within the broader IT/ITeS ecosystem. With growing awareness, industry leaders are paving the way for innovation and entrepreneurship in this domain. At STPI, we take pride in spearheading developmental initiatives aimed at fostering leadership engagement and technological innovation, particularly in Tier II/III towns of India. By collaborating with tech pioneers and providing support to startups and budding entrepreneurs, we are laying the foundation for a vibrant ecosystem capable of delivery innovative software products.

The emergence of unicorns in the software product space has provided a significant boost, driving innovation and redefining industry standards. Moreover, the recent emphasis on coding culture among Indian developers has fuelled open-source development, leading to collaborative innovation, customization, and cost-effectiveness.

I extend my congratulations to the STPI team for their collaborative efforts in compiling this report, which I believe shall serve as a valuable resource for individuals, startups, industries, academia, and policymakers.







#### Shri Rakesh Dubey Additional Director Software Technology Parks of India

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This Knowledge Report "Cutting-Edge Tech Forging India as a Software Product Nation" underscores STPI's unwavering dedication to fostering awareness, knowledge sharing, and information dissemination across the entire Technology Ecosystem.

The focal points of India's Software Product Nation initiative encompass policy emphasis on software products, collaboration for product R&D, skill development, and catalyzing the growth of product-based startups. As India embarks on this journey towards excellence and innovation, it needs to seize the opportunities that lie ahead. India needs to harness its collective strengths to propel itself to the forefront of global leadership in software product innovation.

The Knowledge Reports takes a deep dive into Software Product creation, exploring various sectors, domains, technologies, government policies, and initiatives. It delves deep into the product landscape, providing a comprehensive analysis of trends, current status, growth drivers, challenges, and opportunities. This report should serve as a practical resource for startups, corporates, policymakers, government departments, funding agencies, investors, academia, research institutes, and all other stakeholders within the tech product ecosystem.

I believe this report to be a valuable resource for one & all and congratulate the entire team for bringing it to fruition.





Section No.	Table of contents	Page No.
1	Executive Summary	
2	Software Product Market Overview	
2.1	Definition of software products	10
2.2	Categorization of software products	11
2.3	Current market scenario of Indian software products	12-13
2.4	Global software product market snapshot	14
2.5	Market trends for global software products	15
3	Deep Dive into the Indian Software Product Market	
3.1	Market evolution	17-18
3.2	Market opportunities	20
3.3	Key growth drivers	21
3.4	Core challenges	22
3.5	What is going well?	23
3.6	What is not going well?	24
4	Policies and Regulatory Framework Analysis	
4.1	Overview on National Policy on Software Products (2019)	26
4.2	Role of NASSCOM	27
4.3	Role of iSPIRT	28
4.4	Success factors and limitations in the regulatory framework	29
4.5	Global regulation comparison	30
5	Way Forward	
5.1	Key focus areas for the way forward	33
5.2	Action points of the key focus areas	34-37
6	Case Studies	
6.1	Country case study: United States	39
6.2	Country case study: Israel	40
6.3	Company case study: Tally Solutions	41
6.4	Company case study: Zoho	42
6.5	Company case study: Freshworks	43

## **Executive summary (1/2)**





### **Software Product Market Overview**

- Global software product market is anticipated to reach ~US\$ 0.8-1T in FY23, and projected to surge to US\$ 1.7-2T by FY27; USA significantly contributes to the majority revenue (>30%)
- Software product industry is experiencing notable trends, including an **increase in verticalized software products**, and widespread adoption of **DeepTech-based software products**
- Industry landscape is shaped by a notable emphasis on **AI-based** technologies, coupled with the increasing significance of customized solutions for **SMBs**
- Emerging technologies such as DeepTech, AI and open-source products are influencing the software product landscape
- Indian software product industry, which is a part of the IT / ITeS sector, presents a vibrant landscape with active participation from both **indigenous firms** and **Global Capability Centers (GCCs)** from various countries
- Indian software product market, comprising over 4,500 companies driven by the widespread adoption of cloudbased solutions, is poised for growth, with an estimated revenue of ~US\$ 14.2B in FY23
- Indian software products' demand is driven by global players which are its predominant consumers (~90%)

## Deep Dive into the Indian Software Product Market (1/2)

- Indian software product industry is 30 years young, driven by twin forces of widespread **cloud computing** and escalating **adoption trends**
- India can position itself as a global leader in software products by **exploring new markets** and **technologies**, **identifying** new industry use cases, and **expanding** its reach beyond India
- Industry's dynamic growth landscape is shaped by several key drivers, including a surge in **adoption** of SaaS products, widespread **digital acceleration**, verticalization, growing demand for **DeepTech** products, and supportive government policies



## **Executive summary (2/2)**





## Deep Dive into the Indian Software Product Market (2/2)

- Indian software product industry faces significant **challenges**, including a lack of a product-focused mindset, skill mismatches, intricate regulatory compliance, funding obstacles, and insufficient digital literacy
- Indian software product industry is **advancing** due to initiatives such as Startup India and Digital India, talent retention through Global Capability Centers (GCCs), the momentum in open-source development, and verticalization
- To **stimulate further industry growth**, it is crucial to incentivize demand, optimize monetization strategies, ensure proper recognition of software products, and effectively implement Indian Software Product Registry (ISPR)
- Foreign direct investments (FDIs), tax benefits incentivization, and data protection regulations are among the key **success factors** in the **regulatory framework**; while **challenges** include IP infringement laws, disbursement of funds from Software Product Development Fund (SPDF) & other sources, and companies choosing to incorporate abroad

## **Way Forward**

- Develop targeted policies for the software product industry
  - Aggregate and incentivize domestic product demand
  - Prioritize the supply of innovative products
  - Improve the overall ease of doing business in the sector
- Promote collaborative product R&D
  - Cultivate an innovative culture and emphasize on the creation of intellectual property
  - Encourage active participation by stakeholders in the commercialization of R&D efforts
- Instill a product-centric mindset
  - Bridge skill gaps between industry and indigenous talent pool through skill development programs, more hackathons, company-specific certification programs, and curriculum updates
- Catalyze the growth of product-based startups
  - Focus on directing efforts to encourage targeted funding for software product startups
  - Leverage industry associations to play a pivotal role in promoting Indian software products startups

## Agenda

# Software product market overview

Definition of software products

Categorization of software products

Current market scenario of Indian software products

Global software product market snapshot

Market trends for global software products

What is not going well?

## **2.1 Definition of software products**



Software products are tangible, licensed programs or applications whose installation or usage instances are counted, while services are intangible solutions providing support, maintenance, or additional functionalities

SOFTWARE PRODUCTS	SOFTWARE SERVICES
<b>Output</b> of the software development process (p designing, product development, maintenance & supp the form of a program or application	broduct bort) in Wide range of offerings that support the deployment, upgradation, management, and maintenance of software products
Provides foundation upon which software services are delivered	Examples include integration, customization, or cloud-based services related to software products
Longer lifecycle involving the stages of idea conception, design, development, testing, & release; <b>Supported by software services</b>	Lifecycle Shorter lifecycle with continuous smaller cycles of deployment, operation, monitoring, updates, and ongoing support of software products
Functionality and features through design and development	Value addition         Addition of supplementary value by optimizing, maintaining & customizing software products
Requires expertise in <b>product designing</b> , <b>development</b> , <b>maintenance</b> along with creativity & technical proficiency	Skill set requirement Requires specialized expertise in areas like integration, support systems and customization
Have scalability advantages due to higher standardization, scale in distribution, and advent of self-service models	Scalability Broadly less scalable due to personalization and manpower requirements during delivery

## **2.2 Categorization of software products**



#### Software product industry is an integral part of the broader IT / ITeS industry



Note: IT: Information Technology; ITeS: Information Technology enabled Services, BPO: Business Process Outsourcing GCC: Global Capacity Centres, ESDM: Electronics System Design and Manufacturing Source(s): NASSCOM report 2022, Industry reports, 1Lattice analysis

Focus area of the report

## 2.3 Current market scenario of Indian software products (1/2)



Indian software product market is currently ~US\$ 14.2B and consists of 4,500+ companies, fueled by the widespread adoption of cloud-based solutions



## 2.3 Current market scenario of Indian software products (2/2)



# Demand for Indian software products is predominantly fulfilled by global players; DeepTech, AI and open-source products are currently driving market demand

# Key advantages for Indian software product companies



Low cost of tech talent in India

- **Cost arbitrage** created due to lower product pricing as compared to international players
- Value arbitrage created by offering add-on features with main product which are easier to build due to lower talent costs



### Growing ecosystem of startups

- Startup ecosystem is flourishing, leading to increased supply of innovative software solutions
- Healthtech, agritech, and DeepTech are contributing to the demand for specialized software
- India is also witnessing the rise of vertical-focused software product companies like Khatabook (total funding: US\$ 187M) and OKCredit (total funding: US\$ 84.9M)

## Shift from being single to multi-product players

- Indian software product players are shifting to offer a suite of products rather than a single flagship product to improve their value proposition to global clients
- For instance, Freshworks expanded from a single CRM product to offer a range of enterprise solutions and has also acquired companies like Chatimity, Frilp, Joe Hukum to build its Al layer





"Technology access to the last mile is a key pillar as per the Honourable Prime Minister's vision for Amrit Kaal. To enable such last-mile access in our country, we must encourage and cultivate product thinking to truly enable technology creation at scale. We are the world's largest IT services exporter, but we still have a distance to create showcaseable companies in the product domain."

- Tejas Goenka, Tally Solutions

## 2.4 Global software product market snapshot



Global software product market was approximated to be US\$ 0.8-1T in FY23

By FY27, global software product market is estimated to surge to US\$ 1.7-2T USA contributes to majority of global software product revenue

Kou morketo	Proportion of revenue from software products by key global players (%, FY23)							
Key markets	Microsoft	ORACLE	salesforce	Google	IBM	Tencent	SAP	Adobe
United States of America	50%	50%	50%	43%	41%		35%	46%
<b>RoA (</b> Brazil, Canada, Mexico, Argentina, Chile <b>)</b>		12%	13%	11%	10%		9%	11%
<b>EMEA (</b> UK, France, Germany, Israel, Russia, Italy, Netherlands <b>)</b>	50%	25%	14%	29%	30%	9%	42%	27%
<b>APAC</b> (China, India, Japan, Australia, South Korea, Indonesia <b>)</b>		13%	23%	17%	19%	91%	14%	16%
	100%	100%	100%	100%	100%	100%	100%	100%

#### Software product start-ups split by stage and region (%, FY23)



Note(s): RoA: Rest of America, EMEA: Europe, Middle East, Africa; APAC: Asia-Pacific Source(s): Company annual and quarterly reports, 1Lattice analysis

## **2.5 Market trends for global software products**



Rise in verticalized software products, DeepTech adoption in products, SMB-tailored products, and the surge in AI technology characterize the major trends in the global software product industry



#### **Rise in vertical software products**

- Evident demand for **specialized software** in several industries, e.g., in **steel manufacturing** industry, use of AI for furnace operation optimization
- Creates a **need for a skilled talent pool** capable of developing tailored industry products
- >50% software products by 2030 to be verticalfocused



# Growing adoption of DeepTech-based products

- **Rising adoption** of competitive products led by DeepTech among global companies
- Share of DeepTech in software products has grown to reach ~20-24%
- >30% growth in revenue in DeepTech-based horizontal products like HCM, cyber security, etc.
- ~40-60% penetration of DeepTech in software products is expected by 2030



#### **Tailored products for SMBs**

- SMBs increasingly adopt cloud-based solutions, simplified user interfaces, and Al-driven automation
- Industry aims to provide scalable, user-friendly, and cost-effective software products tailored to the specific needs of SMBs



## **Emergence of AI-based technology**

- Al optimizes DevOps workflows and bolsters cybersecurity, enabling efficient threat detection and predictive analysis for improved deployment security
- Industrial, automotive, healthcare, agriculture, and BFSI industries expected to contribute >60% to Al-driven value in GDP by FY26

## Agenda

Deep dive into the Indian software product market

Market evolution

Market opportunities

Key growth drivers

Core challenges

What is going well?

What is not going well?

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## 3.1 Market evolution (1/2)



# The Indian software product industry is 30 years young, driven by cloud computing and increasing adoption of software products by companies



## 3.1 Market evolution (2/2)



Stage of significant VC investments, M&As & IPOs: Freshdesk, Druva, Haptik, and many more companies raised funding while, acquisition of companies like Appirio and ASG Technologies by HCL & Ramco systems respectively took place

Global recognition of Indian products and evolution of start-up ecosystem Launch of 'Start-up India' program promoted the development of **incubators** and **accelerator programs** providing start-ups with the necessary resources Advent of SaaS delivery model made it a preferred alternative to legacy of onpremise products

Transformative technologies like **cloud computing** seized widespread attention and captivated a diverse audience precipitating an **exponential surge** in industry growth (Phase of market entry of **Azure**, **AWS, GCP**) Emergence of unicorns like Innovaccer, Druva and BrowserStack

'National Policy on Software Products (NPSP – 19)', introduced to nurture 10,000 technology start-ups in software product industry -1,000 of them from Tier-II and Tier-III towns & cities by 2025 IPO listings of Indian companies such as Freshworks, MapmyIndia Compelling force of **verticalization** contributes significantly to the steep growth trajectory

Growth 2019 onwards US\$ 4 - 10B+ 2,000+

Progression 2015-2018 US\$ 3 - 4B 1.000+

Industry revenue

Number of companies with Indian origin

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## Insights from Co-founder of NASSCOM





Saurabh Srivastava Co-founder NASSCOM

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The journey from conceptualizing a product to entering the global market typically takes close to 2 years and requires an understanding of global market needs. In the past, Indian developers had no idea about global requirements and lacked risk capital to fund development and sales. However, today, with a thriving US\$ 250B IT service industry and a skilled workforce with global experience, along with knowledge of building software products gained at global R&D centers of MNCs in India, we are well-positioned to understand and meet global industry requirements.

To further catalyze the emergence of India as a software product nation, the government and industry bodies can play a crucial role. Aggregating demand, providing tax rebates, and offering research incentives can pave the way for unprecedented growth. Effective monetization strategies are essential for attracting investments.

To support product companies, the government can direct that part of the monies in the government funds of funds be given to venture capital firms with a condition to invest that amount purely in software product companies. BIRAC is an immensely successful model in government and can be emulated for software products too.

Conducting industry-specific research for verticalized products can possibly be entrusted to industry bodies like NASSCOM. Government initiatives can encourage existing product companies to tap into the global market, providing support for activities like branding and marketing.



## **3.2 Market opportunities for Indian software products**



# India has the potential to become a global leader in software products by tapping into new markets, improving technologies, and reevaluating industry use cases



## 3.3 Key growth drivers



# Software product industry growth is driven by demand for DeepTech, SaaS, increasing digitalization, verticalization, and favorable government policies

		Growth drivers	Description			
ance	Growing us SaaS produ	Growing use of	• Shift of operations from on-premises to cloud solutions across organizations as it is an affordable and scalable option			
import		SaaS products	<ul> <li>With competitive products enabled by <b>DeepTech</b>, and growing SMB customer segments, SaaS products <b>dominate</b> the software products market</li> </ul>			
er of	ॗॎऀऀॖॖॖॡॖ	Digital Acceleration among	New-age and mid-sized companies invest heavily in cloud & digital products to stay competitive			
In orde		Indian Enterprises	<ul> <li>Indian B2B SaaS are targeting ~50%+ ARR growth in FY23 as companies are adopting cloud solutions</li> </ul>			
1		Vorticalized Software	<ul> <li>Companies are increasingly "verticalizing"- adapting their products to specific industry use cases</li> </ul>			
	Products		<ul> <li>Vertically focused solutions will help Indian companies tap into &gt;US\$ 15B of potential opportuni across entertainment, energy &amp; utilities, TMT, sports, etc sectors</li> </ul>			
		Demand for DeepTech	<ul> <li>Cutting-edge technology to tackle complex problems such as in SpaceTech to help understand the universe, cryptography, imaging interpretation in healthcare, &amp; creation of intrusion detection systems</li> </ul>			
	AI		<ul> <li>DeepTech has a share of &gt;20% in the software product industry in India</li> </ul>			
	¥		<ul> <li>DeepTech enables horizontals like AI-based software products, cybersecurity, analytical products, &amp; hybrid cloud enterprise solutions</li> </ul>			
	Ľ	Government Policies	Policies like the National Policy on Software Products encourage the Indian software product industry by providing investments & fostering a talent pool, focusing more on tier 2 & 3 cities			
			<ul> <li>Schemes like 'Make in India' and 'Digital India' offer benefits like tax breaks, infrastructure and connectivity support, &amp; promote research</li> </ul>			
ſ	"B2B, B2C, and DeepTech products are three integral elements of the industry. The recent shift towards SaaS products, cloud computing, and DeepTech has been driving the software product industry." - Sourav Mishra, NASSCOM					

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## **3.4 Core challenges**



Need for specialized skilled workforce, lack of a product mindset, commoditization, and regulatory compliance are major challenges faced in the software product industry

#### **Reskilling requirement**

- Skill mismatch between demanded and available expertise forces companies to compromise on hiring decisions
- Underscores the need for a strategic overhaul in recruitment processes and a commitment to continuous skill development

#### Lack of product mindset

- Emphasis on providing services over creating products poses a considerable challenge
- Shift towards building a product mindset is essential for fostering innovation and global competitiveness
- Requires a fundamental shift in industry priorities

#### Delivery and expansion dilemma

- Software product start-ups face challenges in understanding how to approach their target audience with a well-defined GTM strategy
- Companies in India face the difficulty of commoditizing software products and expanding their audience



#### **Regulatory compliance**

 Adherence to diverse domestic regulations poses a challenge, which leads to companies shifting to foreign markets, driving talent away from India

# Digital literacy and awareness

- Digital illiteracy and unawareness about software products among users is a major concern for software product industry
- Limited digital literacy inhibits innovation, user adoption, and accessibility of advance features

#### Hurdles for funding

- Angel tax creates uncertainty which can lead to legal battles, making it tough for software companies to attract foreign investment
- Lack of capital availability poses a major hurdle to domestic industry's growth and success

## 3.5 What is going well in the software product industry?



# Startup and Digital India initiatives, talent retention due to GCCs, open-source development and verticalization are propelling the Indian software product industry forward





"India has a highly skilled and cost-effective workforce, making it the optimal location for GCC expansion by the global behemoths. This not only allows us to retain our skilled workforce but also results in building highperformance teams in the country, which includes everyone from developers to product managers." - Sushant Mathur, Sabre India



"In declining industries, profound insights pave the way for the development of vertically integrated solutions, tailored for effectiveness and precision. In contrast, emerging sectors offer a vibrant landscape for software firms, providing a rich tapestry of opportunities to innovate, evolve, and scale new heights." - Jappreet Sethi, HexGn

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## 3.6 What is not going well in the software product industry?



# Incentivizing demand, optimizing monetization strategies, ensuring proper recognition of software products, and the effective implementation of ISPR can further stimulate the growth of the industry



"Effective monetization and pricing strategies are important to increase the sales of domestic software products in India."

- Saurabh Srivastava, NASSCOM



"The Indian government can support Indian start-ups to succeed in India. India holds a huge opportunity that can be tapped with suitable demand incentivization structures. Their strength within India will act as a foundation for them to explore markets abroad." - Amitabh Satyam, Smart Transformations

## Agenda

Policies and regulatory framework analysis

> National Policy on Software Products (2019)

Case study: NASSCOM

Case study: iSPIRT

Success factors and limitations in the regulatory framework

Global software product regulation comparison

## 4.1 Overview of National Policy on Software Products (2019)



#### Initiatives under NPSP pave way for a sustainable software product industry by fostering innovative start-ups & nurturing talent



# 4.2 Role of NASSCOM: Various initiatives helped start-ups conceptualize 200+ software products





#### NASSCOM works to advance **policy advocacy**, **industry collaboration**, and **global positioning** for Indian software product companies

Founded in	Initiatives	Description		Outcomes
2015	Center of Excellence-IoT & Al A Mert bittime with Gost of Komatala, Haryana, Guard & Af	<ul> <li>DeepTech innovation platform for startups, innovators, enterprises, and the government</li> <li>Aims to strengthen India's AI and IoT ecosystem</li> <li>Works on a FAME model - Funding and incubation, Acceleration, Mentor support, and Enterprise connect</li> </ul>	1	<b>200+ product</b> concepts innovated
2015	<b>nasscom</b> startups	<ul> <li>Virtual Incubation program helps the start-ups that are looking to kickstart and create a network</li> <li>NASSCOM Industry Partnership Program (NIPP) provides an innovation platform for collaboration between large companies and tech- startups</li> </ul>	2	CoE IoT and AI created <b>employment</b> of <b>~17,000+</b> from FY16 to FY22 <b>2,100+</b> tech B2B start-ups
2018	<b>futureskills</b> prime Akity-NASSON Digital Skilling inflative	<ul> <li>Joint initiative by NASSCOM &amp; MeitY, aims to provide cutting-edge digital skills to the learners and help them to acquire in-demand skills</li> <li>To create a talent pool by developing technical skills</li> </ul>	3	have been connected with large corporates 'NASSCOM Startups' has
2020		<ul> <li>Collaborative effort between MeitY, NeGD, and NASSCOM, aimed at preparing India for an Al-driven future</li> <li>Knowledge portal to facilitate partnerships between various entities in India's Al ecosystem</li> <li>Portal offers resources for upskilling and career insights</li> </ul>	4	<ul> <li>funded 650+ start-ups and operates in 9 cities</li> <li>~8,198 start-ups impacted by CoE from EY16 to EY22</li> </ul>
2023	nasscom talent connect	<ul> <li>Al-powered platform, bridging the gap between business and talent pool having core IT skills and emerging tech skills</li> <li>Connects tier 2 and 3 cities' talent with businesses, providing them with opportunities</li> </ul>		-,

# 4.3 Role of iSPIRT: iSPIRT shapes software product industry policies in India, acting as a market catalyst for software products





**ISPIRT** plays a key role in **shaping policies**, **providing mentorship**, and fostering collaboration among various stakeholders to **support the development** and success of **software product companies** in the country

Founded in	Initiatives	Description
2013	Experiential learning	<ul> <li>Open-source knowledge sharing, boot camps, conferences, matchmaking sessions, and other facilitative innovations, hoping to spark more creative ideas</li> </ul>
	sessions	Playbook Roundtables and #PNCamp are examples of the experiential learning sessions organized by them
2018		Think-tank focused on transforming India into a hub for new-generation     software products
	ProductNation	<ul> <li>Serves as a <b>platform</b> for individuals to <b>share</b> their <b>perspectives</b> and insights, invigorating the software product industry with their enthusiasm for advancing the product ecosystem</li> </ul>
2020	IndiaStack	<ul> <li>Open Credit Enablement Network         <ul> <li>APIs for interaction between lender and Loan Service Provider</li> <li>Facilitates the seamless transfer of credit to both consumers and businesses</li> <li>Aims to address challenges related to short tenures and small ticket loans &amp; enable remote lenders to operate in distant geographies</li> </ul> </li> <li>Healthstack         <ul> <li>Mechanism for transferring digital health information from Health Information Providers (HIPs), such as hospitals or labs, to Health Information Users (HIUs), including insurers and research companies</li> <li>Transfer personally identifiable health data for Personal Health Records and non-personal health information for diverse applications</li> </ul> </li> </ul>



## 4.4 Success factors and limitations in the regulatory framework



Foreign direct investments, tax benefits incentivization, and data protection regulations are few success factors in the regulatory framework of the software product industry12



 100% FDI in the IT sector via the automatic route has attracted MNCs to establish Global Capability Centers (GCCs) in India, leading to increased capital inflow, global expertise, technology transfer, and innovation

Success factors

#### Tax benefits incentivization

**Foreign direct investments** 



 Government provides tax benefits to incentivize R&D and encourage software companies to invest in continuous innovation, leading to the creation of new products and technologies

#### **Data protection regulations**



 Data protection regulations provide a framework to help companies build user trust & confidence, have ethical data handling practices, and global compliance



#### - 66 –

"Government and industry bodies can assist and nudge the software companies to take part in this industry, by providing tax rebates or incentives to help the R&D involved in building the products. These should have a sunset clause."

Saurabh Srivastava, NASSCOM

## Limitations

#### Intellectual Property (IP) infringement laws



 Inadequate protection of Intellectual Property (IP) rights results in patent infringement cases concerning software products

#### **Disbursement of funds**



 Requirement of timely and adequate fund disbursements to software product startups from SPDF and other venues

#### Challenges fueling flight to foreign jurisdiction



 Complexities posed by varying intricacies within regulatory frameworks in India prompt Indian founders to set up their companies abroad, potentially hindering domestic growth



"The regulatory framework in India can be concise and straightforward, which would encourage and motivate companies to establish themselves while facilitating ease of doing business."

- Sunil Shekhawat, SanchiConnect

## 4.5 Global software product regulation comparison



Global software product regulations prompt India to enhance intellectual property protection, comprehensive data laws, and cybersecurity regulations

Country	Exemplary regulation	Impact	Key learnings
USA	<ul> <li>Digital Millennium Copyright Act (DMCA), 1998</li> <li>Deals with matters concerning the bypassing of digital rights management (DRM) and safeguards copyrighted content</li> <li>America Invents Act (AIA), 2012</li> <li>Implications for software innovations eligible for patent protection</li> </ul>	<ul> <li>Prevent unauthorized access to software and protect against piracy</li> <li>"First-inventor-to-file" system protects the patent applicants through the process for software inventions</li> </ul>	Implement robust <b>intellectual</b> <b>property laws</b> to protect software innovations
UK	<ul> <li>Copyright, Designs and Patents Act, 1988</li> <li>Provides the legal framework for protecting software and related IP</li> </ul>	<ul> <li>Encourage innovation by providing legal protection to software developers</li> </ul>	Adoption of <b>comprehensive</b> data protection laws
Singapore	<ul> <li><u>Cybersecurity Act, 2018</u></li> <li>Protects against cyber threats and ensures the resilience of essential systems</li> <li><u>Patents Act (1994), Copyright Act (2021), Trademarks Act (1998)</u></li> <li>Ensures that others cannot use, reproduce, or distribute the software without permission</li> </ul>	<ul> <li>Foundation for businesses to invest in research and development, contributing to a dynamic software landscape</li> <li>For software products involved in handling sensitive information, compliance with cybersecurity regulations is critical</li> </ul>	Establish and enforce regulations for cybersecurity
Israel	<ul> <li>Economic Competition Laws, 1998</li> <li>Address issues such as anti-competitive practices and market dominance</li> <li>Protection of Privacy Law, 1981</li> <li>Enhances the protection of critical infrastructure and sensitive information</li> </ul>	<ul> <li>Legal framework for safeguarding intellectual property</li> <li>Prevents monopolistic behavior and fosters a healthy market</li> </ul>	Promote fair competition through antitrust laws

## Agenda

## Way forward

Summary: Key focus areas for the way forward

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Action point for key focus areas

## **Insights from Managing Director of Tally Solutions**

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Tejas Goenka Managing director Tally Solutions

To propel India's transition into a product nation, we must adopt a multipronged strategy. This could involve fostering a fertile environment that encourages entrepreneurs to succeed by recognizing and classifying the software product industry differently from the software services industry. Therefore, assigning a dedicated product code for software products could lay the foundation for their correct treatment in India.

For building great products in India, one needs to have a keen and strong engineering mindset. It is critical to build that skill set in India through the improvement of the depth of computer engineering in the education system. Encouraging mentorship through role models that inspire aspiring entrepreneurs and help create innovative and unique products while solving modern-day challenges is essential.

The development of programs that nudge and support individuals in this direction, including startup incubation centers, financial and business support, and provision of tax subsidies to promote and ease the R&D work, is crucial to creating disruptive products. This will not only help ease the commercial aspect but, more importantly, support the innovative push that is critical for companies to come out with winning product offerings.

At an overall level, it is important to give focused attention and support to the software products industry within the broader software industry.



## 5.1 Key focus areas for the way forward



Key focus areas for India's Software Product Nation initiative



## 5.2 Key focus area 1: Policy focus on software products



# Key issue to address: Policy formulations for the software product industry should be distinct from approaches in addressing the IT or software industry

	Objective	How can policymakers help?
	Aggregate &	<ul> <li>Review government procurement policies and collaborate with national and international industry associations to aggregate demand for indigenous software products</li> </ul>
<b>V</b>	incentivise demand	<ul> <li>Incentivize both large enterprises and SMBs with suitable schemes to adopt domestic software products</li> </ul>
ĥÂ	products	<ul> <li>Software product focus as part of SEZs and export promotion policies</li> </ul>
	Emphasize on	<ul> <li>Focus on quality and quantity of software products, along with number of software product start-ups / companies</li> </ul>
	supply of	<ul> <li>Implement suitable design-linked incentives emphasizing innovation in emerging technology and scalability</li> </ul>
	'innovative' products	<ul> <li>Formulate a comprehensive policy framework addressing needs of software product companies of all scale, facilitating substantial growth of large enterprises as well as supporting startup initiatives</li> </ul>
	Enhance 'Ease of	<ul> <li>Track imports &amp; exports of software products separately from software services through an independent model HS code</li> </ul>
	doing business' in the software	<ul> <li>Continue to simplify taxation processes while placing emphasis on category definitions for software products, distinct from software services</li> </ul>
	product industry	<ul> <li>Streamline IP processes for software products incorporating a user-friendly redressal mechanism in case of infringement</li> </ul>



"The industry can benefit from supportive policies that encourage innovation, talent acquisition, and global collaboration. Governments can play a role by providing incentives for research and development, easing regulatory burdens, and promoting international partnerships. Investing in education and skills development to create a qualified workforce and fostering a culture of entrepreneurship are essential components for the industry to grow and become dominant on the global stage."

- Dharmesh Kothari, Graymatrix



Key issue to address: R&D efforts require acceleration with clear objectives geared towards commercialization

	Objective	How can stakeholders help?
		For government:
		<ul> <li>Design an incentive framework rewarding software product companies for R&amp;D initiatives to stimulate innovation &amp; address industry problem statements</li> </ul>
· · · · · · · · · · · · · · · · · · ·	Foster a	<ul> <li>Invest in increased test bed facilities in technology parks to provide companies with infrastructure to experiment, prototype, &amp; test software products in diverse scenarios with real-world applications</li> </ul>
	culture of innovation and IP creation	<ul> <li>Continue building ISPR or another open-source software ecosystem to facilitate knowledge and product sharing in the industry</li> </ul>
		<ul> <li>Administer R&amp;D scholarships for students focused on IP research on focused emerging DeepTech technologies</li> </ul>
		For private players:
		<ul> <li>Sponsor &amp; participate in workshops on IP development while providing expertise and industry perspectives related to IP creation</li> </ul>
	Commercialize R&D endeavors	For government and industry associations:
A STAR		<ul> <li>Introduce technology transfer offices for software products in academia to streamline transition of research into practical applications, accelerating the commercialization of innovations</li> </ul>
		<ul> <li>Formulate a conducive environment with educational bodies &amp; industry experts for efficient technology knowledge transfer of IP</li> </ul>
		<ul> <li>Assist industry with strategy papers on areas like monetization, GTM and expansion; Analyze and outline industry gaps and geographies that would have product fit for Indian software products</li> </ul>
	- <b>66</b> -	as of conducting business in the coffuers product inductry is influenced by factors such as the regulatory framework.

"The ease of conducting business in the software product industry is influenced by factors such as the regulatory framework, IP protection, and the overall ecosystem. To enhance the Ease of Doing Business, streamlined regulations that foster innovation, robust IP protection mechanisms, and collaborative initiatives to nurture a supportive ecosystem are essential. Promoting international collaboration and standardization can further contribute to creating a more conducive business environment."

- Amitabh Satyam, Smart Transformation



#### Key issue to address: Software product companies note a lack of product-centric mindset in Indian talent

Objecti	ve	How can stakeholders help?
	F	or government and industry bodies:
	•	Nurture skill development programs to hone the talent pool in DeepTech-based applications like Gen Al and quantum computing
	•	Promote domestic & international software product <b>industry interaction</b> through networking events and exchange programs enabling mentoring
Bridge s	• skill gaps	Develop <b>certifications</b> in areas like DevOps and machine learning engineering for software product development to set <b>quality standards</b>
betweer	n industry	Increase frequency of hackathons, which are based on various industry use cases and problem statements
talent po	pol F	or private players:
	•	Give <b>routine feedback</b> from internships and <b>hiring insights</b> to academia and government to further align the domestic talent pool with industry requirements
Need to cultivat	·	Participate in hackathons to assess skill levels to hire and / or provide feedback to government and academia
product-centr mindset among	ric • gst	Contribute to certification programs designed by the government and / or invest in <b>company-specific</b> certification programs for hiring or upskilling purposes
young talent to b	ridge F	or academia:
the gap	•	Integrate product lifecycle management into curricula
	•	Update curricula to include contemporary technical skills as per evolving industry requirement



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"The government should clearly distinguish between software products and services, realizing their inherent differences to create a lubricated system that encourages the creation of products. Also, we must support the grassroots efforts to create the knowledge and aspiration in young Indians to create large-scale businesses out of India."

- Tejas Goenka, Tally Solutions



Key issues to address: Indian software product start-ups need funding, promotion and guidance in branding

Objective	How can stakeholders help?
	For government:
	<ul> <li>Establish a specialized entity (SPV) to oversee a Fund-of-Funds scheme with priority areas outlined to help the industry create commercially viable products and leapfrog; Equip SPV with decision-making authority &amp; transparent mechanisms</li> </ul>
Focused funding to	• Develop an approach for software product incubation, balancing <b>equity and fee-based models</b> to enhance startup appeal across all growth stages
startups	For financial investors:
	<ul> <li>Collaborate with policy makers on a joint evaluation framework to determine milestones &amp; disbursement criteria of the SPV handling the Fund-of-Funds scheme</li> </ul>
	Actively manage portfolio companies, and provide global insights & networking opportunities
	<ul> <li>Facilitate cross-pollination of key learnings among software product portfolio companies</li> </ul>
	For industry associations:
Promote Indian-born	• Develop a <b>software product focused export promotion council</b> to help companies looking to expand globally (in developed and emerging markets)
software product start-ups	<ul> <li>Identify strategic geographies amongst emerging markets and create GTM strategies for Indian-born software products (e.g., countries in Southeast Asia, Middle East and Africa that align with strategic objectives)</li> </ul>
	• Establish India pavilion at global software events to promote and brand Indian software product industry
	Assist start-ups in research-backed strategy (monetization, GTM, expansion, etc.)
-66	
"If com Argenti Wooter	panies want to sell globally, the government could support them in selling through strategic places such as na, Nigeria, Sri Lanka, & Myanmar - locations where India commands respect and is not dismissed against a n brand, Industry bodies and government local offices can belo Indian companies develop go to market

plans for market entry & expansion."

- Amitabh Satyam, Smart Transformation

STPI KnowledgeUp Series | 37

## Agenda

## **Case studies**

Country case study 1: United States

Country case study 2: Israel

Company case study 3: Tally Solutions

Company case study 4: Zoho

Company case study 5: Freshworks

## 6.1 Country case study: United States



United States, the largest software product market in the world, further promotes the industry by investing in innovation, focusing on expanding global reach and supporting the workforce



# Total companies 8M+



**# Software Product Co** 60K+



**# SaaS start-ups** 15K+

**# SaaS customers** 50B+

#### Key facts & focus area

#### Largest software product market

- US dominates the global software product market, by generating most of its revenue
- Market driven by digital transformation of companies and rising demand for cloud-based software solutions

#### **Epicentre for software companies**

- **Key areas** are artificial intelligence, machine learning, and blockchain
- Silicon Valley, renowned for its innovation and the presence of ~2,000 technology companies

#### **Open-Source Contribution**

- Involvement in open-source projects is a marker of influence in the software industry
- Strong leader in open-source development, as major projects originate or heavily involve U.S.-based organizations

#### USA invests in innovation, global reach, & workforce development to grow its software product market



#### Investing in Innovation

- Companies enjoy financial support, tax advantages, & favorable regulatory structures
- Initiation of Software Industry Promotion Program (SIPP) by U.S. Department of Commerce
- SIPP offers grants, technical support, and market entry opportunities to software firms



# Expanding global reach

- USA and the European Union team up for initiatives like Transatlantic Software Alliance (TSA)
- TSA elevates interoperability, security, and quality standards for software products across the Atlantic



# Supporting workforce

- Invests in education & training programs such as **Software Skills Initiative (SSI)**
- SSI provides software skills & certifications to those who are unemployed or underemployed
- Contributes indirectly to the expansion of the software product industry

## 6.2 Country case study: Israel



# Israel emerges as a prominent and influential player in the markets of cybersecurity, artificial intelligence (AI) and machine learning (ML), as well as cloud computing



# Total companies 18K

**% Software exports** 24%



**# Software Product Co** 9,000+ **# B2B SaaS** start-ups 2,000+

### Key facts & focus area

#### Cyber security

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- Israel continued to be a **major player** in the global cybersecurity market.
- Prioritizes cybersecurity due to both national security needs and the global demand for strong cybersecurity solutions
- ~US\$ 1.4M was invested in cybersecurity during Q1-Q3 of 2023, contrasting with investments in other industry sectors

#### Al and Machine learning

- Israel boasts world-renowned academic institutions contributing significantly to AI research
- Numerous start-ups & established companies are working on Al applications in healthcare, Finance, etc.

#### Cloud computing

Adoption of cloud computing is on the rise, with companies developing and offering cloud-based solutions across various industries:

- Enterprise Cloud Migration
- Hybrid & Multi-Cloud Strategies

# Israel prioritizes the funding of startups, particularly for R&D, to foster new innovations, with focus on cybersecurity



#### **Innovation & Global Competitiveness**

Israel wants to be a top spot for innovation globally.

Israeli companies play a **leading role in technology** and make big contributions to the world market



#### **Cybersecurity Leadership**

Israel prioritizes **cybersecurity collaboration** between the govt and private industry **(CyberSpark)**, aiming to foster a dynamic ecosystem for innovative solutions, including software products

#### Start-up support

The "**Seed program**" targets start-ups in the seed stage focusing on technologies in regulated industries, those with longer implementation timelines, or technologies within emerging markets



#### **R&D Grants and Funding**

Several **grant programs** support the development of software products in Israel, aiming to foster innovation and boost the global competitiveness of local companies

## 6.3 Company case study: Tally Solutions



#### Tally Solutions is a leading player in accounting software products, catering to 90%+ MSMEs market in India

Tally	Key figure	S	Key o	fferings
POWER OF SIMPLICITY	40+ products	~2.3M+ licensed users	Tally Prime	TallyPrime powered by AWS
Released first     software product	<b>100+</b> countries	<b>Top markets –</b> India, US & UAE	Tally Software Services	Shopper 9
1990 • Introduced multi- currency support	<b>28,000</b> + partners	90%+ share in Indian MSMEs market	TallyPrime Server	
• Tally 4.5 released 1991 with enhanced	Initiatives	s taken to promote i	its software produc	ts
1999 • Launched Tally 5.0	Upskilling through Tally education	Verticalized solutions	for MSME Tally Xcce	lator Program
<ul> <li>Released Tally EPR 9</li> <li>2000</li> <li>2005</li> <li>Tally.NET introduced for remote access</li> <li>Tally.ERP 9 Gold launched for large companies</li> </ul>	<ul> <li>Offers certifications &amp; courses to enhance skills, boost prospects of improved job opportunities, and explore new career paths</li> <li>Provides learners with a pathway to acquire recognized skills &amp; problem-solving abilities</li> </ul>	<ul> <li>Tally studies the net MSME ecosystem, delivering tailored</li> <li>Focus remains on of innovation, striving cutting-edge tech that cater to the evo of MSMEs in India a</li> </ul>	<ul> <li>consistently solutions</li> <li>continuous to develop nologies olving needs and globally</li> <li>Crafted develo develo</li> <li>Promot fosterin essenti with th necess</li> </ul>	for the growth and pment of MSMEs es entrepreneurship by ig the development of al business skills ms to empower individuals e knowledge & tools ary for success
<ul> <li>2015</li> <li>Tally.ERP 9 released with GST compliance with modern</li> </ul>	74	Annual Rev CAGR (US\$ M, FY1 ~7%)64	/enue 19-22) CAGF	65
<ul> <li>features released</li> <li>2020</li> <li>Continues international expansion in over 100 countries</li> <li>Tally Solutions remains popular amongst MSME businesses for accounting &amp; ERP</li> </ul>		04	60	
solutions	FY19	FY20	FY21	FY22

Note(s): MSME: Micro, Small & Medium enterprises Source(s): Company website, 1Lattice analysis STPI KnowledgeUp Series | 41

## 6.4 Company case study: Zoho



# With 55+ products, Zoho provides a suite of cloud-based applications for business productivity and collaboration



Key figures		Key offerings	
55+ products	28 <b>100M+</b> users	Zoho CRM - CRM	ZOHO People -HRM
<b>150+</b> countries served	Top markets - US, European Union & India	Zoho Projects - project management software	<b>Zoho Inventory</b> - Inventory management system,
50%+ sales from US SMBs	<b>15K+</b> employees	Zoho Sites - Website builder software	Zoho Books – Accounting software
Initiatives taken to promote its software products			

#### Strategic alliance with PwC

- To help medium & large enterprises accelerate their digital transformation journey
- Focus on providing clients with transformation solutions such as customer experience platform, HR tech, and financial management applications



Integration of OpenAI with Zia

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Integration of generative AI technology with Zia reinforces **customer experience**, **privacy**, and **value** 

Extended its **technology platform** to government bodies, to help them **manage their operations** more efficiently

Collaboration with government bodies for COVID relief

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Worked with a few **NGOs** to develop **tech solutions** for managing their relief work



Source(s): Company website, 1Lattice analysis

## 6.5 Company case study: Freshworks



STPI KnowledgeUp Series | 43

#### Catering to 60K+ businesses, Freshwork specializes in customer engagement and business software

freshworks



Key figures		Key offerings			
Ď	40+ products	<u> 288</u>	60K+ businesses	Freshdesk –	Freshservice –
ÊÌ	<b>100+</b> countries served		60% revenue from SMBs	engagement solution	management
	<b>40%</b> sales come from US & UK		5K+ employees	<b>Freshsales</b> - Sales CRM	Freshchat – customer support

Initiatives taken to promote its software products					
<ul> <li>Strategic pact with Sonata Software</li> <li>To expand its sales channel in India</li> <li>Sonata Software would sell and implement Freshworks' SaaS solutions to help millions of small and medium businesses</li> </ul>	<ul> <li>Freshworks STS So Academy</li> <li>Programme exc designed for in aspiring to purs technology, where the means to af education after</li> </ul>	oftware clusively idividuals sue a career in to do not have ford formal high school	<ul> <li>Collaboration with Google</li> <li>Integrated with Google to form Google for Freshworks</li> <li>Easier for businesses to have conversations with their customers within the Google apps</li> </ul>		
Launched a <b>healthcare bot</b> to help the government <b>automate</b> the process of <b>screening</b> people for <b>COVID-19</b> 172	Annual Rev (US\$ M, CY CAGR ~42% 250	venue 19-22) 371		498	
CY19	CY20	CY21		CY22	

Source(s): Company website, 1Lattice analysis





Terminology	Definition
Cost arbitrage	<ul> <li>Finding smart ways to save costs by taking advantage of the differences in labor and operational costs between different regions</li> </ul>
DeepTech	Describes state-of-the-art technologies that leverage cutting-edge advancements in science and engineering
Global Capability Center	<ul> <li>Offshore units of multinational corporations that focuses on delivering various business functions, services, and support to different parts of the organization globally</li> </ul>
Legacy tech	Technologies, software, or hardware that is outdated
Open-source software	Open-source software is software with source code that anyone can inspect, modify, and enhance
Regulatory sandbox	<ul> <li>Testing of new products or services in a controlled environment where the regulator may permit certain relaxations for the testing</li> </ul>
Self - service model	<ul> <li>Model empowering users to find solutions, information, or support on their own, without requiring a conversation with the software product team</li> </ul>
Sunrise industry	Industry that produces new types of products or services, especially one that is expected to grow quickly
Sunset industry	• Industry that has existed for a long time and that is less successful and making less profit than previously
Value arbitrage	<ul> <li>Using cost advantages or other benefits to improve a product or service, making it more appealing to customers</li> </ul>
Verticalization	<ul> <li>Process of tailoring a software solution or product to meet the specific needs and requirements of a particular industry or vertical market</li> </ul>

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Software Technology Parks of India (STPI) is a premier S&T organization under Ministry of Electronics and Information Technology (MeitY) engaged in promoting IT/ITES Industry, innovation, R&D, start-ups, product/IP creation in the field of emerging technologies like IoT, Blockchain, Artificial Intelligence (AI), Machine Learning (ML), Computer Vision, Robotics, Robotics Process Automation (RPA), Augmented & Virtual Reality, Animation & Visual effect, Data Science & Analytics for various domains like Gaming, FinTech, AgriTech, MedTech, Autonomous Connected Electric & Shared (ACES) Mobility, ESDM, Cyber Security, Industry 4.0, Drone, Efficiency Augmentation, etc.

Since its inception in 1991, STPI has been working towards equitable and inclusive IT-led growth pan-India which in turn has helped promoting Software exports, Science, Technology & Innovation (STI) and Software product development. With 11 jurisdictional directorates and 65 centers, STPI has expanded its presence pan-India to support IT/ITeS Industry. Working closely with all stakeholders, STPI has played a key role in transforming the country as the preferred IT destination.

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