Industry Study

Over-Concentration in IT Fields by Indian Students: Current Trends, Future Risks, Real-World Dynamics, and Sustainable Solutions

1. Introduction
   India has rapidly emerged as a global IT hub, driven by a large English-speaking workforce, cost efficiency, and robust technical education. Over the past two decades, the number of students opting for Computer Science Engineering (CSE) and IT-related disciplines has seen exponential growth. While this trend has benefited India's global IT position, it raises concerns about sustainability, skill distribution, and employment stability across all sectors.

This research explores:

- Why Indian students overwhelmingly prefer IT fields.
- How the global outsourcing model is structured.
- Why most foreign clients prefer Indian services.
- The potential risks if this one-directional trend continues.
- The impact of emerging technologies like AI.
- Solutions for sustainable sectoral balance.

2. How Indian IT Companies Get Work: The Global Outsourcing Model

2.1. Outsourcing Workflow: A Detailed View
Global companies, particularly from developed countries like the USA, UK, and Australia, often need support in software development, record maintenance, technical support, and data management. To reduce operational costs and increase efficiency, they outsource these services to companies in countries like India.

Example Workflow:

Stage	**Description**
Client	A large mobile company in the USA (e.g., Verizon) requires backend database maintenance.
Service Provider	Indian IT company (e.g., TCS) signs a contract to provide this service remotely.
Process	The Indian team provides 24/7 support at lower costs, allowing the US company to focus on core operations.

This is repeated across industries: banking, telecom, healthcare, and more.

2.2. Major Service Provider Countries

Country	**Specialization**
India	Largest market share in global IT services.

Country	Specialization
Philippines	Specializes in voice-based services and BPO.
China	Strong in hardware, embedded systems, and manufacturing IT.
Vietnam & Eastern Europe	Growing rapidly as alternative outsourcing destinations due to political stability and lower costs.

2.3. Why Clients Are Mostly Foreign Companies

Reason	Description
Cost Saving	Labor costs in India are significantly lower than in the USA or Europe.
Quality with Cost	Indian IT companies deliver acceptable quality at low prices.
English Proficiency	Easy communication between Indian service providers and Western clients.
Scalability	Large manpower pool to handle massive projects quickly.

Real-World Example:
Amazon and Microsoft outsource a significant portion of their backend operations to Indian companies like Infosys and Wipro.
Few Indian companies outsource to each other because Indian IT budgets are smaller.

3. What Happens If Clients Stop Choosing India?

Scenario 1: Global Clients Diversify
If clients like Google and Apple start outsourcing more to Vietnam, Poland, and the Philippines:

- India's IT revenue will fall sharply.
- Unemployment will increase.
- Smaller companies may shut down.

Table: Volume of Work by Country (Hypothetical)

Country	Current Work Volume	Future if Diversified
India	70%	40%
Vietnam	10%	25%
Philippines	10%	20%
Poland	10%	15%

Impact: India's dominance would shrink, leading to high competition for reduced opportunities.

4. CSE Pass-Outs vs. IT Recruitment (Realistic Trends)

Key Insights:

- The number of CSE graduates is growing faster than IT job creation.

- This creates intense competition and unemployment among freshers.

Table: CSE Graduates vs. IT Jobs Available

Year	CSE Graduates	IT Jobs Available
2020	8,00,000	3,00,000
2022	9,00,000	3,50,000
2024	10,00,000	3,80,000
2026	11,50,000	4,00,000

Real-World Example:
In recent years, companies like TCS and Infosys have reduced mass hiring due to market saturation, leaving many graduates unemployed or underpaid.

5. Why Students Prefer IT Fields

Major Reasons:

Reason	Description
Higher Salary Packages	IT companies offer higher starting salaries compared to core sectors.
Job Availability	Higher visibility of IT jobs through campus placements.
Social Influence	Peer pressure and family encouragement.
Perceived Easiness	Belief that coding is easier to learn than core engineering.

6. Why Students Avoid Creative Fields (Editing, Graphics, 3D Design)

Reasons:

Reason	Description
Lack of Exposure	Lack of exposure in engineering curriculum.
Limited High-Paying Jobs	Lesser number of high-paying job opportunities in these sectors in India.
Social Mindset	Social mindset that core engineering and IT are more "respectable."
Job Security Fear	Fear that creative fields have limited job security.

Real-World Gap:
Despite the booming gaming and animation industry (e.g., growth of companies like Zynga, Ubisoft India), student interest remains low due to lack of awareness.

7. Client Benefits vs. Service Provider Benefits

Reality Check:
Even though Indian service providers handle critical work, the client companies make more profit because:

- They own the intellectual property.
- They focus on innovation and core business.
- They save billions by outsourcing.

Example:
Apple outsources much of its supply chain and services but retains the largest share of profits globally.

8. Impact of AI on Clients and Service Providers

For Clients:

Benefit	**Description**
Reduced Dependence	Reduced dependence on human workers.
Cost Reduction	AI-driven automation further lowers costs.

For Service Providers:

Challenge	**Description**
Routine Job Loss	Routine jobs will disappear.
Upskilling Needed	There will be a need to rapidly upskill to survive.

Example:
Jobs like manual data entry, basic software testing, and support roles are already being replaced by AI bots and automated scripts.

9. Solution to AI Disruption

Students:

- Learn AI, blockchain, cybersecurity, creative tech, and cross-disciplinary skills.
- Focus on skills that AI cannot easily replace: creativity, complex problem-solving.

Institutions:

- Introduce AI and creative tech from first year.
- Encourage project-based, practical learning.

Government:

- Provide incentives for creative industries and emerging tech start-ups.

10. Over-Concentration in IT Fields: The Growing Problem

Current Situation:

- Over 70% of Indian engineering students aim for IT jobs.

Consequences:

- Core industries (mechanical, electrical, civil) lack skilled engineers.
- Critical infrastructure suffers.
- Students in core fields often switch to IT jobs, further deepening the gap.

Example:
Companies like L&T and BHEL report hiring difficulties because engineering students are not interested in field jobs.

11. What If Students Split Equally Across Fields?

Hypothetical Balanced Distribution:

Field	**Current %**	**Suggested %**
Software/IT	70%	20%
Core Engineering	10%	20%
Creative Technology	5%	20%
Electronics	5%	20%
New Tech (AI, Robotics)	10%	20%

Benefits:

- Reduced job competition in IT.
- More innovation in core sectors.
- Growth in creative and design industries.
- More balanced national development.

12. Future Population Impact

If the Current Trend Continues:

- By 2030, India will have a very young population with saturated IT markets.
- Unemployment rates among IT graduates may spike.
- Core and creative sectors may remain understaffed.

Balanced Scenario:

- Sustainable employment across multiple sectors.
- Skill diversification reduces national dependency on IT alone.
- More stable economic growth.

13. Conclusion
    The one-sided growth of IT career aspirations in India is creating long-term structural imbalances in the job market. If this trend continues, India risks saturating its IT industry

while neglecting vital sectors such as core engineering, creative technology, and new-age industries. Balanced student distribution is crucial for long-term national growth.

14. Recommendations

For Students: Diversify skill sets. Explore sectors like animation, AI, core engineering, electronics, and design.

For Educational Institutions: Redesign curriculum to provide practical exposure to diverse fields.

For Government: Promote awareness campaigns for lesser-chosen sectors and support start-ups in creative and emerging tech industries.

For Industry: Encourage cross-discipline recruitment and training programs.