Offshore Research and Consulting

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Healthcare Outsourcing to India – A Brief Overview

Presentation

Zinnov LLC

July, 2006

AGENDA

- Healthcare Outsourcing in India
  - The payer market in US and the major outsourcing initiatives
  - The payer market in US and the major outsourcing initiatives*

Executive Summary

- The US healthcare industry is having a high spending for the past three years and hence need to outsource most of the processes to low cost destinations
- The recommendations from HIPAA for automating the entire provider services by the end of current year can clearly initiate a new outsourcing wave.
- The US healthcare market is divided into two segments – The Payers and The Providers
- The US payers outsource more than the providers and the net spending of the US healthcare industry on outsourcing was U$39.6 billion in 2003-2004
- The comparison of the various low cost destinations clearly shows that India has all the advantages individually provided by various countries
- The US payers initiated the outsourcing initiatives to India by late 1990s

Executive Summary

- Claims processing is the major process outsourced by US payers to India in terms of revenue
- The availability of the HIPAA trained talent pool in India is driving the momentum in claims processing
- The payer BPO vendors of Indian healthcare market specialize in individual claim formats than going for a horizontal integration.
- The KPO market in India is growing with more and more vendor presence offering service
- The key process in KPO space for Indian vendors is medical analytics
- The Indian BPO vendors if they could provide the data analytics they could integrate their existing service and can command a piece of KPO pie
- The US providers followed the trend of outsourcing started by payers and medical transcription was the first process outsourced.

Executive Summary

- The revenue from the medical transcription process in India recently declined by 30% due to lack of trained talent pool in the country
- The process of medical billing and coding hold the top rank in the revenue portfolio of Indian vendors for providers
- The newer avenues of outsourcing like medical tourism is gaining momentum in India
- The Indian medical ecosystem is very conducive with rich talent pool and well maintained facilities
- Medical tourism in India is expected to generate a revenue of about U$2300 million in 2012
- The future of Indian vendors catering the US provider network is in offering innovative services like teleradiology and medical graphics.

Healthcare Outsourcing in India – A brief overview

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  - The Outsourcing initiatives in US payer market
  - The Indian Healthcare Ecosystem
  - The comparison of India against its competitors
  - The Healthcare processes outsourced to India
  - The complexities of payer healthcare processes

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Appendix

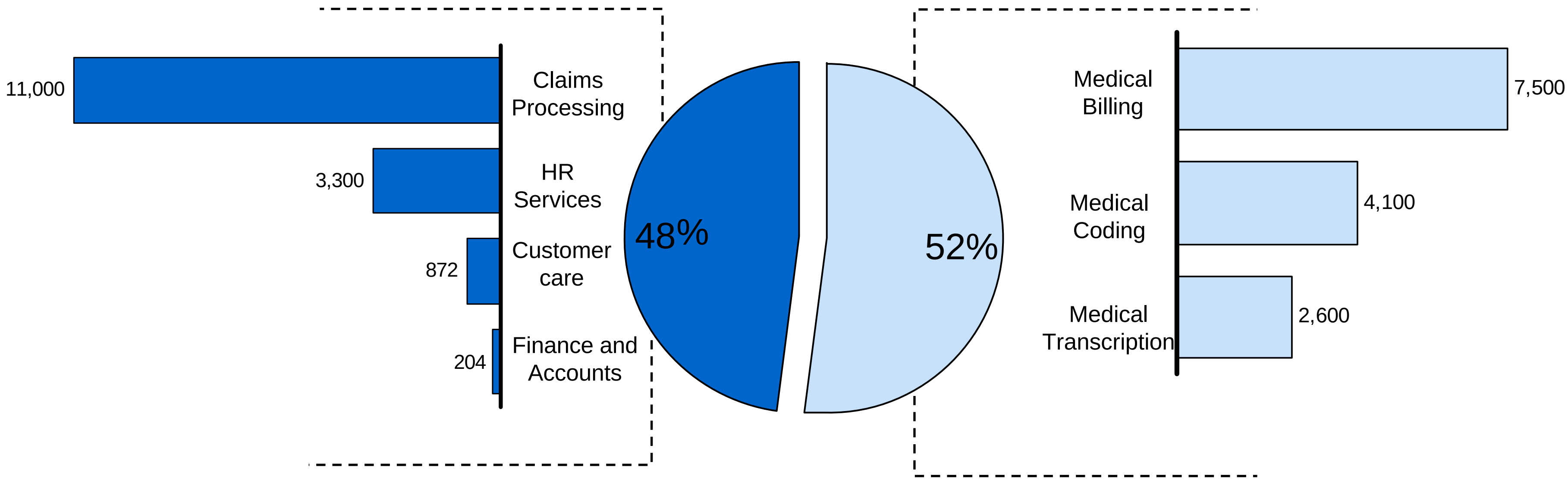
The spending of US payers and providers in healthcare outsourcing is expected to grow over U$38 billion during 2007-2008 and…

US Payer spending in Outsourcing during 2003- 2004, $ millions

U$15.3 billion

US Provider spending in Outsourcing during 2003-2004 , $ millions

U$ 14.2 billion



The BPO component of the spending from global payers and providers together is about 350 Billion US$ during 2003-2004

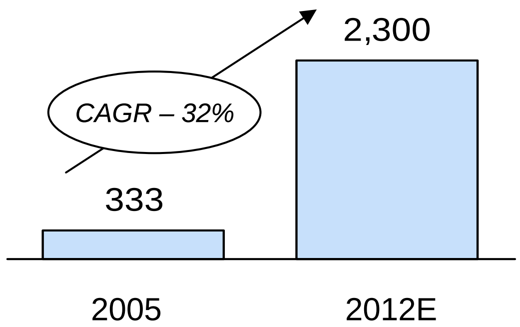
The Indian ITES revenue in healthcare is expected to grow over 230 million during 2007-2008

The trend in US KPO creates new professions in Indian health industry like healthcare analytics , 2D-3D medical animators etc

Source: Zinnov Analysis , Reports and BPO proposals from various Indian vendors

...the Indian healthcare ecosystem is very conducive for the US players with positive industry trends and significant advantages

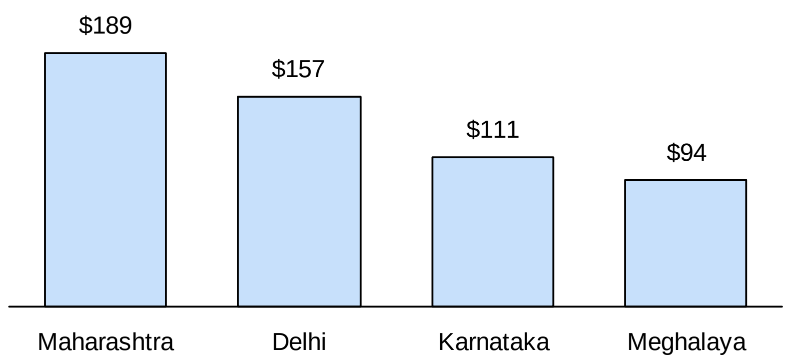
Indian Medical Tourism Revenue , $ million



States in India	No of registered doctors
Maharashtra	95,299
Tamil Nadu	72,725
Karnataka	64,492
West Bengal	53,456

India offers a cost advantage of about 50% across the various outsourced BPO activities from US payers and providers

Indian Healthcare Infrastructure Investment in various states, $ million



India offers a cost advantage of about 60% to 80% in various medical treatments compared to US

Source: Zinnov Analysis , India Stat 2006

The comparison of India with other nations shows the high potential of Indian vendors and their competencies…

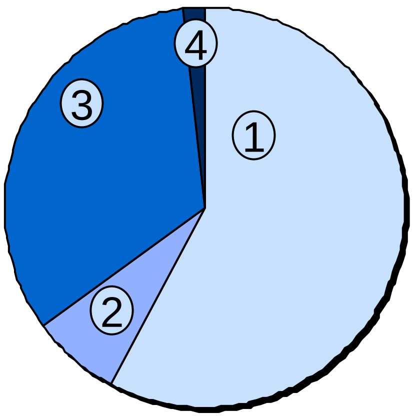
	Key Competencies	Key Outsourcing Areas in focus
India	High Quality Talent pool Proven Track record Favorable Governmental Policies for healthcare Cost savings Conventional Medicinal Facilities like Ayurveda High Quality infrastructure	Medical Tourism Healthcare Customer care Network support Healthcare BPO outbound Healthcare analytics
Philippines	Cost Benefits The US accent Talent pool The cultural affinity with US	Healthcare Customer Care
China	Bigger talent pool at a lower cost High end medical facilities Conventional Chinese medicine	Healthcare Customer Care Network Support Traditional medical facilities
Eastern Europe	Quick deployment High Quality output and Facilities Cost savings	Oral and Surgical facilities especially in Ophthalmology Healthcare Customer service Healthcare BPO outbound
Thailand	Service oriented culture High Quality facilities at low prices	Medical tourism

Source: Zinnov Analysis , IBM reports on healthcare outsourcing to Eastern Europe, Business week

…However, the Indian service providers accounted for only U$115 million worth of outsourcing/ offshoring, during 2005-2006

BPO processes outsourced	
Claims Processing	1
HR Services	2
Customer care	3
Finance and Accounting	4

Projected share of spending by US payers in BPO activities (2008)



Top 3 Indian BPO organizations in healthcare segment	Focused Processes
Lason India	All types of Health Insurance Claims
ACS	Claims Processing specially dental claims
HTMT	General Health insurance Claims

The major processes are still broken down into simpler individual tasks with specialized vendors offering services

Independent KPO vendors and vendors integrating KPO and BPO services are both present in the market

The IT service companies employ a set of healthcare specialists for understanding the client needs and hence do an effective knowledge transfer to the developer community

Source: Interviews, Zinnov Analysis

The total outsourcing is expected to grow at a CAGR of 150% during 2003-2004 and 2007-2008

2003-2004

Payer outsourcing	Discussion
Market Size	U$15.4 billion US $ which includes all non clinical activities
Major Services involved	Customer care, Claims processing, HR services, Finance and Accounting

Claims processing is the major process outsourced from US market (11 billion US $)

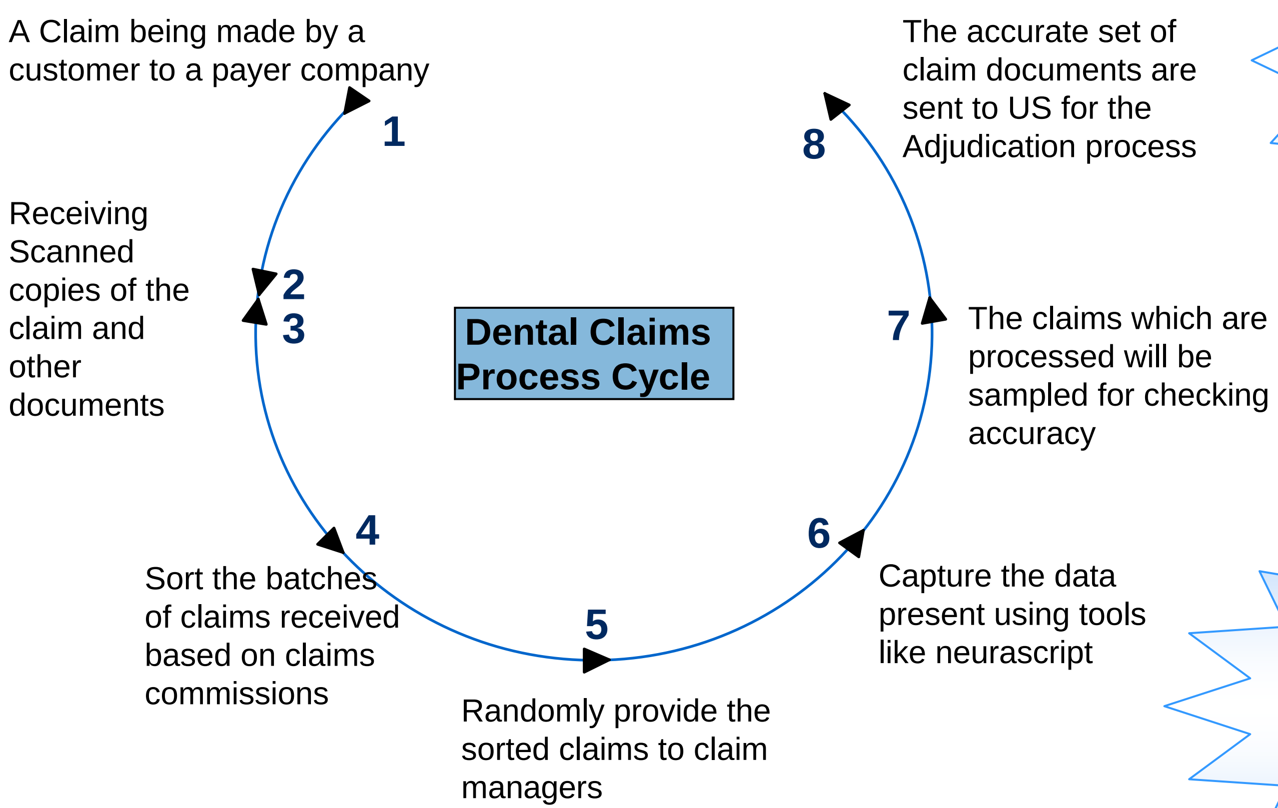
2007-2008

Claims processing will continue to dominate the outsourcing as it has an expected market of U$22 billion

Payer Outsourcing	Discussion
Market Size	U$38.5 billion by 2008
Major services Involved	Claims processing, HR services, and customer service

Source: Research Reports, Zinnov Analysis , projections in BPO proposals by various Indian vendors

Claims processing has a high potential for Indian BPO vendors in terms of revenue



Claims Processing does not provide much revenue per transaction to the vendors and hence it becomes a pure volume game

The considerable size of HIPAA trained talent pool in India provides the country with an added advantage for attracting major US players

Source: Interviews, Zinnov Analysis

The complexity of the outsourced processes has increased over the last 10 years and…

Before 2000

The vendors were dependent on low end IT services applications like maintenance

- The maintenance contracts of legacy systems were outsourced to India
- The design and development of applications were in Unix based or IBM CICS systems
- The entire outsourcing was focused in IT services

2000- 2006

The projects on Integrated development and BPO became revenue sources

- The complex and integrated application development is outsourced to India
- The execution of business processes and customer care for various payer services is started delivered from India
- The industry has undergone an effort to integrate the IT services and BPO offerings

Beyond 2006

The KPO , BPO and Integrated IT solution providers will have the maximum benefits

- The KPO centric new players will emerge with technical competencies
- The existing players will try to integrate KPO with BPO and IT services to create an entry barrier to new players
- The US organization will become more lean concentrating only on key service offerings

IT Services	Complexity
Integrated Insurance Application	
Maintenance of legacy applications	
Data mining	
Data Management	

BPO Services	Complexity
Claims Processing	
HR Services	
Customer Care	
Finance and Accounting	

Very Complex *Complex* *simple* *Very Simple*

Source: Interviews, Zinnov Analysis

…India now offers a great value proposition in KPO as well

Service Category	BPO	KPO***
Overall Vendor Assessment**	3 vendors*	2 vendors*
HIPAA certified Talent pool	3 vendors	1 vendor
Client Referrals	3 vendors	2 vendor
Process Maturity	2 vendors	1 vendors
Proven Track records	3 vendors	1 vendors
Infrastructure Facilities	2 vendors	2 vendors

Satisfactory *Good* *Very Good* *Excellent*

*Vendors catering to the Top 5 FORBES Health plan organizations * * Based on the service *** The KPO includes Medical analytics and customer analytics

Source: Zinnov Analysis

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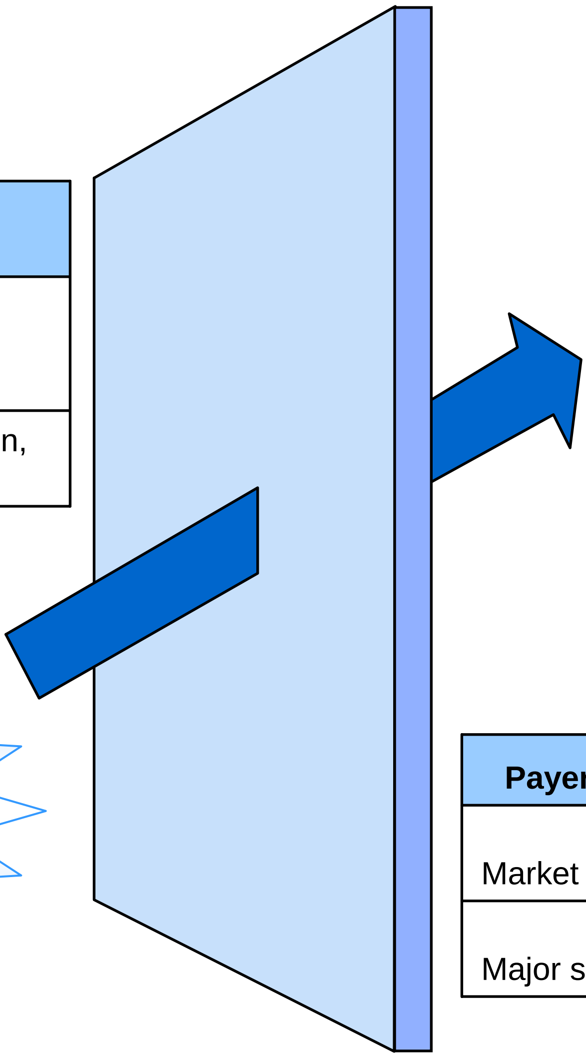
Appendix

Medical Billing is the major process outsourced by the providers from the US market and …

2003-2004

Provider outsourcing	Discussion
Market Size	U$14.2 billion which includes all clinical activities
Major Services involved	Medical Transcription, Coding and billing

Medical Billing is the major process outsourced from the US provider market (7.5 billion US $) in market size



2007-2008

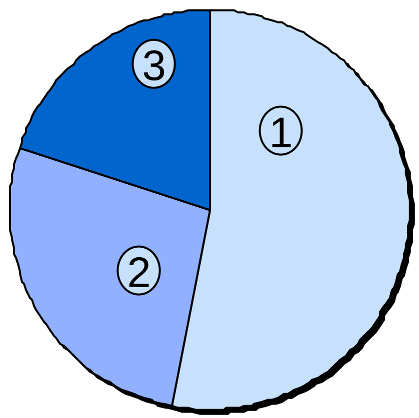
Medical Billing and Collection will dominate the provider outsourcing with an expected 16.223 billion US $ market size

Payer Outsourcing	Discussion
Market Size	U$30.6 billion (by 2008)
Major services Involved	Medical Transcription, Coding and Billing

Source: Research Reports, Zinnov Analysis , Projections in BPO proposals by various Indian vendors

..the activities outsourced accounted to U$110 million in financial year 2005-2006, which is low as compared to what payers outsourced

Projected share of Spending by US providers in BPO activities (2008)



BPO processes outsourced	
Medical Billing	1
Medical Coding	2
Medical Transcription	3

The market of Indian Vendors for providers is highly fragmented without a clear market leader

A trend of integrating the billing and coding processes along with medical facilities is seen in Indian Hospital Vendors

Provider Processes	Cost benefit (percentage)
Medical Coding and Billing	50% reduction in cost of processing
Medical Transcription	40% reduction in cost of transcribing

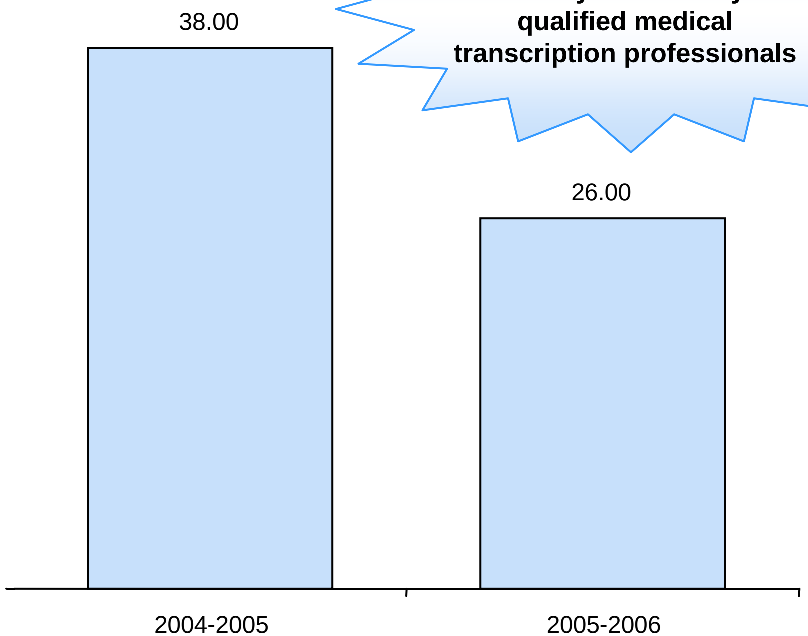
One simple medical bill for a small clinic(CMS Fortune 100) takes 30 minutes to process and cost 4-5US$ per bill

The KPO processes like teleradiology is gaining momentum in Indian market

Source: Interviews, Zinnov Analysis

Medical Transcription which is the most mature process outsourced from the US market has seen a loss of revenue in financial year 2005-2006...

Medical Transcription Earnings History of Indian Vendors, $million



The decline in revenue is driven by the scarcity of qualified medical transcription professionals

The compulsion from HIPAA for automation of entire provider system can boost the outsourcing revenue for transcription this year

the limitation of talent pool Is one of the major hindrance for the growth of medical transcription in India

A standard medical transcription cycle has a duration of minimum 30 minutes with a standard remuneration of 10-15 US$

Source: Research Reports, Zinnov Analysis , rediff.com

…However, the availability of world class medical facilities in India has boosted the healthcare revenues

Procedure	Cost (USD)*				Cost Savings		
	US	UK	Thailand	India	India/ US	India/ UK	India/ Thailand
Heart Surgery	40,000	23,000	7,500	6,000	85%	73.9%	20%
Bone Marrow Transplant	250,000	150,000	62,500	26,000	89.6%	82.7%	52%
Liver Transplant	300,000	200,000	–	69,000	77%	65.5%	–
Knee Replacement	27,000	16,000	8,000	6,000	77.8%	62.5%	25%
Hip replacement	19,000	15,000	–	5,000	73.7%	66.7%	–
Angioplasty	30,000	23,000	–	4,500	85%	80.4%	–
Angiography	2,800	2,000	–	400	85.7%	80%	–
Cosmetic Surgery	20,000	10,000	3,500	2,000	90%	80%	42.9%

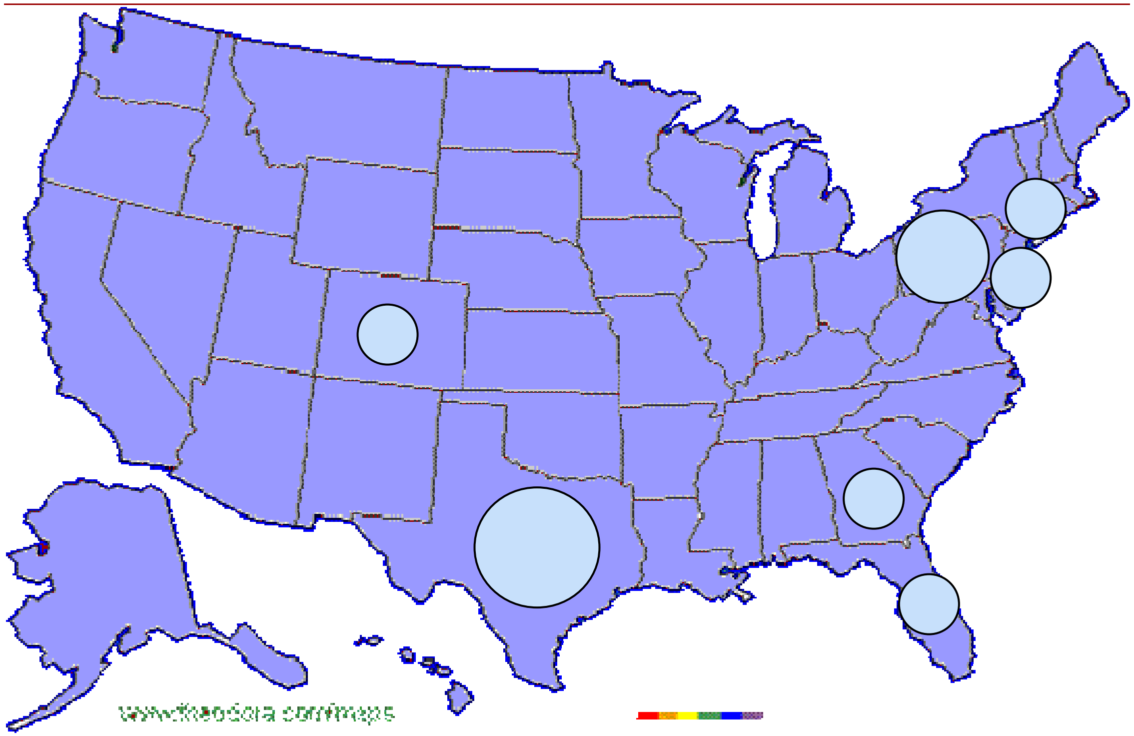
The talent pool of medical professionals in India is currently 650,000 with 20,000 freshmen added every year

The medical colleges and Para medical institutions increased their yearly intake of fresh men to cater this on going demand

The recent relaxation of immigration norms for medical professionals can create a talent pool depletion in domestic market

Source: Interviews, Zinnov Analysis, Escorts Heart Institute and Research centre limited, Business world India

The central and the west coast US hospitals have been the key drivers of outsourcing in the US provider space…



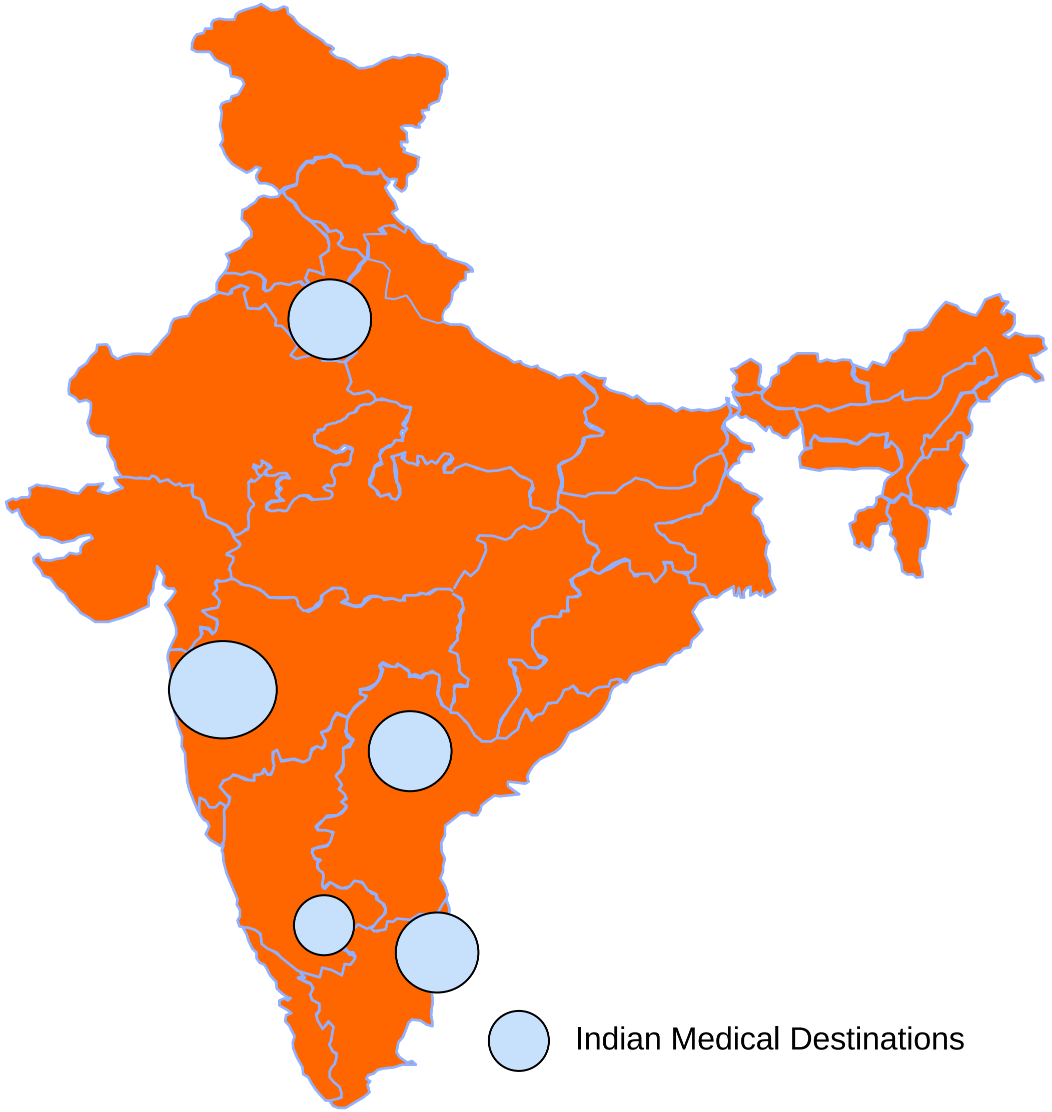
Location of Major Hospitals outsourcing to India

List Of US Hospitals outsourcing to India
Altoona Hospital, Pennsylvania
St. Mary's Hospital in Waterbury
Grand View Hospital in Sellersville
Bayfront Medical Center
Cambridge Health Alliance
St. Anthony's Hospital
West Georgia Medical Center
Shore line Hospital
Arlington Memorial Hospital
Spun Hospital
Kleberg Hospital
Albert Einstein Medical Center

Source: Hospital Websites, Zinnov Analysis

… mainly to preferred vendors located in metropolitan cities of India

Key Destinations
NCR
Mumbai
Chennai
Bangalore



Source: Hospital Websites, Zinnov Analysis

The complexity of the processes outsourced to India by the providers is lower compared to that of the payers

Before 2000

The outsourcing wave started with medical transcription in late 90s

- Medical transcription was one of the first processes outsourced to India
- This process created a niche market with specialized vendors due to the slightly complex nature of it.

2000- 2006

The medical coding and billing followed the trend with IT companies started providing integrated solutions

- The medical coding and billing, with HIPAA regulations to adhere, has started to be outsourced to India
- The transcription companies in India tried to integrate the billing and coding functions
- The IT companies started providing management softwares for small clinics, ERs

Beyond 2006

The future lies in the KPO intensive teleradiology,2D and 3D medical animation process

- The transcription companies will grab this opportunity due to lack of medical transcription professionals in India
- KPO providers will soon become a separate segment like BPO
- The IT services organizations in India will start focusing on Biomedical market as well

IT Services	Complexity
Provider Management Applications	
Data Maintenance and Management	

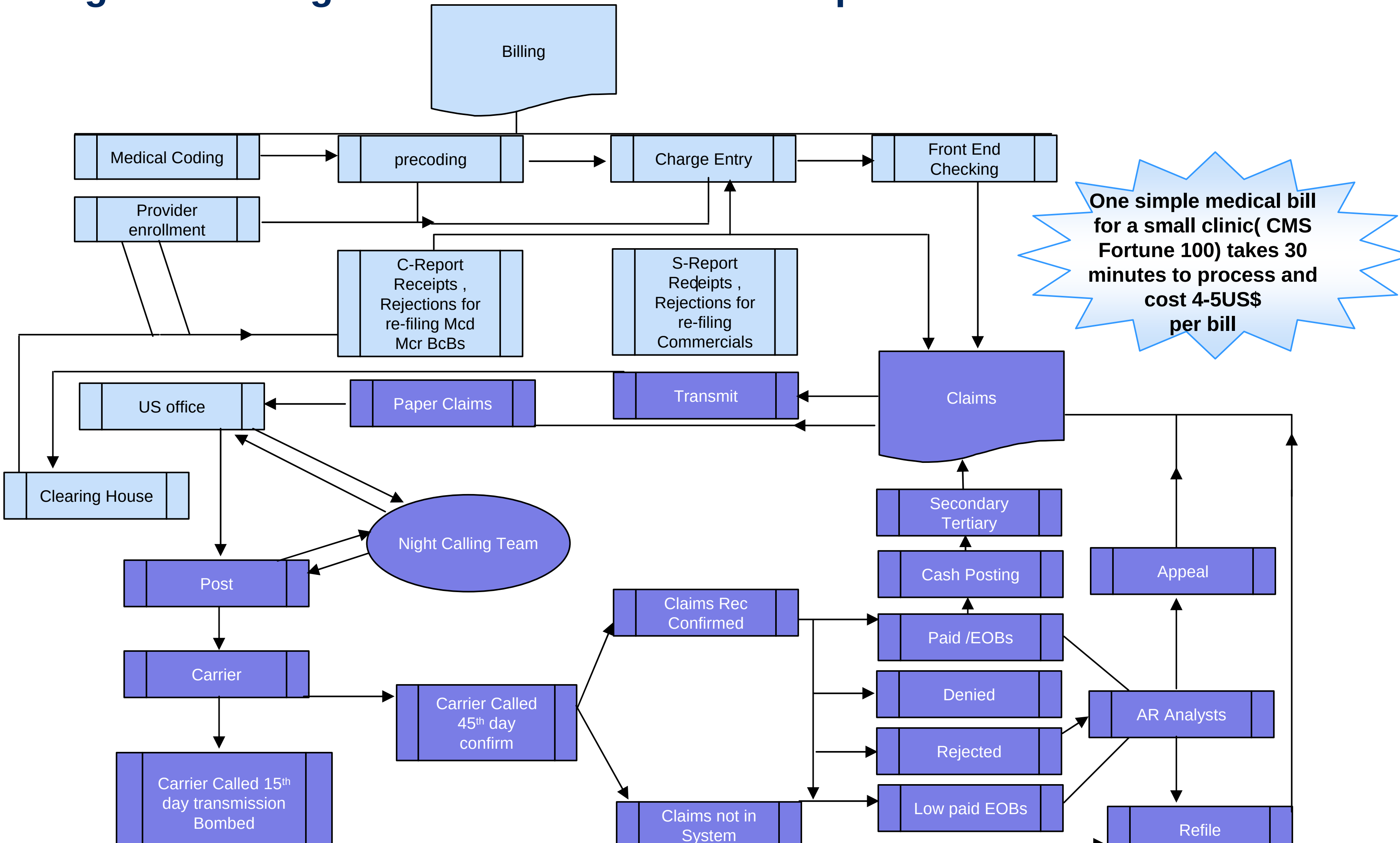
BPO Services	Complexity
Medical Billing	
Medical Coding	
Medical Transcription	

The training centers for medical transcription process faces a scarcity in trainable talent pool In India

Very Complex *Complex* *simple* *Very Simple*

Source: Interviews, Zinnov Analysis

The highest revenue generating process for the Indian Vendors is Medical Billing and Coding with the entire back office processes outsourced but..



Source: Literature Search, Interviews, Zinnov Analysis

..newer processes like teleradiology is served by just one Indian vendor; which is the next big wave

The main driver for Teleradiology is the shortage of radiologists in US

Due the shortage of radiologists in India the practice has not grown much beyond one vendor

- The only Indian vendor is the Bangalore based Teleradiology Solutions which has US certified and licensed radiologists.
- Teleradiology also has a center in Delhi.
- Wipro Infotech began using non-U.S. licensed radiologists to provide "preliminary" interpretations of images for U.S. hospitals in 2003.

The increase of radiologist talent pool will be witnessed within another 4 years time due to increased intake in paramedical institutions across India

Source: Interviews, Zinnov Analysis

..newer processes like teleradiology is served by just one Indian vendor; which is the next big wave

- The only Indian vendor is the Bangalore based Teleradiology Solutions which has US certified and licensed radiologists. It also has a center in Delhi. It has 40-50 hospitals as its clients and many of them are US hospitals
- Wipro Infotech began using non-U.S. licensed radiologists to provide "preliminary" interpretations of images for U.S. hospitals in 2003. Wipro halted the service because of intense criticism
- The American College of Radiology maintains that only US Board certified radiologist with malpractice insurance should be involved in Teleradiology
- Due the shortage of such radiologists in India it has not grown much beyond one vendor

The increase of radiologist talent pool will be witnessed within another 4 years time due to increased intake in paramedical institutions across India

**PACS - picture archiving and communication systems*

Source: Interviews, Zinnov Analysis

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Appendix

Appendix

- The US Healthcare market Structure

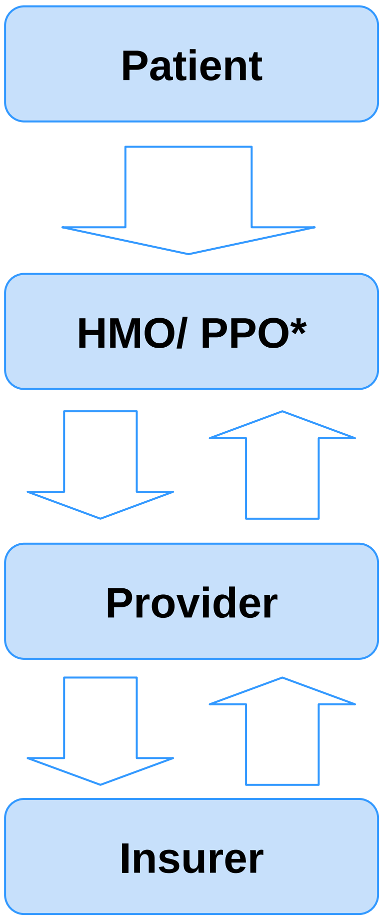
- The profiles of payer market leaders in US

- The profiles of provider market leaders in US

- The profiles of BPO vendor market leaders

- Healthcare BPO Case studies

Health-care system in US is primarily defined by the payers and the providers



HMO/ PPO*
- Manages the doctors lists
- Performs Pre-Adjudication process

Provider
- Provides medical facilitates

Insurer
- Performs Adjudication
- Provide fulfillment of payment

Key Entities

Payer- An organization or individual that pays for medical service. e.g. insurance organizations

Provider- An organization or individual that provides medical service. e.g. doctors, small clinics

Administrative service organizations (ASO)- Captive centers of various insurance organizations

Third Party Administrators (TPA's) – Small organizations formed by corporate to manage their in-house insurance funds

*HMO: Health maintenance organization; PPO: Preferred provider organization

Source: Zinnov Analysis

Additional information on the following topics are available in our full report. To obtain a copy of the full report, please send a mail to info@zinnov.com

Appendix

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- The profiles of payer market leaders in US
- The profiles of provider market leaders in US
- The profiles of BPO vendor market leaders
- Healthcare BPO Case studies

Zinnov Research Overview

Zinnov – About us

Company Overview

- We are a knowledge services and consulting company with offices both in US and in India.
- We help our clients reduce the time, money and risks involved in organizational initiatives using combination of consulting and knowledge solutions delivered by global teams.

Market Research

- **Research services**
  - Customized market studies
  - Competitive Benchmarking
  - Data Analytics
  - Market Intelligence
- **Go-To-Market Services:**
  - Help companies enter the India market by helping them scope and segment the market, provide on-ground sales and marketing support to tap into the local market.

Knowledge Services

- **Dedicated Knowledge Centers (DKCs):**
  - We provide dedicated teams that help our customers in the areas of market research, competitor analysis, business research, data analytics and pre-sales support. DKCs act as an augmentation to our customer teams and provide cost effective and high value services.
  - We have provided our research and consulting solutions to more than two dozen customers. Today, our client roster included reputed NASDAQ listed companies, small to medium sized independent software vendors, strategy consulting firms and other large enterprises in domains such as BFSI, IT services and Infrastructure management.

Zinnov research team can help clients with market intelligence, competitor analysis and go-to-market strategy

Zinnov

Market Intelligence

- Market News & Information tracking
- Pricing analysis
- Factors driving and restraining the market
- Market trends/ Technology trends/Regulatory trends
- Market sizing (revenues)
- Forecasting (revenue forecasting, others)
- Other Information/Research on demand
- Case studies – spanning various domains

Competitor Analysis

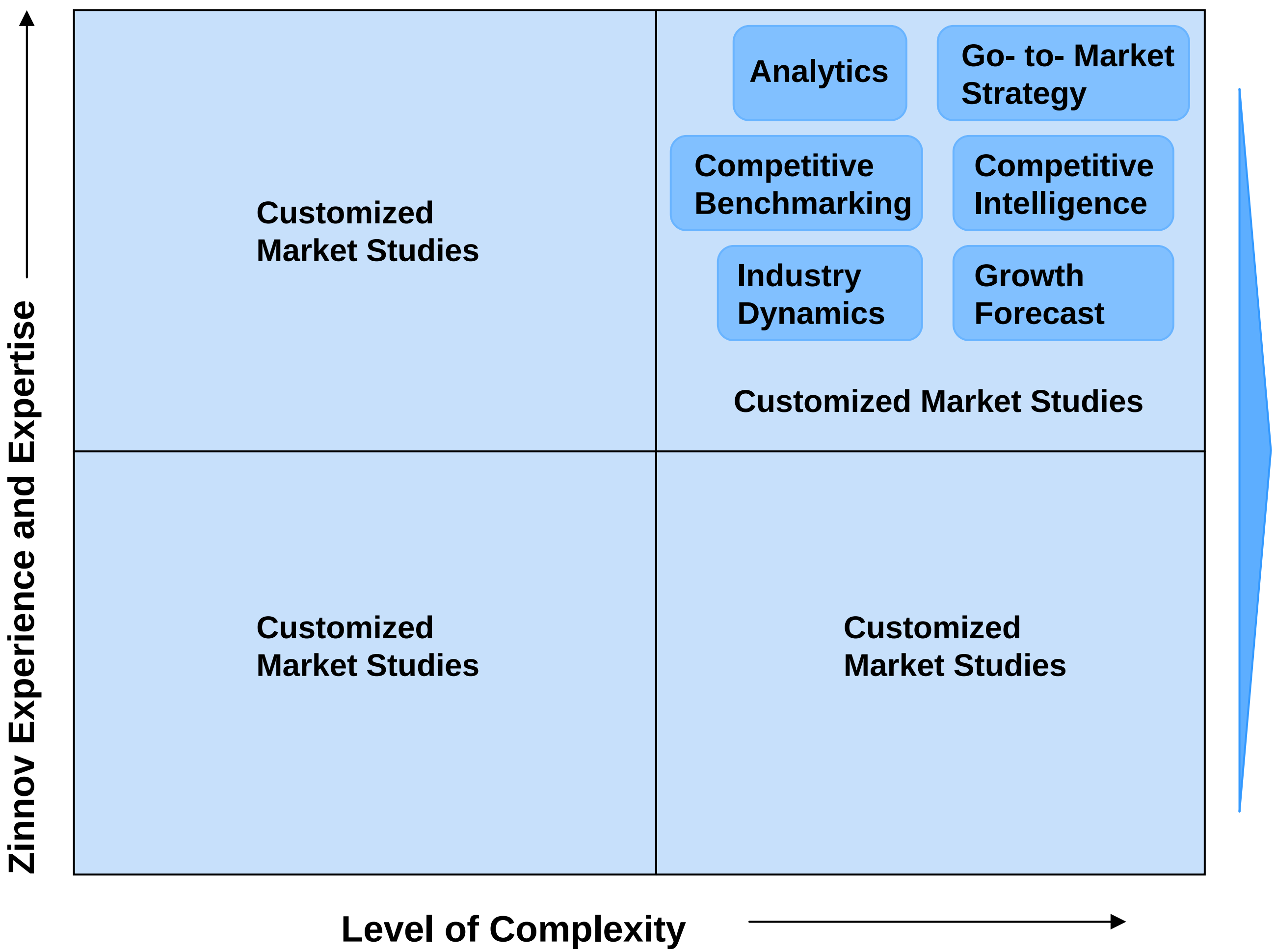
- Competitor information (processes, clients etc.)
- Competitive analysis (company profiles, market shares, product comparisons, benchmarking)
- Pricing analysis
- Customer/competitor financials

Go-to-market strategy

- Regulatory & legal information on the market
- Market summary & Market analysis (competitive scenario)
- Market sizing
- Untapped or under-tapped potential customers profiling
- Target customer evaluation and analysis

A. Market Research: Zinnov has a very strong Market Research Capability with expertise across the value chain, specifically in the high end space

Illustrative



Zinnov's Differentiators

- Rich experience with High end market research enabling strategic decisions such as go-to-market strategy
- Excellent primary and secondary research capability
- Excellent pool of resources with strong capability to create customized reports for clients in any sector

B. Financial Analysis: Zinnov has a strong Financial Analysis Capability which complements both market and business research

Illustrative

Financial Statements

- Balance Sheet
- Income Statement
- Cash Flow Statement

Ratio Analysis

Profitability ratios

- Returns - Return on equity; Return on Assets, etc.
- Margins - Gross Margin; Net Margin

Turnover ratios

- Total Asset turnover
- Fixed asset turnover
- Working capital turnover
- Inventory turnover

Liquidity ratios

- Current ratio
- Quick ratio
- Cash ratio

Solvency ratios

- Debt to equity
- Debt to total capital
- Interest Coverage
- Total Coverage

Market Valuation

- Share Price
- Market Value of Equity
- Enterprise Value

Multiple Analysis

Trading Multiples

Transaction Multiples

Business Research – Company Performance Evaluation

Market Research – Competitive Bench-marking and Intelligence

C. Technical Research: Owing to its rich and diverse experience with multiple IT R&D companies, Zinnov also has a strong Technical Research capability

Illustrative

Research on Technology sectors

Researching technical questions

Patent Searches

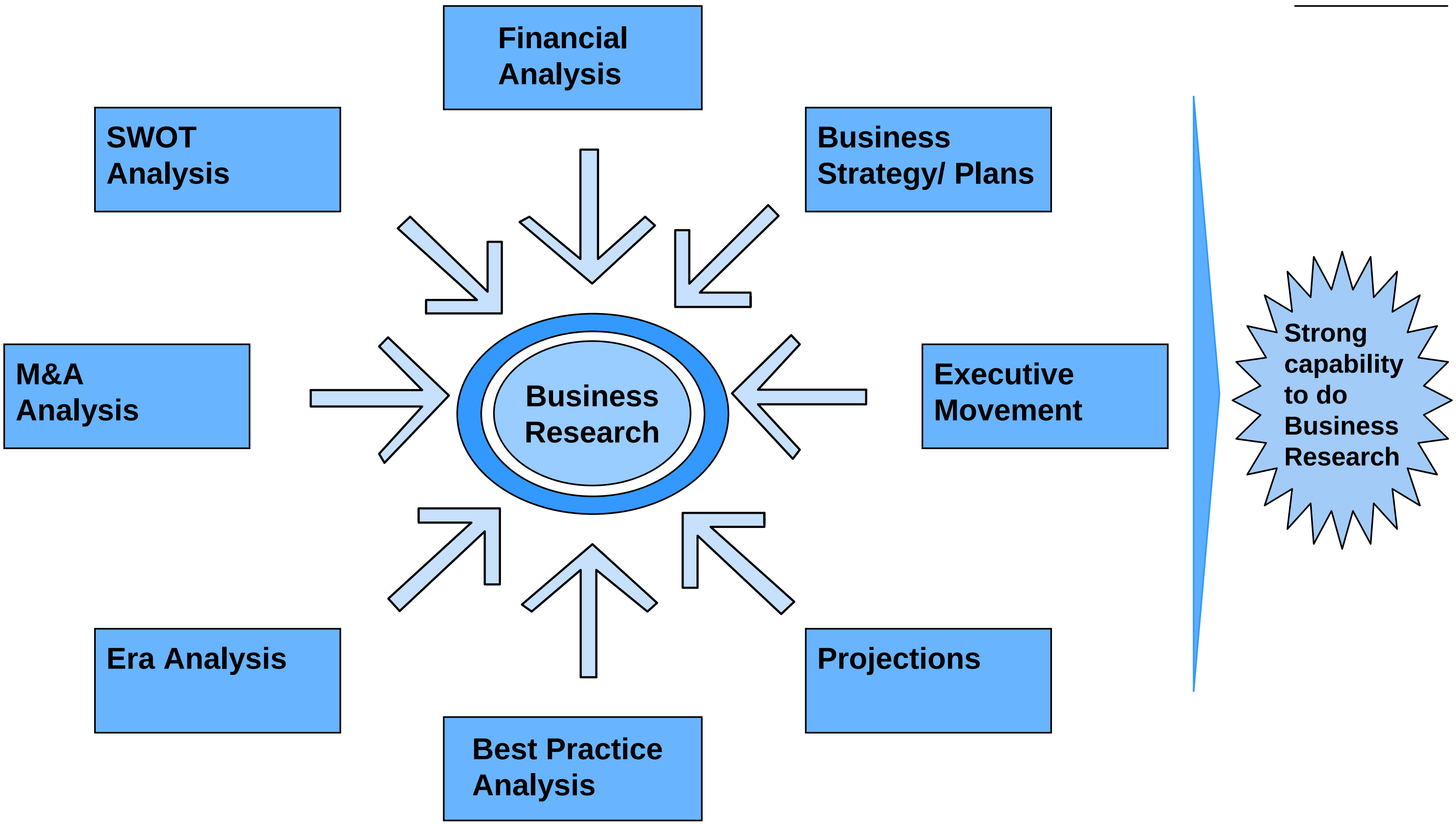
Rich Expertise

Zinnov's Differentiators
• Rich experience with Technology R&D companies • Rich experience with recruitment outsourcing for technical (IT) requirement for some of its clients gives Zinnov a very good exposure to researching technical questions

Zinnov's Capabilities
• Zinnov has the requisite research expertise to do IP research • Zinnov has also written a whitepaper on IP protection environment in India

D. Business Research: Zinnov has a strong Business Research Capability as well, covering various facets of business

Illustrative



E. Market Mapping – Competitive Mapping and Benchmarking

Illustrative

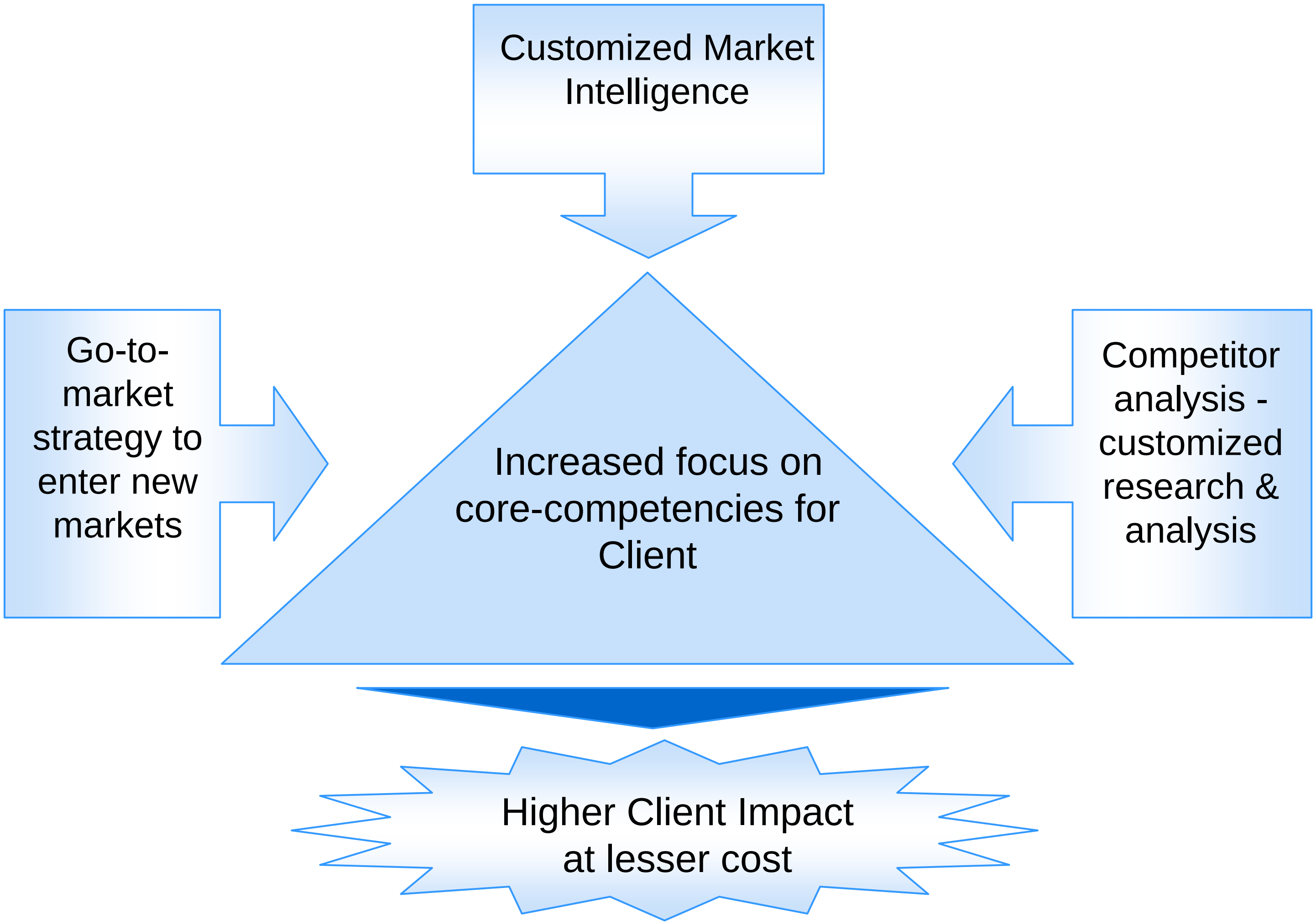
Financial Strength and Soundness
Margins - Gross
Margins - Operating
Margins - Net
Returns on Equity
Returns on Assets
Returns on Capital Employed
Solvency ratios - Debt to equity
Solvency ratios - Debt to total capital
Solvency ratios- Interest Coverage
Liquidity ratios - Current Ratio
Liquidity ratios – Quick Ratio
Liquidity ratios - Cash Ratio
Top line - Compounded annual growth rate (CAGR)
Trading Multiples

Capability Analysis
Management Team Expertise
Technological Capability
Products/ Services
Quality Processes
Market Share
R&D Investment/ Initiatives
Marketing Strategies
Geographical Presence
Years of existence
Personnel
Past successes and failures
Future strategies/ plans
Clientele
Alliances/ Partnerships/ M&A
Enterprise Business Solutions

Competitive Benchmarking

Best Practices

Our clients are benefited by cost and time effective research that Zinnov offers



Zinnov is proud to maintain 100% client references. Our clients include reputed consulting firms and industry organizations

Your comprehensive report on our competitors enabled us to make informed and objective decisions on penetrating global markets

-SVP, Marketing
Incentive Management Software

Thanks for the quick turnaround of the survey analysis. We look forward to your help in producing similar reports for all our industry surveys

- Executive Director
Industry Organization

You help us compete with McKinsey in India

- **Principal, Management Consulting Firm**

The level of details you capture and analyze is great.

- VP, Operations
Employment Screening Company

The quantitative analyzer is one of the most flexible model I have ever seen. We used it for analyzing 'what if' scenarios in our meeting with the client and they loved it!

- Principal
Management Consulting Firm

Zinnov
Offshore Research and Consulting

Thank You !

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