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Analytical study on the application of ICT by Private Sector Commercial Banks in India

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Abstract
India's commercial banks, be they public players or private players, embraced information and communications technology (ICT) for their operations over two decades ago. Twenty years is good enough to judge whether the said players reaped the benefits of their investment in ICT. Hence the researcher sought to verify whether the players had reaped a rich harvest from their investment in ICT. The researcher restricted himself to two leading private sector players, namely, ICICI Bank and HDFC Bank in pursuit of the verification since the two embraced ICT almost at the same time. The researcher considered three metrics for the purpose, namely, employee cost, net profit, and reserves or retained earnings. The findings revealed that the level of performance of the two banks in the post-ICT phase had been the same, by and large. However, the ICICI Bank did not clock a secular rise in the net profit growth space. Its performance in the net profit growth space and the reserves growth space was characterised by a fits-and-starts pattern. The silver lining is that in the reserves space, the bank's growth stabilised from FY 2012 onwards and hopefully, the trend will be sustained. In the case of HDFC Bank, a secular rise was witnessed in the net profit growth space. Further, no fits-and-starts trend was discernible in the growth of net profit. The growth in the net profit space was consistently incremental. But in the reserves space, the growth was erratic and moved in fits-and-starts. Investment in ICT is not the be-all and end-all of banking. It should be supplemented by strategic tools. Only then the banks will have benefited from their investment in ICT.

Keywords: *Be*-all and end-all; fits-and-starts; ICT; metrics; secular rise; silver lining

1. Introduction
The Indian banking industry is no longer the staid industry that it was, more than a couple of decades ago. It has since become lean, mean, aggressive and tech-savvy, forced to do so by circumstances and not by choice. One witnessed the nationalisation of some private players in the post-1969 and post-1980 phase. New private players were permitted to participate in the industry subsequently. Consolidation across private players also happened during this phase, with some of them seeing the writing on the wall. The writing conveyed that to stay afloat in the business, they had to shape up or ship out. In the resultant scenario, a small but efficient bunch of private players emerged. The odds were clearly stacked against them initially, though. The odds were stacked in favour of the public players, for obvious reasons. To elbow their way through the crush, the private players had no alternative but to strategize. Investment in ICT emerged as the strategy. Thus, two categories of private players came to the fore: The ICT-driven new generation banks and the ICT-driven old generation banks. The pendulum began to swing the private players' way slowly but steadily, thanks to the strategy. Sensing the imminent threat to their dominion over the banking space, the public players too decided to acquiesce in ICT-driven banking. The move led to the emergence of a level playing field for the public and private players. The winner would be the one that exploited the ICT platform better since it would help one to gain an edge over the rivals through product differentiation and service differentiation. What one gets to see on the ground today convinces one that the private players have exploited the ICT platform better. Even across the spectrum of private players, one can drill down to individual players to ascertain which of them has exploited the ICT platform the most.

2. Statement of the Problem
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3. Statement of the Problem

With the eventual emergence of a consensus that the private players have exploited the ICT platform better, it has become relevant to drill down to that private player that has exploited the ICT platform the most. The present study addresses this requirement by examining the performance the two top players in the private banking space in the country today, namely the ICICI Bank and the HDFC Bank.

4. Review of Literature

1. Banking industry in India is swiftly evolving thanks to rising mobile and internet penetration in the country and technological innovations disrupting the established processes (Deloitte and CII, 2020) [2]. In the last two years, technologies like Digital Wallets, EMV Chip-based Cards, and two-factor authentication via SMS-based One Time Password (OTP) have become mainstream in India. These innovations were meant to ease payment transactions and make them more secure although one is not sure whether such security obtains. Similarly, digital wallets are increasingly replacing cash for purchases and payments, especially for mobile phone recharge, DTH service plans recharge, utility bills, transportation services, and even for online money transfers. Almost all major banks in India have launched their own version of a digital wallet with varying degrees of functionalities hoping to tap into the growing smartphone user market. With the usage of smart phones rising, concerns on cyber frauds associated with digital wallets have been rising too.
2. Banks have been trying to make the transition and push towards cashless and mobile banking as smooth and as seamless as possible for their customers and for themselves (Delshad, 2016) [3]. The odds have been against them of course. Lack of banking infrastructure, low level of smartphone penetration and the typical penchant for cash-based transactions on the part of the Indian customers are surely among the said odds. The State Bank of India avers that it will be more aggressive in its digital journey. A senior executive of the bank has a word of caution for those who automatically assume that the public sector behemoth is not adequately digital, though. She reiterates that her bank is more digital than the rest. Referring to her bank's mobile wallet Buddy, she says that her bank is witnessing 5x more registrations daily. Buddy already has 5.5 million downloads to show against its name.
3. HDFC Bank is convinced that it is now reaping the benefits engendered by the digital transformation it has been driving over the years (Delshad, 2016) [3]. Recalling the tagline "Go digital: Bank Aapki Muthi Mein" that it coined and popularised a couple of years ago, a senior officer of the bank said that the bank had simplified the products at the back-end by then. Digital transactions rose from 44 percent in 2012-13 to 71 percent in 2015-16, consequently. Describing this as a booster shot, the officer said that the bank's payment app PayZapp had been witnessing between 19,000 and 24,000 downloads every day since demonetisation. There had been a 2x rise in the demand for POS terminals from merchants and that includes self-employed individuals like doctors and lawyers.
4. ICICI Bank announced on Sep 8, 2016 that it had deployed 'Software Robotics' in over 200 business processes across various functions of the bank (ICICI Bank, 2016). The bank is the first in the country to deploy 'Software Robotics'. The latter emulates human actions to automate and perform repetitive, high volume and time-consuming business tasks, cutting across multiple applications. The software robots have reduced the response time to customers by up to 60 percent and raised accuracy level to 100 percent. It has thus raised the bank's productivity and efficiency. It has also helped the bank's employees to focus on value-added and customer-related functions. The software robots now execute over 10 lakh banking transactions every working day. Retail banking operations, agri-business, trade and forex, treasury and human resources management are among the 200 business process functions. The bank has implemented the 'Software Robotics' platform mostly in-house, exploiting the recent advancements in artificial intelligence like facial and voice recognition, natural language processing, machine learning and bots, among others. The software robots are ringing in superior operational efficiency, higher accuracy, and a massive reduction in processing customer requests. With its retail banking growing at over 25 percent annually, the bank is better positioned to handle larger volumes with the same resources.
5. ICICI Bank's software robots will capture and interpret information from systems, recognize patterns and run business processes across multiple applications to execute activities including data entry and validation, automated formatting, multi-format message creation, text mining, workflow acceleration, reconciliations and currency exchange rate processing (ICICI Bank, 2016). Fully automated and round-the-clock 'Touch Banking' branches, tab banking, banking on Facebook and Twitter, contactless debit and credit cards, 'Pockets', a digital bank on mobile phone and 'iMobile SmartKeys', a payment service using a smartphone keyboard are amongst the technology-driven innovative services introduced by the bank. As of June 30, 2016, ICICI Bank had serviced its large customer base through a multi-channel delivery network of 4,451 branches, 14,073 ATMs, call centres, internet banking (www.icicibank.com), mobile banking, banking on Facebook & Twitter and 'Pockets'.
6. State Bank of India (SBI) is riding the digital wave with futuristic banking technology products and activities that add cutting edge to the digital skills programme for empowering rural women (Anil, 2016) [1]. Shaking off its staid legacy, the technology-challenged bank has finally embraced digital revolution. Already, private banks are said to have been poaching its gen next customers. The bank believes that its Gen Y customers seek innovative technology and thus arises the need to stay attuned to the needs of the Gen Y customers. This explains the bank's decision to offer a slew of digital services to the customers, on the go. On its 61st founding day observed in the month of July, the bank announced the introduction of as many as seven innovative digital products, namely, SBI Buddy, Mingle, State Bank Scribe, SBI Digi Voucher, SBI

Video Statement, SBI Smart Watch, and the Digital Village programme. The announcement surprised all stakeholders although it was common knowledge that SBI was strong in its back-end technology. However, the bank did not see eye to eye with its tech-savvy customers who wanted everything at their fingertips and deemed it passé to visit even an ATM kiosk.

5. Research Gap

The reviewed literature has done well to trace the developments in the financial technology space of the banks. However, it has not covered in depth the level of exploitation of financial technology or to be more specific, the level of exploitation of the ICT-driven solutions by the banks. This was warranted given the huge investments the banks had made in the ICT infrastructure upfront and at periodic intervals. It is this gap the present study seeks to bridge.

6. Scope of the Present Study

The study confines itself to the benefits that ICICI Bank and HDFC Bank reaped from their investment in ICT along various metrics.

7. Objectives of the Study

The objectives of the researchare to:

1. Gauge the impact of the respondent banks' ICT investment on their employee cost
2. Gauge the impact of the respondent banks' ICT investment on their net profit and reserves

8. Research Design

Research methodology

The study is descriptive in nature and has used the 'fact-finding' survey method

Sources of data

Data required for the research has been collected from the secondary sources alone, namely, the Annual Reports of the two respondent banks, namely the ICICI Bank and HDFC Bank. In addition, the researcher interacted extensively with other stakeholders associated with the two respondent banks

Data processing and analysis plan

Data has been processed and analysed by using statistical tools like compounded annual growth rate (CAGR).

9. Performance of ICICI Bank on various metrics for the period FY 1999-FY 2017

In the following paragraphs, the employee cost, net profit, and reserves of ICICI Bank are examined.

Employee cost

The following Table reveals the employee cost of the bank for the period FY 1999-FY 2017.

Table 1: Employee cost of ICICI Bank for the period FY 1999-FY 2017

FY	Employee cost (in INR Crs)
1999	18.19
2000	36.37
2001	51.71
2002	147.18
2003	403.02
2004	546.06
2005	737.41
2006	1082.29
2007	1616.75
2008	2078.90
2009	1971.70
2010	1925.79
2011	2816.94
2012	3515.28
2013	3893.29
2014	4220.11
2015	4749.88
2016	5002.35
2017	5733.71
CAGR (%)	37.66

(**Source:** Annual Reports of the bank)

It is clear from the foregoing Table-1 that the employee cost of the bank grew at a compounded annual growth rate (CAGR) of 37.66 percent during the period under review.

Net Profit

The following Table reveals the net profit of the bank for the period FY 1999-FY 2017

Table 2: Net profit of ICICI Bank for the period FY 1999-FY 2017

FY	Net profit (in INR Crs)
1999	63.36
2000	105.30
2001	161.10
2002	258.30
2003	1206.18
2004	1637.09

2005	2005.20
2006	2540.07
2007	3110.22
2008	4157.73
2009	3758.13
2010	4024.98
2011	5151.38
2012	6465.26
2013	8325.47
2014	9810.48
2015	11175.35
2016	9726.29
2017	9801.08
CAGR (%)	32.32

(**Source:** Annual Reports of the bank)

It is clear from the foregoing Table-2 that the net profit of the bank grew at a compounded annual growth rate (CAGR) of 32.32 percent during the period under review.

Reserves

The following Table reveals the reserves of the bank for the period FY 1999-FY 2017

Table 3: Reserves of ICICI Bank for the period FY 1999-FY 2017

FY	Reserves (in INR Crs)
1999	143.33
2000	952.69
2001	1092.26
2002	5635.54
2003	6320.66
2004	7394.16
2005	11813.20
2006	21316.16
2007	23413.92
2008	45357.53
2009	48419.73
2010	50503.48
2011	53938.83
2012	59250.09
2013	65547.84
2014	72051.71
2015	79262.26
2016	85748.24
2017	95737.57
CAGR (%)	43.53

(**Source:** Annual Reports of the bank)

It is clear from the foregoing Table-3 that the net profit of the bank grew at a compounded annual growth rate (CAGR) of 43.53 percent during the period under review.

10. Performance of HDFC Bank on Various Metrics for the Period FY 1999-FY 2017

In the following paragraphs, the employee cost, net profit, and reserves of HDFC Bank are examined.

Employee Cost

The following Table reveals the employee cost of the bank for the period FY 1999-FY 2017

Table 4: Employee cost of HDFC Bank for the period FY 1999-FY 2017

FY	Employee cost (in INR Crs)
1999	22.06
2000	48.53
2001	78.00
2002	109.24
2003	151.95
2004	204.09
2005	276.67
2006	486.82
2007	776.86
2008	1301.35
2009	2238.20
2010	2289.18
2011	2836.04
2012	3399.91
2013	3965.38
2014	4178.98
2015	4750.96
2016	5702.20
2017	6483.66
CAGR (%)	37.13

(**Source:** Annual Reports of the bank)

It is clear from the foregoing Table-4 that the employee cost of the bank grew at a compounded annual growth rate (CAGR) of 37.13 percent during the period under review.

Net Profit

The following Table reveals the net profit of the bank for the period FY 1999-FY 2017

Table 5: Net profit of HDFC Bank for the period FY 1999-FY 2017

FY	Net profit (in INR Crs)
1999	82.40
2000	120.04
2001	210.12
2002	297.04
2003	387.60
2004	509.50
2005	665.56
2006	870.78

2007	1141.45
2008	1590.18
2009	2244.95
2010	2948.69
2011	3926.39
2012	5167.07
2013	6726.28
2014	8478.40
2015	10215.92
2016	12296.23
2017	14549.66
CAGR (%)	33.30

(**Source:** Annual Reports of the bank)

It is clear from the foregoing Table-5 that the net profit of the bank grew at a compounded annual growth rate (CAGR) of 33.30 percent during the period under review.

Reserves

The following Table reveals the reserves of the bank for the period FY 1999-FY 2017

Table 6: Reserves of HDFC Bank for the period FY 1999-FY 2017

FY	Reserves (in INR Crs)
1999	138.93
2000	508.24
2001	669.49
2002	1669.96
2003	1969.69
2004	2408.54
2005	4210.40
2006	4986.39
2007	6113.76
2008	1142.80
2009	14220.95
2010	21061.85
2011	24911.13
2012	29455.04
2013	35738.26
2014	42998.82
2015	61508.13
2016	72172.13
2017	88949.84
CAGR (%)	43.19

(**Source:** Annual Reports of the bank)

It is clear from the foregoing Table-6 that the reserves of the bank grew at a compounded annual growth rate (CAGR) of 43.19 percent during the period under review.

11. Comparison of the Performance Metrics of the Respondent Banks

The following Table compares the performance metrics of the two respondent banks since the two banks embraced ICT almost the same time and belong to the same category, namely, new generation hi-tech private banks.

Table 7: Comparison of the performance metrics of ICICI Bank and HDFC Bank (FY 1999-2017)

Bank	CAGR (%)		
	Employee cost	Net profit	Reserves
ICICI Bank	37.66	32.32	43.53
HDFC Bank	37.13	33.30	43.19

(**Source:** Annual Reports of the bank)

The performance of the two banks has been almost the same along the metrics applied during the period under review. Hence a comparison in absolute terms is attempted in the following Table to arrive at the appropriate conclusions.

Table 8: Comparison of the performance of ICICI Bank and HDFC Bank in absolute terms (FY 1999-2017)

Bank	Employee cost (in INR Cr)		Net profit (in INR Cr)		Reserves (in INR Cr)	
	FY 1999	FY 2017	FY 1999	FY 2017	FY 1999	FY 2017
ICICI Bank	18.19	5733.71	63.36	9801.08	143.33	95737.57
HDFC Bank	22.06	6483.66	82.40	14549.66	138.93	88949.84

(**Source:** Annual Reports of the bank)

In the case of ICICI Bank, it is clear from Table-2 that in the net profit space, the gap between the two banks has widened during the period under review. A closer scrutiny at the financials reveals that the huge gap in the net profit space is attributable to the setback the ICICI Bank suffered in the net profit space in FY 2009 and FY 2016. In FY 2009 and FY 2010 the bank did its best to keep its employee cost under control and succeeded in the effort. In fact, its employee cost for FY 2009 and FY 2010 was lower than the employee cost it incurred in FY 2008. All the same, its net profit took a hit in FY 2009 thus proving that it had nothing to do with the adoption of ICT by the bank. Factors like credit risk and operational risk must have led to the setback. Similarly, it can be concluded that the setback it suffered in the net profit space in FY 2016 had nothing to do with the adoption of ICT by the bank. Factors like credit risk and operational risk must have led to the setback.

In the case of HDFC Bank, it is clear from Table-5 that the net profit registered a secular rise during the period under review. In other words, never did the profit register a de-growth during the period under review. It was growth all the way.

Researcher's Recommendations

1. ICICI Bank should chase a secular rise in the net profit space. Going by the analysed data, one gets the impression that the bank chased overambitious and pretentious targets. Eventually, it was hoisted by its own petard.
2. On the other hand, had the ICICI Bank proceeded at a healthy pace as it did in the pre-2003 phase, the outcome would have been healthier. A quantum jump in net profit to INR 1,206.18 crores in FY 2003 from INR 258.30 crores the previous year, gives the game away. The resources of a bank are comprised of borrowed funds on which it is paying interest. Banks cannot

afford to expose their relationships and their reputations.

3. One does not find such a quantum jump in the net profit space of HDFC Bank during the period under review. HDFC Bank, on the other hand, trod carefully. Its net profit figure moved up a gear in FY 2006, FY 2008, FY 2011, FY 2013, and FY 2016. The bank is now cruising comfortably in the net profit space, steadily raising its net profit by INR 2,000 crores plus every year.
4. Investment in ICT does not represent anend, for the banks. They are required to be prudent money managers all the time. After all, their working capital is comprised of depositors' money, mostly and the banks are required to pay interest on the depositors' money. Investment in ICT should ideally supplement the banks' efforts to grow their bottom line at a healthy pace without at the same time exposing the banks to anticipated risks.
5. Investment in ICT is not the be-all and end-all of banking. It should be supplemented by strategic tools. Only then the banks will have benefited from their investment in ICT

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