

AUTOMATION GIVING BIRTH TO MOONLIGHTING CAREERS WITH SPECIAL REFERENCE TO I.T. INDUSTRY

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Abstract: Aims: 21st century is the century of knowledge and only those individuals or organizations which harness this knowledge would only be successful in their endeavours. New and unique technologies are coming everyday and trying to capture as much market-share as possible rendering the existing one's as obsolete. This gives rise to an important question of the time that what would be the future of those individuals who are working in this information technology industry and trying hard to remain competitive with various kinds of up-gradations in their existing intellectual knowledge base. Relevance: While analysing the recent lay-offs in the IT industry in the financial year 2015-16 and 2016-17 by big players like Cognizant, Cisco, Capgemini SA, it can be inferred that jobs are being automated very rapidly and IT industry may soon cut down its human workforce to bare minimum requirements. This makes the IT workforce look for various alternatives for their survival and future security. This has been investigated many times by various analysts that jobs are being eradicated quickly in the IT industry but only a few have critically examined the new opportunities that can be or are being created due to these dynamics of industry. Research Methodology: A qualitative multi-reports meta-data analysis has been used in this paper for data synchronization to gain fruitful insights into this issue. Collection of data has been done from real time case studies available in the literature and other online resources. Findings: It has been found that although the speed of workforce cut-down with big players in the market has been exponential but parallelly there has been a creation of new kind of jobs for whom special kind of knowledge, skills and competencies are required. Individuals working in this industry are looking for various coping strategies to remain abreast with the dynamics of rightsizing of the organizations. They prefer either of the alternatives from Skill Diversification, Skill Enrichment, Planning and working towards new ventures, Going to Academia parallelly for knowledge enhancement etc. Conclusion: This has been found out that all this can only be possible if an individual is excellent at multi-tasking. This is giving rise to a new phenomenon of multi-jobbing which is also referred to as moonlighting in the context of emerging human resource development. Organisations are also trying to keep track of the moonlighting practices of their key knowledge workers for ensuring their retention because key knowledge workers are the primary assets of the firm which decide its growth and prosperity even when there are unpredictable dynamics in the industry. Recommendations: The following recommendations can be made on the basis of the findings;

The potential of doing multitasking/ moonlighting needs to be measured at the time of recruitment itself in order to minimise the lay-offs.

1. Right fitment of individuals is necessary for optimum utilization of work-potential.
2. Organizations need to plan in advance the transition of jobs and the job incumbents as per the changing requirements of the market.
3. Re-skilling needs to be considered when examining new profiles in the organization and exploring causes of moonlighting or freelancing employees.

Keywords: Automation, Moonlighting, Knowledge Workers, Knowledge Economy, IT/ITes Professionals, Skills in Demand and New Opportunities in IT Industry

INTRODUCTION

“The illiterate of the future are not those who can't read or write but those who cannot learn, unlearn and relearn.”- Alvin Toffler

The theory of unlearning and relearning is not new. It has been accepted by various philosophies through centuries for human and societal development but in the era of rise of Industry 4.0, every individual who is a part of this workforce needs to practice this theory to be able to survive and prosper through the challenges of this knowledge century. This knowledge era is certainly evolved through technologies leading to knowledge creation and management which is provided by Information technology and the related domains. The individuals working in this IT industry are always regarded as those having extra ordinary skills about learning, unlearning and relearning with ever evolving technologies. Multitasking is also seen as one of the traits IT professionals should possess. But today mere multitasking does not provide them job security in this industry in the long run. Job profiles are no longer in demand but specialized skills are. Professionals strive to build their skills through diversified ways. One can witness many people doing a

variety of jobs to earn extra but when it arises as a plight, it needs to be examined and addressed carefully.

In the modern era of digitalisation, when everything is going online; knowledge management systems are replacing the requirement of humans with every machine and the need of humans is decreasing in the IT (Information Technology) or ITes (Information Technology enabled services) industries wherein a lot of technical manpower used to be the backbone of the firm until the very last decade, there is a need to understand where this manpower would work if they don't have any other skill to work in.

The recent trends of layoff exercises by top IT /ITes organizations show the constantly decreasing requirements of manpower in this industry in future. This has raised a very significant question of this time that how this manpower would survive in absence of alternative skills and adequate career planning. Many professionals do opt for double jobbing to cut down their fears of absolute unemployment in case of being fired without sufficient notice.

One can have a glance below for recent examples of big IT and ITES firms laying off significant number of employees for a variety of reasons like cost cutting, increased automation and what not.

Table 1: Layoffs in IT and ITES Firms in The Time period 2015-17

S. No.	Organization	Industry	Layoffs (Approx)
1	Cognizant	IT	15000 employees
2	Cisco	IT	14000 employees
3	DXC Technology	IT	6000 employees
4	Capgemini SA	IT	7000 employees
5	Infosys	IT	6000 employees
6	Wipro	IT	4000 employees
7	HCL Tech	IT	3000 employees
8	Tech Mahindra	IT	3000 employees
9	Snapdeal	Ites- Shopping Website	Almost 1000 Employees
10	LeEco	IT Chinese Smartphone maker in INDIA	Exiting India by cutting 85% manpower
11	Yepme	Ites- Shopping Website	Reduced headcount by 80%
12	PropTiger.com	Ites-Online Reality Portal	200 Employees
13	Stayzilla	Ites- Homestay Venture	200 Employees
14	Flipkart	Ites- Shopping Website	700 Employees

Table 1: Reports about IT Layoffs by The Hindu (2018) , CNBC (2018), Business Insider (2018) etc.;

(Source: retrieved from their urls listed in the references from no. 12 to 18 ; last accessed 13 February 2018)

Reasons stated for handing over pink slips to the employees:

1. Cash crunch due to investment slump
2. Performance of employees not up to mark
3. Technology and skill obsolescence

Be seeing the quantum of layoffs in the IT and ITES industry and the absence of new opportunities in the near future, people are bound to plan in advance for the contingencies they may face if they are fired suddenly, so they practice double or even multi-jobbing in a field which is not much linked to their primary occupations. This may provide them with a cushion of relaxation in tough times for taking a smooth transition to another job in a different field without much intricacy and ambiguity.

LITERATURE REVIEW

The available literature has mostly focussed on the reasons and motivations to practice multi-jobbing. There are researches available which focus on the consequences of multi-jobbing like imbalance in work-life, effects on job satisfaction and organizational citizenship behaviour or loyalty (Jamal, 1986).

Paxon & Sicherman (1994) have defined multiple job holding as the practice in which individuals hold two or more jobs simultaneously. Several researchers (Huiskamp, Sanders & Van den Bossche, 2011) have assumed and concluded that moonlighting may add to the enhanced functioning of labor markets but little evidence is available to support this hypothesis in the literature (Dorenbosch, Boneschansker, Sanders & Koppes, 2013; Wu, Baimbridge & Zhu, 2009).

As in the today's knowledge oriented economies, the responsibility of managing careers is solely considered the responsibility of the individuals, it has become the need of the hour for working people to be proactive at work and screening and grabbing the appropriate opportunities to switch jobs according to their knowledge, skills and dynamically updating capabilities. This phenomenon has promoted the thrust on holding multiple jobs.

According to the available literature Shisko and Rostker (1976), Boheim & Taylor (2004); Kimmel & Conway (2001); Panos, Pouliakas & Zangelidis (2014), Huiskamp et al. (2011) people generally do multi-jobbing for the following main motives. They usually want to make both ends meet or recover from their financial stressful conditions when they are not able to meet their expenses through their primary jobs. Further, they need to upgrade or diversify their skill levels when they want to stay abreast and competitive in shrinking employment opportunities in a developing economy. Also, most of the moonlighters practice it for creating extra wealth for leisure or extra responsibilities of the family and for having job enrichment if the primary and secondary jobs are carried out in similar industry. Last not the least, their desire behind this practice is most of the times, becoming their own bosses with their hardwork, i.e. they do

it for becoming entrepreneurs for which they can't afford to leave their primary jobs before reaching the breakeven point.

This implies that individuals don't do multiple job holding just for earning more and more but there are a variety of reasons prevailing for supporting these practices. In the case of developing countries which generally undergo economic crisis, professionals keep themselves ahead of the upcoming situations of workforce reduction and rightsizing exercises by developing a secondary occupation well ahead the actual contingency.

There are not much evidences available on the investigations on the consequences of multiple job holding for individuals or for their organizations but in the available literature (Meyer & Allen, (1997), Dorenbosch et al., (2015), Wright and Kehoe (2007), Morrow (1983); Reichers (1985), Panos et al., (2011)) both the positive and negative attitudes of employees practicing moonlighting have been discussed. Some of which can be summarized as follows. Organizational commitment is divided among two occupations and employees are not able to deliver their performance effectively and ultimately landed into burn outs and turnovers. Individuals have competing commitments inside and outside their organizations due to multi-jobbing and they have limited time and energy to fulfil them, so they ultimately land into less loyalty towards their organization. Multi-jobbers tend to be more engaged in their works having peculiar traits of supreme work satisfaction, high enthusiasm, job variety and job autonomy. There is a greater trend of job mobility in multiple job holders. The ambitions to become one's own boss i.e. entrepreneurship is one of the most sought out reasons for practicing multi-jobbing now-a-days.

RESEARCH METHODOLOGY

A qualitative multi-reports analysis i.e. meta-data analysis has been used in this paper for data synchronization to gain fruitful insights into this issue. Collection of data has been done from real case studies which are available in the literature and in the internet resources.

OBJECTIVES

- To study the transformation of job security concept into employment security in IT/ITes industry in India in lieu of moonlighting practices.
- To study the interplay of moonlighting practices and skill building of IT/ITes professionals.
- To list out new skills in IT/ITes industry in demand and the opportunities created thereby.

Dynamics of Jobbing in IT Industry in Industry 4.0

21st century is the century of knowledge and those economies who would be harnessing this knowledge would be gaining the world leadership and influencing the policymaking decisions of the same. Information technology industry which is often acronymed as IT industry has the largest number

of knowledge workers in any country. These knowledge workers decide the future of a country in technological and ultimately economical growth by commercialization of these technologies. Many key players in the IT industry are opting for various jobbing transformation in the light of increasing Automation & related evolving technologies. This can also be seen by the report by one of the world's largest technology reporter ET Tech (Economic Times Technology).



Fig. 1: Key Jobbing Initiatives Being Taken by IT Industry Organisations (2017)

Fig. 1: Trends of Key jobbing initiatives in IT industry in light of the barriers to automation in India in 2017. Adapted from 'IT-BPM employees in India will need new skills to survive' by Mandavia Megha, 2018, *ET Tech*, January 5, 2018.

Source: (<https://tech.economictimes.indiatimes.com/news/corporate/it-bpm-employees-in-india-will-need-new-skills-to-survive/62376532>; last accessed 13 February 2018)

This report shows that deploying larger fractions of part time or multi-skilled talent and re-skilling of existing employees are two of the key jobbing initiatives being taken by IT firms to adapt to the ever evolving automation. This automation also comes with its own challenges which include acquiring matching talent who can function on such technologies and provide a competitive edge to the organisation in this era. Availability of such talent is the biggest barrier to automation as shown in the report.

IT industries mainly employ the knowledge workers specialised in specific technologies but with the changing dynamics of markets and in the light of the progression of events like professionals continue to strive for employment security through constantly updating their skills and knowledge according to the latest technologies in order to plan proactively to avoid pink slips. These threats have forced the IT professionals in India to opt for multi-jobbing or moonlighting along with their primary jobs, to be able to meet their livelihoods in all situations. On the other side, many IT professionals also do moonlighting because

they have a deep desire to be entrepreneurs but can't take the decision straight away to leave their jobs and start their venture with their sprouting ideas. So, they try to work upon their start ups along with working on their primary jobs and wait till the breakeven point is met. Till the achievement of breakeven, they constantly do multi-jobbing to fulfil both the commitments of the primary job organization and their own venture. This is evident by the increasing number of IT start-ups in the last decade.

- Constantly obsolescing technologies.
- Automations and Artificial Intelligence.
- Technology diffusions from developed nations.
- Economic Crisis adding to the already less manpower requirements due to above reasons.

The Cambridge Dictionary (2010) defines moonlighting as "paid work that you do in addition to your normal job, especially without telling your employer" This is what is being done by the IT professionals in this dynamic phase

of growing automation and rapidly outdated skills. People do work on a 9 to 5 job with an IT firm and simultaneously perform freelancing assignments in the evenings or at weekends for a variety of reasons. When people know that they have an expertise in an emerging technology, as discussed earlier, they tend to render their services as freelancers to the beneficiary firms in return of a payment. In this process, people search for those employers who require their specialised services and deliver when connected to the right ones. This is called moonlighting whereas when employers search for specialised talent to fulfil their short term requirements out of the available talent pool in the market, it is termed as crowd-sourcing. It is also being used for senior management roles in some companies now. Traditionally firms used to do poaching for key positions in the organisations from the competitors firms and offered them with higher perks to join their company as a regular employee but now the picture is changing from traditional practice of Talent Poaching from Competitors towards crowd-sourcing people for a certain specialised assignment for a short duration of time. Organisations benefit a lot in terms of costs when they prefer crowd-sourcing instead of

poaching practice. Online platforms have proved to be a boon for this kind of dynamics.

On one of the largest global online platform for freelancing services, Freelancer.com, the number of registered people from India is the highest which is more than 20 percent of the total registrations. The Indian registrations are 5.3 million and surprisingly 3.3 million from US, second to India. This means that a significant proportion of Indian working population are interested to work on freelancing assignments just like that of U.S.

So, What are the Tasks People Perform in the Freelancing Work?

According to various online freelancing and moonlighting platforms, there is an availability of a variety of tasks posted by the job- providers. One can choose from them according to one's skill set but the top jobs which have been in demand in the last five years according to their payment level can be seen from Fig. 2 below.



Fig. 2: Top Freelancing Jobs and Majority Freelancers' Nationality (year 2014 to 2017)

Figure 2. Freelancers Survey Report of India, Australia & U.K. Adapted from '23% of web freelancers earn upto Rs 45 lakh a year' by Das Avik, 2018, *Times of India*, January 10, 2018.

Source: (<https://timesofindia.indiatimes.com/city/bengaluru/23-of-web-freelancers-earn-up-to-rs-45-lakh-a-year/articleshow/62436828.cms>) last accessed 24 January 2018

When analysing above Fig. 2, it can be inferred that most of the freelancing work on the freelancing platforms is provided through the IT industry and the majority of 82% freelancers belong to India. This means that Indian Freelancers are doing freelancing assignments which may or may not be done along with their daily regular jobs. But possibility of doing the assignments with their primary day jobs seems higher due to difference in the time zones of these countries and the competition prevailing in the industry for professionals for staying competitive at all times. This can be stated that moonlighting at a significant level by Indian IT freelancers is on rise. The top three jobs identified by this survey are all related to IT or IT enabled services. This means that the

freelancers must be having such skills built up during their career which they can utilize for making wealth through multi-jobbing and freelancing.

CHANGING CONCEPT OF JOB SECURITY

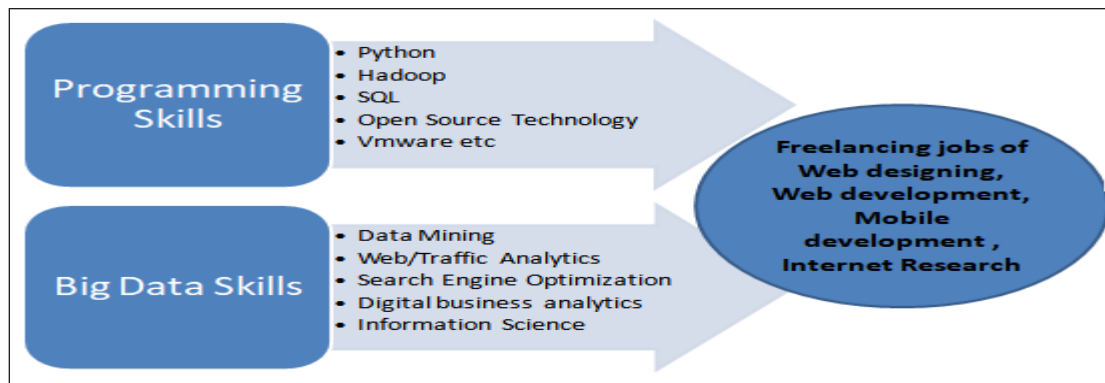
The facts disclosed by some of the leading reports have pointed out that millennials working in the knowledge industry do a lot of freelancing. The reasons may vary from individual to individual but for persons working in the IT/ ITes industry, the amount of income being received in lieu of freelancing is one of the main factors as it is very much significant in its amount as disclosed in the above Figure 2.

Some more findings from this disclosure can be:

- Job security transforming into employment security
- The individual should be able to earn out of his/her skills not with the affiliations to big business houses

3. The discretion of provision of Safety net for social security benefits should not be left to the organisations but created by the individuals according to the customized requirements and personal earning levels

So, what are these skills which differentiate an employee to be self-sustained despite of possession of a tag of a regular employee of a business house?



Source: Compiled by author from various reports by online freelancing platforms, digital payment platforms, professional networking websites and Business magazines which include freelancer, PayPal and Forbes and LinkedIn.

Fig. 3: Skills Leading to top Freelancing Jobs in IT/ITES Industry

This leads to the fact that those who have acquired programming skills or big data skills can benefit immensely both professionally and financially even in the absence of a regular primary occupation and the figures of hiring of

persons possessing these skills has witnessed a significant rise in the last two to three years.

This is evident from the below records of hirings based on above mentioned skills in 2015-16.

Table 2: Top Ten Big Data Employers as of November 2015

Employer	Number Of Jobs Posted By Employer Requiring Big Data-Related Skills In The Last Year
EMC (Dell)	51,034
Cisco	12,804
Oracle	8,308
Adobe Systems Incorporated	7,690
MedeAnalytics, Inc.	6,358
IBM	5,376
ACCENTURE	4,500
CA Technologies, Inc.	2,416
Splunk	2,260
Amazon	2,182

Source: Job postings' analysis results by Forbes (<https://www.forbes.com/sites/louiscolombus/2015/11/16/where-big-data-jobs-will-be-in-2016/#3b0b0a6c608c>, last accessed 13 January 2018)

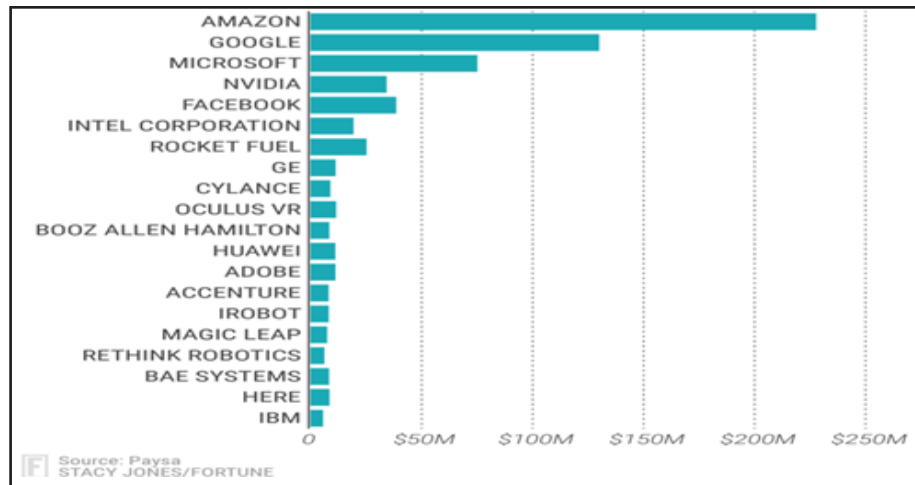
Table 3: Top Big Data Jobs in 2015 and Their Growth in 2016

Skill	# of Big Data Jobs Mentioning This Skill Set (multiple responses allowed)	% Growth in Demand For This Skill Set Over The Previous Year
Big Data	206,967	96.29%
Java	59,886	79.63%
Python	55,907	197.19%
Hadoop	55,063	97.77%
Structured query language	47,706	65.81%
Data warehousing	42,781	209.13%
Open source technology	41,579	333.66%
Linux	41,218	110.17%
VMware	37,679	798.19%
NoSQL	35,802	169.86%

Source: Job postings' analysis results by Forbes (<https://www.forbes.com/sites/louiscolumnbus/2015/11/16/where-big-data-jobs-will-be-in-2016/#3b0b0a6c608c>, last accessed 13 January 2018)

Both the figures show that Big data has evolved as a significant skill set in the hirings recorded in year 2015 and 2016 and it would continue to sweep other skills in the future also. Some of the facts revealed by the analysts of this report are as follows:

- The advertised salary for technical professionals with big data expertise and in-demand skills is \$124,000 (globally) in 2015-16; net of bonuses and compensation.
- IBM (NYSE:IBM), Cisco (NASDAQ: CSCO) and Oracle (NYSE:ORCL) together advertised 26,488 open positions that required big data expertise in the last twelve months.
- Dell has 25.1% of all available big data positions that WANTED Analytics tracks.
- VMware, data warehousing and Python programming expertise are the skill sets growing the fastest in companies expanding their big data development teams.



Source: Report on Hiring investment by big IT/ITes players in 2018 by career and hiring data firm Paysa (<http://fortune.com/2017/05/01/automation-jobs-will-put-10000-humans-to-work-study-says/>; last accessed 13 January 2018)

Fig. 4: Top 20 Companies Investing in Hiring AI Talent

After Programming and Big data Skills, there are skills which can be used to implement and promote Artificial Intelligence in the organisations which are very much required in the personnel being hired in the era of Automation and AI. Organisations are investing hefty amounts both in AI technology and hiring AI affluent Talent so that the evolving AI technology can be implemented and promoted with expertise. It can be seen by the following report by Fortune Magazine.

It infers that AI jobs are on a rise in coming time and firms have already started spending to attract and hire the most competitive AI workforce for them.

CONCLUSION

It has been found that although the speed of workforce cut-down with big players in the market has been exponential but parallelly there has been a creation of new kind of jobs for whom special kind of knowledge, skills and competencies are required. Individuals working in this industry are looking for various coping strategies to remain abreast with the dynamics of rightsizing of the organizations. They prefer either of the alternatives from Skill Diversification, Skill Enrichment, Planning and working towards new ventures, Going to Academia parallelly for knowledge enhancement etc. They do this along with working in their regular jobs. This can only be possible if an individual is excellent at multi-tasking. This is giving rise to an increased practice of multi-jobbing which is also referred to as moonlighting in the context of emerging human resource development. This is also referred to as freelancing when the individual is working for multiple short assignments. Organisations are also trying to keep track of the moonlighting practices of their key knowledge workers for ensuring their retention because key knowledge workers are the primary assets of the firm which decide its growth and prosperity even when there are unpredictable dynamics in the industry. The practice of moonlighting and freelancing is on surge in the last four to five years because the workforce has witnessed the transformation of job profiles into skill based assignments in most cadres of the organisations. Jobs are no longer posted or sought with designations but with skills themselves in this era of fourth industrial revolution witnessing rise in Automation, artificial intelligence and emerging computing technologies. So, the more skilled a person in working in this automated world, the more employments one can be assured of. The top skills which have been identified to be in demand due to automation are:

- Advanced Programming Language skills.
- Big data mining & analysis skills.
- Artificial Intelligence Implementation & functioning skills.
- Search Engine Optimisation Skills.

The Opportunities being created or in rise due to such skills are

- Web production
- Product Design & Simulation
- Data Science
- Mobile Product Development
- Actuary
- Information Security analysis
- Research & Development
- Quality Assurance Analysts
- Digital Marketing

Implications of the Study

This study provides insights into the following trends in IT/ITes industry to be addressed by the organisations and the government:

- India is witnessing a transformation in IT/ITes industry in terms of jobbing from job profiles to skill based assignments.
- Professionals are practicing this transition through the practice of moonlighting and freelancing.
- Automation, AI and emerging computing technologies are reported to be eating traditional jobs but in fact, it is the high time for the government, organisations and the workforce to understand that only re-skilling is the key to explore new opportunities.
- Moonlighting & freelancing are the practices promoting re-skilling and skill enrichment to the workforce.
- There is a significant rise in the number of moonlighters and freelancers in India and workforce no more believes in a lifelong employments. This can be a significant threat to the IT/ knowledge organizations with respect to information security.

- This is also requiring new laws governing moonlighting and freelancing practices of employees with regular primary occupations which should promote growth along with confidentiality rather than just putting legal foundations.

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