

INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI

NPTEL

**NPTEL ONLINE CERTIFICATION COURSE
An Initiative of MHRD**

Science, Technology and Society

By

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Now when such conceptions become such analysis becomes very important okay we tend to look at.

(Refer Slide Time: 00: 41)

New economy: new classes?

- If steam mill gave us a capitalist class (Marx), then what does the computer give us?
- What does the coming of IT mean for class and power in today's world?

A form of agrarian capitalism preceded the steam mill; capitalism is not limited to industrial production. Then, why capitalism should not continue to help shape the development of new technologies?

Different we tend to witness a different economy and within that new economy different economy we get we tend to witness new classes okay which may be different from the conventional Marx's notion of classes which according to Marx we are manifestations of economic differences okay.

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New economy: new classes

- **Class rejected:** new technology holds hope of abandoning 'class'; classless achieved by technical, not social revolution.

 - **Class reasserted:** IT merely strengthens the hands of the already powerful capitalist class, giving it a wider (global) scope and tools for tighter social control.

 - **Class reconceptualized:** Is Marx outdated? But not because classes are disappearing. The introduction of new technology tilts the balance of power in different ways, realigning classes and releasing new social movements.
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In this context what we are going to do we are going to discuss three important things one is how Marxist notion of class may be rejected how much as notion of class may be reasserted and how Marx's notion of class may be reconceptualized okay.

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New economy: new classes?

- If steam mill gave us a capitalist class (Marx), then what does the computer give us?
- What does the coming of IT mean for class and power in today's world?

A form of agrarian capitalism preceded the steam mill; capitalism is not limited to industrial production. Then, why capitalism should not continue to help shape the development of new technologies?

I mean there are different ways what in the poverty of philosophy what Marx said Marx wrote that that a hand mill will give you a society with a feudal lord whereas a steel mill with that of the industrial capitalism okay Marx has been wrongly dubbed as a technological determinist technological determination but it is not correct Marx was trying to look at hand mill or steel mill so far as the debates on mode of production are concerned okay.

Now what David Lyne tried to do David Lyne tried to look at look at this that what is this new what kind of new classes okay which have surfaced which have appeared in the context of the information society if you say that a hand mill gives you a society with a feudal lord where is the steel mill with that of the industrial capitalist then what does the computer give us what does the coming of IP mean for class and power in today's world okay a form of a form of a gradient capitalism preceded the steam mill capitalism is not limited to industrial production.

Then why capitalism should not continue to help shape the development of new technologies this I mean this is a pivotal question for any theory of information society if I say that a form of a gradient capitalism preceded the steam mill capitalism is not limited industrial production okay

then there is no a priori reason why capitalism should not continue to help the helped shape the development of new technologies okay.

A priori means prior to experience a posteriori means portion experiments okay prior to experience prior to in procedure okay the question before us is whether or not information technologies and their associated industrial and social processes actually help change the rules of the game Daniel Bell offers this as a clear alternative to Marxist equivalent treatment of capital for the water for the sake of clarity David Lyme try to identify three kinds of answers one new technology holds hope for abandoning class.

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The slide is titled "New economy: new classes" and features a red horizontal line below the title. It contains three bullet points, each starting with a red square icon. The first bullet point discusses "Class rejected", the second "Class reasserted", and the third "Class reconceptualized".

- ❑ **Class rejected:** new technology holds hope of abandoning 'class'; classless achieved by technical, not social revolution.
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Classlessness achieved by technical not social revolution okay as the protagonists of IT profound for as a conceptual no causality of change this is class rejected to secondary IT merely strengthens the hand of the already powerfully capitalist class giving it a wider global scope and tools for titled social control and this is class rejected I am sorry class we asserted three thirdly much is now outdated but not because classes are disappearing the introduction of new technology tells the balance of power in different ways realigning classes and religion new social movements this is class reconceptualized.

Let us discuss these three in detail first class rejected many proponents of the information society give the impression that new social relationships appear all around old-fashioned capitalism and socialism has frequently said to be doomed by the arrival of information technology I mean new not only has the white-collar sector brought the blue collar which in itself has class implications but today's industrial in political trains according to a nice Beach are leading the advanced societies away from hierarchy and domination to networking and participation.

Without disputing claims either that IIT could be used in liberating and egalitarian ways or that potentially desirable alterations are occurring within organization and in other social relationships it seems clear that these kinds of accounts are mistaken when they ignore or minimize questions of class and powder okay as is so frequently the case the supposed technical promise is confused with social reality IT is not a class corrosive tool rather IT widens IT has widened the class differences class distinctions okay.

And therein lies the significance of component of rejection of class rejected Marxist analysis suggests that while information technology does play a significant role within capitalist societies it does not alter the fundamental relations of production which lie at their base as David Albury and Joseph Scott put it the so-called microprocessor revolution is part of the effort of capital to ensure it is continued domination over social and economic development during a period of crisis in change.

The myth of technological progress serves to disguise the class interest at work behind the introduction of these missiles Marxists efforts are dedicated to exposing and countering that class interest one could say that Marxism is a theory of technological societies that is what Marxism is my Marx has been dubbed that is a technological determinist okay it is wrong what he why he is dubbed why he has been wrongly cited I mean nature is transformed by people using tools Marx wrote nature builds no machines no locomotives no railways electric telegraph self-acting mules etc...

These are products of human industry the power of knowledge objectified so human activity is mediated through technology but it is class activity Marx's is very important even today in 2017 okay it would be possible to write a whole history of the inventions made since 1813 for the sole purpose of providing capital with weapons against working class rewards we would mention above all the self acting mule because it opened up a new hope in the automatic system okay.

It is the view that new technology is slowly bound up with cluster because it has cysts in the exploitative accumulation process that characterizes Marxist accounts the huge of missiles mention effect your assembly lines scientific management and now automation and robotics is seen as an ongoing way of perpetuating the interests of capital at the expense of level it may eat into new areas expanding new into consumption especially the domestic sphere culture and previously unaffected parts of the globe.

But it is essentially the same process at work the continuing importance of the legal ownership of capital whatever the changes in it is composition on the one hand and the still considerable strength of the historical working class movement on the other remain the key factors for Marxist analysis Marxist discussions on IT take these items as raid although the internalization of capital via the big global corporations is often described as the monopoly capital stage the primary rationale for technological change they need to restructure capitalism.

So that in machines and companies may be better placed to compete in the global market place in the effort to accomplish this it is argued unions and the working class in general may expect to be threatened by both by legislation aim to curb their power and by disc killing in job losses the issue the issue of disking you can also look at Harry Bravermans work basically okay technology and capitalist control labor in monopoly capital.

So it is an epoch-making book on discrete the issue of dis-scaling has formed dominant motifs within the Marxist debate over information technology the work of Harry Braverman which focuses on the effects of separating mental from manual labor has been a huge stimulus to the cross analysis of automation although Bravermans own conclusions are now widely regarded as flawed or something but one thing one must understand the consequences of that divorce

continue to be researched other ways in which the ongoing relevance of class analysis to IT is stretched include the idea of cultural control.

As well as the elite network of corporations, foundations, universities policy planning groups and government bodies which seeks to harmonize the interests of capital and filter out challenge to its hegemony the fact that information technology is polished for a major expansion into the domestic sphere also bodes ill for consumers it can also predicted that the new home communications set far from introducing a rich range of face entertainment and services more and more spheres of social life I mean monopoly capitalism stretches it is tentacles into the area of conjunction.

As your alleged products to the question what does the computer mean for the social class in today's world most Marxist should say no will reply more of the same I mean according to David Lyne a revolution of the fixed will is an appropriate characterization as an opened by Robinson Webster so far from facilitating a new classless situation of open opportunities the is messing of hierarchy and free time IT reinforces the contradictions within capitalism originally identified by Marx.

The relentless quest for accumulation causes capital to penetrate new domains both on a global and on a domestic level as well as tightening this true of exploitation within the productive workforce discussion of Marx IT and class continues to be significant I mean because the nature of class is perceived to have altered by some who still use Marx as a kind of theoretical springboard and because this also rings bells with others who not begin with Marx in analysis at all.

I mean that is why it is it is a prolog significance that that term and that we must try to reconceptualize Marx's notion of class I mean the essential two class model of classic Marxism is no longer in the on the in the foreground rather a but much also pointed out that there will be so many intermediary classes within this two class model of classic Marxist you okay.

Now then will let us see how the Marxist notion of class can be conceptualized having discouraged the aspects of class rejected in class rejected now we will discuss class reconceptualized within the post-industrial society according to Daniel Bell workers in the predominant service sectors when I say predominant service sectors I mean it maybe health it may be education it maybe research it may be government sectors and so.

I mean workers in the in the predominant services namely health education research and government comprise the new intelligence you and this professional and technical class does the typical work of information society planning and forecasting research and development and so wartime emergencies stimulated such activities and post-war technological and economic planning took them further.

The goal according to the objective the instrumental character of such information technology according to Daniel Bell is to realize a social alchemists dream that is the dream of ordering the mass society then we are creating a new kind of intelligence here which will order master like said Simone Daniel Bell seemed to survey this technocratic sin without war why should society not be organized more rational having once referred to a knowledge class nevertheless Bell.

Now denies both that it is a class from the model of the and those that it could be and that it could rule it could be the owners Toffler agree with Bell in this context third wave advocates including the mainstream of intellectuals information workers and technicians are engaged in a struggle but it is primarily a struggle for liberation from the second wave existence that is the industrial society European modernist paradigm within sociology okay.

And only by twisting the turn to do one call them a class other observers are not so sure knowledge war all and some information what may well confer power on those engaged in it appears to us that as those with access to the decision-making machinery gain power so others experience progressive powerlessness today's top managers at the top level can have more relevant information readily available at their fingertips and may well be able to make executive decisions affecting subordinates without consulting them.

Is access to and control of significant information replacing property as a new source of class division this is important okay David Land tried to put this debate in context in perspective the concept of a new class cannot be separated from wider arguments over social classes and the potential of any one of them to transfer industrial capital then the concept of nucleus is inseparable from wider arguments over social classes and the potential of any one of them to transform industrial capitalism Non-Marxist socialization believe that social change has rendered irrelevant the Marxist account of class and class conflict.

This includes the diffusion of capital by shareholding the rise of managerial power the institutionalization of class conflict within industrial relations and the growth of the welfare state Marxists on the other hand while admitting that social changes can occur insist that input does not fatally damage Marxist accounts and they are right I mean the key problem for our purposes for our objective third for aims for our goals.

Okay is that of the so-called middle classes Mark said many intermediary classes okay pity mojo Marxism assumes a polarization of two fundamental conflicting social interests namely labor in capital okay always there will be a conflict between labor and capital as the two important factors of production okay but even Marx recognized the difficulty of placing themselves placing intermediate strata with lists various religionists have attempted to cope with this difficulty during the 20th century but it was in the 1960s that several theories appeared which linked the middle class problem with the new demand.

That is factorial I mean that that is wrong attributed a number of French sociologists like Malar, George and others claim that a new working class segment could be observed within high technology products higher educational and skills level and more communal patterns of work organization within the new working class enabled them to see more clearly the contradictions inherent within captivity their inferior rewards in their lack of control became more visible.

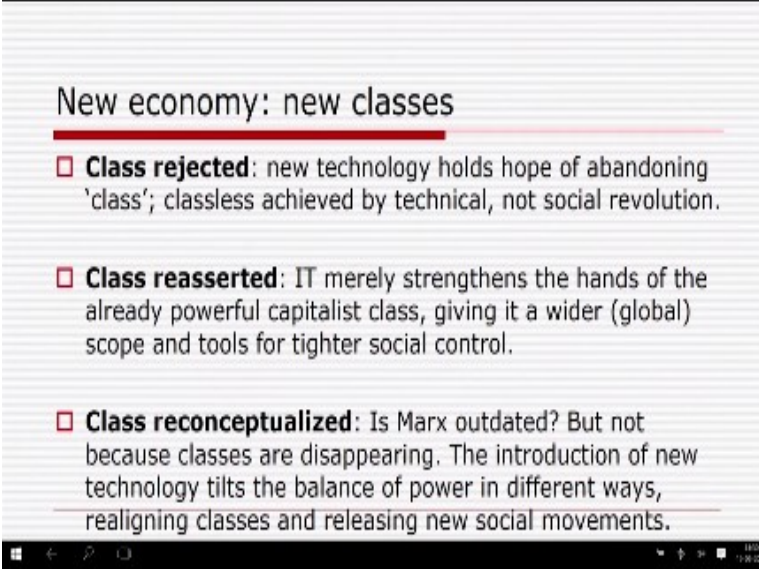
This insight can in fact be traced to Marx who foresaw the progress of Techno that that the progress of technology meant that the human being comes to relate more as a watchman and a regulator of the production process the implication being that this would also create space for

workers to see themselves in this light such ideas have been countered in several ways however high-tech workers did not necessarily understand.

The processes in which they are involved within a semi-automated chemical plant for example one study found according to what which David line pointed it out that one study found that the majority of workers still being unskilled dirty and arduous donkey work big variations of responsibility and still exist even within apparently homogeneous groups such as technicians there may be skilled and unskilled computer workers and whatever the specific circumstances, no clear evidence exists of such a class trying to overthrow capital.

For instance higher degree of militants as Duncan galley found when comparing French with British workers relate more to the way they are treated by management British managers buy more frequently seeking constant to contain potential strike, still in debate over the new class continues okay.

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New economy: new classes

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I mean if you look at the context of the United States of America a third force between the capitalist and working-class of traditional Marxism that is the professional managerial class

which has emerged. Many in these I mean they were professional managerial class essentially cannot come under proletariat nor can it come under the class of bucho okay, many in this class in the class of I mean in this professional managerial class for various reason have anti capitalists sentiments but find themselves in a curious position.

These are the low working class, they are not able to settle themselves with the border nor are they able to settle themselves with the portrait. Both classes confront the capitalist class over the issue of ownership and control of the means of production, they confront each other over the issues of knowledge skills culture and so on. These are also the issues that Abercrombie and Lori emphasize in a British context, the context was again the context I mean the context was drawn more from the perspective of Weberian economy and society.

Abercrombie and URI hint at the power of what they call the service class to affect the future shape of society. However their distinguish between the, between this class which performs functions relating to capital and deskilled white-collar workers which position is closer to the traditional portrait, then again this professional managerial class is again divided, the middle class that between Buju and the proletariat again is divided, okay one which divided into two groups at least two groups one which performs functions relating to capital and the other I mean the other includes deskilled white-collar workers which position is closer to the traditional portrait.

These discussions bear a strong affinity with seminal argument in the early 1917 of Alan Turing for Turing educational credentials are becoming increasingly important for determining one is class position. The division between manual and mental labor which was pointed out by Harry government okay, is it is the man the division between the separation of mental labor from manual labor okay, is the basis for a new kind of class conflict. Turning did not hesitate to isolate technocrats such a new dominant class whose decision making power is crucial both to maintaining their position and to eliminating those denied it.

I mean thus in the programmed society in the word society, in the information society, in the post-industrial society neither forms nor unions are today the chief actors in the struggle for

social powers. By the 1980s Turning would assert that socialism is dead by looking at the events which occurred throughout the world especially in the erstwhile Soviet Union. So far from the bearer of universal project of human emancipation it is now a mere forum for sectional interests.

So where is the new opposition now, for Turning registrants comes from the excluded from I mean registrants comes from those excluded from participation in the decision-making process who find themselves at the mercy of technocracy, they may include trade unionists, feminists, ecologists, members of peace movements, people involved in alternative media and so on widespread support for the environmentalist group namely Greenpeace.

The alternative plan for socially useful production drawn up by the local aerospace combined or the opposition of computer scientists to the HDI program are examples of the kind of resistance Turning has in mind, of course counteracting the technocracy is not easy if you look at the Frankfurt School theorists in Germany, they are also called new Marxists okay, they are also called critical theorists like Herbert Marcuse. Ukraine Harbor mass, they have stretched time into sole modern societies are characterized by a pervasive technocratic consciousness, that is to say as more and more attempts are made to run society along rational lines space for resistance efforts based on a moral or normative critic becomes more and more restricted okay.

Jack alone now once makes a similar point in a different way I mean restricting once per view towards only technology excludes questions of purpose, questions of objective goal only did not then you overwrite the interests of the people at large, as information digest in occurs this process is likely to be carried further thus adding urgency and contemporary relevance to Ilene static. Understanding I mean understanding this appears to have galvanized at least some computer professionals and others into a quest for appropriate purposes in a socially informed normative approach.

Normative approach I mean what should be, what ought to be okay, ethical approach in the hands of Turning or Habermas the concept of class travel is taken along way beyond marks for Habermas in particular the increased role of Science and Technology in the production process

underlines marches reliance on the labor theory of value. And what is labor theory of value, what is surplus labor see this is not I mean I am not going to teach social theory but what you, what one should do and let me give you a simple example.

Suppose a worker gets 800 rupees to do 8 hours of work and per day and if that particular worker if she or he does another 4 hours of work then the kind of over time that he the ways that such overtime attracts let that amounts to say 200 rupees more. Then for 8 hours of work which she or he used to get 800 rupees then one hour of work was equal to 100 rupees, now this 4 hours of work is equal to 200 rupees I mean one hour of work is equal to 50, then instead of 400 rupees he should have he or she should have on 400 rupees for 4 more hours of work.

The story does not end here then one may say that no surplus labor will be only 200 rupees instead of 1200 rupees somebody is getting thousand rupees no, now the system is that you are violating the norms of eight hours day work and then you are trying to extract the labor from that worker in the process of production in the assembly line production in large-scale production and then you violate these norms but your wages do not, wages should increase in fact they do not increase their on decline, this is what surplus switch, okay is all about okay.

Then on account of wage cross conflicts of attempts then trade unionists so many others they are try to bargain with the management that yes, then our ideas the question of class conflict class trolleys, class conflicts no longer have the potential in the wake of in the way Habermas tried to characterize that class conflicts no longer have the potential to affect the central structures of society. Nevertheless struggles will go on in the hope of helping direct social change new movements are appearing according to Turning which do provide challenges to the status go to the powers that be okay, and resistance to the technocratic mentality.

But to return to the central question is it appropriate to think of there being the new class which holds power in any effective sense. The conclusion of baltoro is a project, whatever apparent divisions may exist within what he calls the service class overall professional administrative and managerial personnel and tend to be basically conservative and are unlikely to change challenge the wider powers that be wider status go it is important to understand the relative importance of

universities to control their future let alone that of wider society in the later 20th century and the early part of the 21st century even today, okay.

They are in general less central to knowledge production today such work is commonly done in large corporations and government laboratories as well. Universities in India they have a larger role to play in the production of knowledge, in the dissemination that is why University must interact with society okay, universities cannot be at the beckon call of the government, universities must be able to interact with our economy, culture, quality and so on society as a whole. Moreover what we witnessed today is that involvement within high-tech industries does not necessarily convert power on individuals or groups or communities.

Information workers may in fact be very routine eyes but have little access to decision making process okay, knowledge is power one may say that but it is also misleading slogan it is also misleading adage that knowledge is power, knowledge may well be important to the maintenance of power. But that does not mean that the knowledgeable are always powerful any ruling elite may use the apparatus of Science and Technology to buttress their dominant position like US, UK okay and Daniel Bell's notion of knowledge in it is may even be indispensable to the running of society but that indispensability does not in itself confer power up on them except in so far as they may be able to limit the activities of their paymasters.

After all slaves were indispensable to Athenian life but had no say in its direction while the changing occupational industrial structure does have implications for class and power okay, none of these things at present to alter the fundamental shape of capitalist industrial societies. But and here is the rub capital capitalist industrialist I mean they does not, it does not necessarily exhaust the possible ways of describing capturing modern society. The growth of technocratic consciousness and opposition to it is a factor that cannot be ignored especially as the whole process of rationalization is augmented by the introduction of information technology okay.

Information certainly does spell power in another context that of surveillance, so new social movements which they might not have the potential now I mean a new social movements while

they might not have the potential to transform society single-handedly okay, as martin theory requires of class okay, may yet point the way to alternative forms of social organization this is how we must be try to re-conceptualized classes according to David lang in the context of the information society.

Now, having discouraged class rejected class reasserted and class re-conceptualized the cornerstone of the popular information society thesis is that a new information sector comprising new information workers has become a dominant economic factor in the advanced societies. But the composition of this cornerstone is virtually crumbling the evidence points not to an information sector but to the increase of a diverse range of information activities whose social significance depends on a complex series of variables.

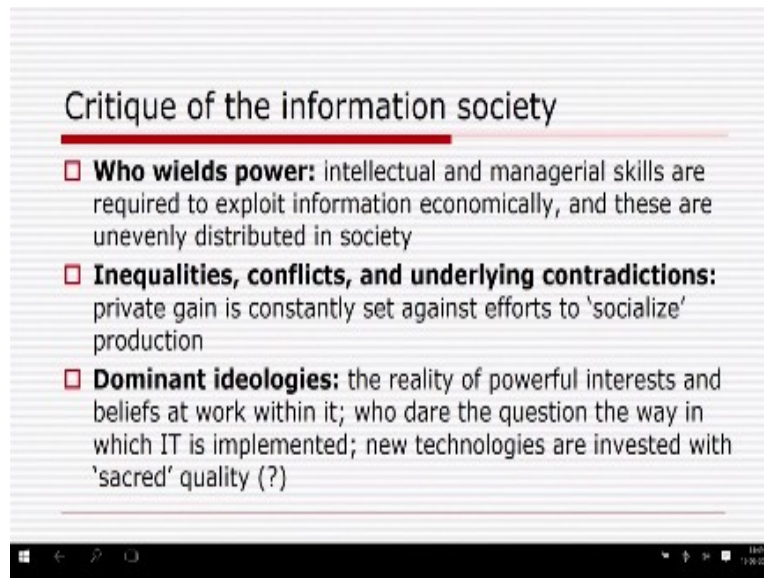
Many kinds of work are likely to become information intensive but this does not add up to a new sector as such. Similarly which taken is the notion that the new classes may be accompanying the spread of information technology, education and skills levels are becoming a more important criterion for determining social cohesion but this does not it at any rate seem to have affected the basic social divisions based on property, some technocrats may have more power but do not roll it.

On the other hand the simple marks in view of class polarization is also open to serious question okay, in the context of information technologies as David line pointed out okay, the matter cannot be left there. Consider Turning once more the value of his alternative view of the programmed society is two fold okay, firstly during challenges those blend accounts of a smooth transition to an information society number one and secondly Turning dismisses the idea that class struggle is the only axis along which conflicts occur in modern societies okay, having discussed these okay, that that we have discussed that how there are two kinds of information society this is each of which makes to a kinds of claims.

One popularized view suggests that major changes for the better mind more cautious and open-ended views suggested the information society is problematic. The two images of information

society overlap and interrelated and thus both try to anticipate the sorts of social change okay, we have already discussed the critique of the information society.

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I mean who well its power how it off scores the vested interests the kind of inequalities conflicts and underlying contradictions and in terms of dominant ideologies okay. From here onward then very quickly what have we discussed, very quickly we will see in the information society issue is an illusion what we have discussed. We started with Alvin Toffler's three waves the first wave is characterized by agricultural society, the second wave is characterized by the industrial society whereas the third wave is characterized by information society.

There are six grounding principles of the third wave according to Toffler namely standardization, specialization, synchronization, maximization, concentration and centralization, standardization is related to the products which are identical in more than one local, specialization is related to division of labor, synchronization is related to coordination events to operate a system in union, maximization indicates inverse relationship between input and profit, concentration is related to abundance of a constituent divided by the total volume by a volume of a mixture and centralization is refers to the process by which the activities of an organization particularly those

degrading planning and decision-making become concentrated within a particular location or group keeping all of the important decision-making powers within the head office or the center of the organization.

From their own we discussed Daniel Meltz characterization of post industrialism I mean a post-industrial society is one where knowledge has displaced property as the central preoccupation and the prime source of power and social dynamism. Secondly technicians and professionals are the preeminent social groups and thirdly service industries are more important than manufacturing industry.

Then from post-industrialism to information society, social forecasters and social planners and information culture we have I mean information being treated as a commodity, I mean we have discussed this you know in the context of bells reflection on the coming of post-industrial society, I mean centrality of theoretical knowledge rise to prominence of professional scientific and technical groups, a new social framework based on telecommunications, information is being treated as a commodity knowledge and information supplant labor and capital as the central variables of the economy.

If you look at basic economics you will find that what are the factors of production I mean there are four factors of production land, labor, capital and entrepreneur and now and why I am we are referring to only labor and capital because land is fixed okay, land labor capital and entrepreneurial, land is a fixed factor of production, labor is a variable factor of production, what earlier economist Smith Ricardo Marx other they used to subscribe to labor theory of value for them it will the labor was the most significant aspect because of certain things.

Land is the fixed category, labor is a variable I mean labor where is okay, it is not a fixed category and capital is generated by labor and entrepreneur, what is an entrepreneur it is one more level in this sense they used to focus more on labor but subsequently labor and capital as they are conflict they have conflicting interests okay. Historically and material they were considered the dominant variables of the economy but in the context of information technology knowledge and information have displaced labor in capital as the central variables of the and

then we witnessed the end of the industrial capitalist era and the arrival of a service or religious society.

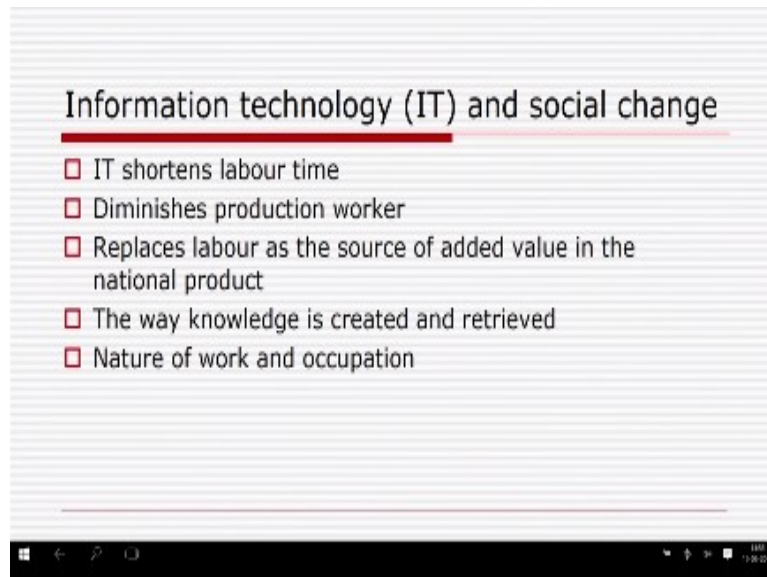
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From postindustrialism to information society

- Centrality of theoretical knowledge
- Rise to prominence of professional, scientific and technical groups
- A new social framework based on telecommunications
- Information as a commodity
- Knowledge and information supplant labour and capital as the central variables of the economy
- The end of the industrial capitalist era and the arrival of a 'service' or 'leisure' society

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And there in what kind of functions that IT performs that IT Orton's labour time, diminishes labour time, diminishes production and worker then IT shortens labour time I did diminishes production worker IT replaces labor as a source of added value in the national product the way knowledge is created and retrieved knowledge is being treated as a commodity and the nature of work and occupation has also been subject to changes okay.

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Themes of information society:
Information workers in an information society

Possession of qualifications in microelectronics, computing system analysis, telecommunications, operational research, software design, fibre optics, expert systems and so on

- What does this proliferation of new job description means?
- Who are these 'information operatives'? (Tom Stonier)
- What contributions do their activities make to the pattern of social relationship?

Then in the themes of information society we have discussed information workers in an information economy political and global aspects and then an information culture within information workers in inform in an information economy we have discussed I mean what we have post these questions what does this proliferation of new job description mean, who are these information operatives, what contributions do their activities make to the pattern of social relationship.

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Themes of information society:
Information workers in an information society

- ❑ What are the parameters which explain 'information'?
 - ❑ What is the purpose, function, or content of the information?
 - ❑ What is the relationship between information, knowledge and power with regard to the social significance of research and development?
 - ❑ And, who makes decisions, on what basis, or with what effect?
-

What are the parameters through which information may be explained, what is the purpose function content of information, what is the relationship between information knowledge and power with regard to the social significance of research and development and who makes decisions and on what basis or with what effect.

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The slide is titled "Themes of information society: Political and global aspects" and features a red horizontal line below the title. The content is organized into three main categories, each marked with a red square icon:

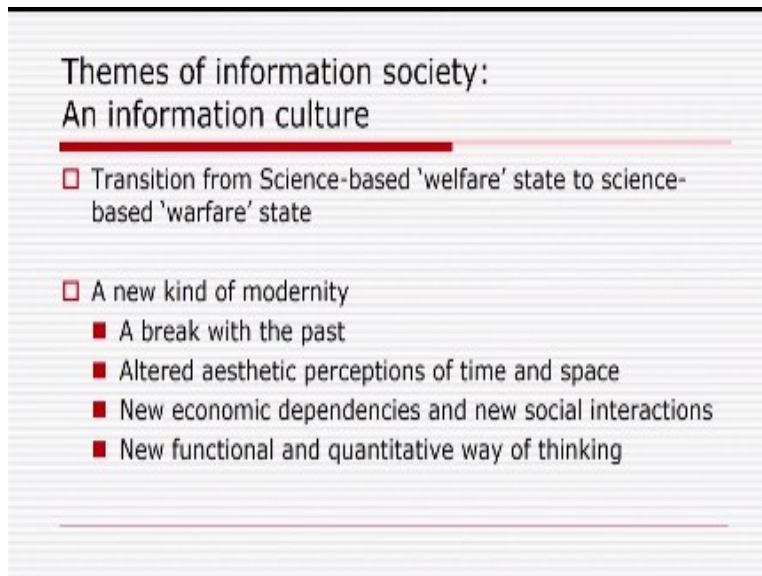
- Political choice and participation
 - Instant referendum
 - More informed-decision making
- Accessibility and surveillance
 - More secure society
 - Or, The threat of an Orwellian society?
- Relocation of workers and technology-transfer
 - 'North-South' divide
 - Second silicon revolution

In political and global aspects we have discussed three parameters one is on the basis of political choice and participation secondly accessibility and surveillance and thirdly relocation of workers and technology transfer. Within political choice and participation we have discussed instant referendum and more informed decision-making and within accessibility and surveillance we have discussed more secured society or the threat of an Orwellian society I mean the one which we have discussed that does the that I mean the threat of an Orwellian society I mean we have discussed does the widespread political and administrative use of extensive databases which allow for the easy storage retrieval and transmission of personally information important of future fraught with the dangers of electronic eavesdropping.

On the one hand policy different social security and other personal reassure the public that no innocent person need have any worries about improper prying into their private place on the other cases of wrong full dismissal or arrests which are traced to erroneous computer files serve to dwell fears that in fact ordinary citizens may well be at rest look okay. Within relocation of workers and technology transfer we have discussed north-south divide to have disparate digital divide and so on okay.

And in information culture we have discussed how there has been a transition from science-based welfare state to a science-based warfare state thereby we witness a new kind of modernity a break with the past altered aesthetic perceptions of time and space.

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The slide features a title 'Themes of information society: An information culture' with a red underline. Below the title is a bulleted list of five items. The first item is a square bullet, and the remaining four are square bullets. The slide has a light gray background with horizontal lines.

Themes of information society:
An information culture

- Transition from Science-based 'welfare' state to science-based 'warfare' state
- A new kind of modernity
 - A break with the past
 - Altered aesthetic perceptions of time and space
 - New economic dependencies and new social interactions
 - New functional and quantitative way of thinking

New economic dependencies and new social interactions new social relationships and so on and new functional and quantitative way of thinking and so on.

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New economy: new classes?

- If steam mill gave us a capitalist class (Marx), then what does the computer give us?
- What does the coming of IT mean for class and power in today's world?

A form of agrarian capitalism preceded the steam mill; capitalism is not limited to industrial production. Then, why capitalism should not continue to help shape the development of new technologies?

Then we have discussed there are three factors which influence in the information technology namely the military factor, the commercial factor and the government factor. In the new economy new classes we have discussed we started with what Marx wrote in the poverty of philosophy that a hand mill gives your society with a feudal lord and the steam mill with that of the industrial capitalists and then what does computer give, what does the coming of IT mean for class in power in today's world.

A form of agrarian capitalism preceded the steam milk capitalism is not limited to only industrial production then why capitalism should not continue to help save the development of new technologies okay, in this context we have discussed how much is I mean how the emergence of information technology has rejected, reasserted and re-conceptualized Marx's notion of class for according to Marx classes are manifestations of economic differentiation. But still economic differentiation has not yet been able to polarize classes on this basis okay.

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Critique of the information society

There are two kind of information society thesis, each of which makes two kinds of claims:

- Popularized view: major social changes for the betterment
- More cautious and open-ended views: the information society as problematic

The two images of information society overlap and interrelated, thus both try to anticipate the *sorts of social change*

And then we try to bring about a critique of the information society that is a popularized view which suggests that major social changes for the betterment of the society more popularized to I mean that is the states view that is the corporate sectors view but more cautious and open-ended views I mean with social scientists scholars of Social scientist to means of Social Sciences they spout that the information society is problematic. And these two images these two views that popularized view as well as the more cautious and open-ended views overlap and interrelated both try to anticipate the sorts of social change.

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Critique of the information society

- ❑ **Who wields power:** intellectual and managerial skills are required to exploit information economically, and these are unevenly distributed in society
- ❑ **Inequalities, conflicts, and underlying contradictions:** private gain is constantly set against efforts to 'socialize' production
- ❑ **Dominant ideologies:** the reality of powerful interests and beliefs at work within it; who dare the question the way in which IT is implemented; new technologies are invested with 'sacred' quality (?)

And as a part of the critique of the information society it may be three fold that who welds power that is the question, I mean intellectual and managerial skills are required to exploit information economically and these are unevenly distributed in society, inequalities conflicts and underlying contradictions I mean private gain is constantly set against efforts to socialize products and I mean there is an attempt there have been attempts to nationalize loss and privatize profits and the dominant ideologies that we encountered that the reality of powerful interests and beliefs at work are at work within it who bare the question the way in which IT is implemented new technologies are invested with sacred quality.

What is that sacred quality that that also is a part of dominant ideology okay, in this sense we try to cover the information society and then we will get into reception of modern science in India as a part of the exercise and then we will discuss science policies in India. But first we will discuss reception of modern science in India and then we will move on to science policies in India in reception of modern science in India we will start with the process of democratization of scientific knowledge I mean in the Indian context institutionalization of modern science in colonial India, then policies of colonial rulers and limitations.

Then science was democratized in Indian context through building scientific institutions namely this is very important I mean the native intellectuals during the colonial period in the last 18th century and early 19th century they had two options before them when modern science was introduced was implanted in Indian soil. The first option was to convince themselves that the best products of modern science were already anticipated by what they considered to be the national philosophy of Indian namely the Vedanta.

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Reception of modern science in colonial India

The native intellectuals had two options before them:

- The first option was to convince themselves that the best products of modern science were already anticipated by what they considered to be the national philosophy of India, namely the *Vedanta*. It is this concern which has been expressed in the works of Vivekananda, Aurobindo and many others.
- The second option was to build an indigenous tradition of modern science by establishing scientific institutions for pedagogy and research.

It is this concern which has been expressed in the works of Vivekananda Aurobindo and many others. For Western world it was at best it is no philosophical in nature at best and the second option was to build an indigenous tradition of modern science by establishing scientific institutions for pedagogy and research.

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Building scientific institutions in nineteenth century India

- The second option is sociologically significant. In this context, as a part of the process of not merely popularizing but also democratizing scientific knowledge in India, scientific institutions were established by the native intellectuals in the second half of the nineteenth century.
- Hindu College (1816)
- Delhi College (1825)
- The Aligarh Scientific Society (1864)
- The Bihar Scientific Society (1868)
- The Indian Association for the Cultivation of Science (1876)

And this second option is sociologically significant and in this context as a part of process of not merely popularizing but also democratizing scientific knowledge in India, scientific instruments were built by the native intellectuals in the second half of the 19th century.

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In this section we will discuss the Hindu College, the Delhi College, the Aligarh scientific society, the Bihar scientific society, and the Indian Association for the cultivation of science.

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Scientific Policy Resolution 1958

Preamble

□Characteristic of the present world that the progress towards the practical realisation of a welfare state differs widely from country to country in direct relation to the extent of industrialisation and the effort and resources applied in the pursuit of science.

□Science has developed at an ever-increasing pace since the beginning of the century, so that the gap between the advanced and backward countries has widened more and more. It is only by adopting the most vigorous measures and by putting forward our utmost effort into the development of science that we can bridge the gap.

And there on we will move on to the scientific policy origination.

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The process of democratization of scientific knowledge: the Indian context

- Democratization of scientific knowledge involves an attempt to critically focus on who benefits and loses under specific regimes of knowledge production and consumption in specific social contexts.
- Equality of opportunities to do science and the degree of access to do science, equality of opportunities to evaluate any knowledge form, the degree of access to scientific knowledge for application and the freedom to dissent constitute democratic norms.

In the next lecture we are going to start with the reception of modern science, thank you.

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