

Business Analysis for Engineers
Prof. S. Vaidhyasubramaniam
Adjunct Professor, School of Law
SASTRA University-Thanjavur

Lecture-1
Introduction to Business Analysis for Engineers

A very good morning students, I am Dr Vaidhyasubramaniam, I will be the faculty is going to handle this course title business analysis for engineers. In today's class I will be providing an introductory framework to this course and then we will see what are the different elements that we will be covering in this course. Now before I provide you that framework, let me first tell you a few reasons why I think a course of this time is required for engineers, that is enough literature that all of you have been reading on the quality of engineers.

And it also makes people to ask question a very fundamental question, whether do we need engineers at the first place to do a set of jobs are there currently doing and I am just trying to extend this question to a different orbit all together and also roping in the field of management and hence a sequential question to the start process is do we really require MBA graduates to do the management work that they are doing right now.

And this essentially on the issue of MBA graduates was the basis on which I work my PhD thesis, the results of that is a different subject all together, but at least I got a feeling that we need to juxtapose both these questions or do we need the engineers and do we need a MBA to do the job which they are doing right now and my experience with interacting with students has definitely been a learning one.

I have found that there is a lot of interest level among students especially students in the engineering stream to know some nuggets of management. So I decided whether it would be fair to provide these students and interacted a level course on management and I decided to offer this course called business analysis for engineers and this was just starting point. The starting point because this is a prerequisite for two more courses that I will be offering later.

The second course would be finance for engineers, the third course would be entrepreneurship and I believe that if a student completes all these three courses he or she would be having the required to get to start a business on their own and suppose they are not

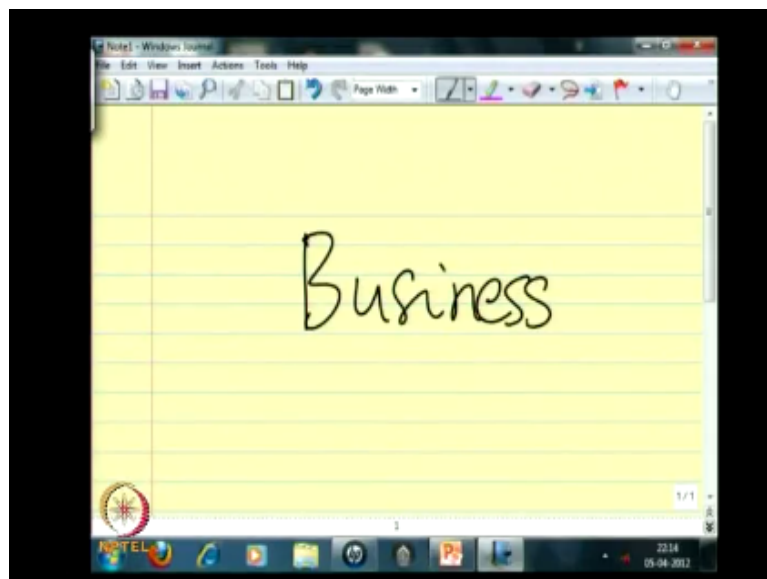
interested in starting new business is on our own at least I feel that this subject would help them to survive a very serious dinner talk or party talk, that very often happens in various organisations that you be working in future.

Just imagine that you are working for a multinational or a very reputed company and that you are engaging in a serious conversation with your superiors and many members of the leadership team over a dinner and you begin to hear words like corporate strategy DuPont ratio, Inflation, inflation adjusted GDP I am sure you would not cut a sorry figure not knowing at the first place what these words mean.

And how it would feel to make an attempt to engage in an intelligent conversation if you know what these terminologies really mean to you. So in a sense at the end of this course you would be enlightened enough to engage in an intellectual conversation of this type or at least provide perception to your superiors and leadership team that you are really making some sense on terminologies that they otherwise would think is strange for students from an engineering background.

So it is with this perspective that I have designed this course. Now let me just share with you what are the various ingredients that will actually form this entire course. The fundamental to this course is the word business because this course is titled business analysis for engineers.

(Refer Slide Time: 05:43)

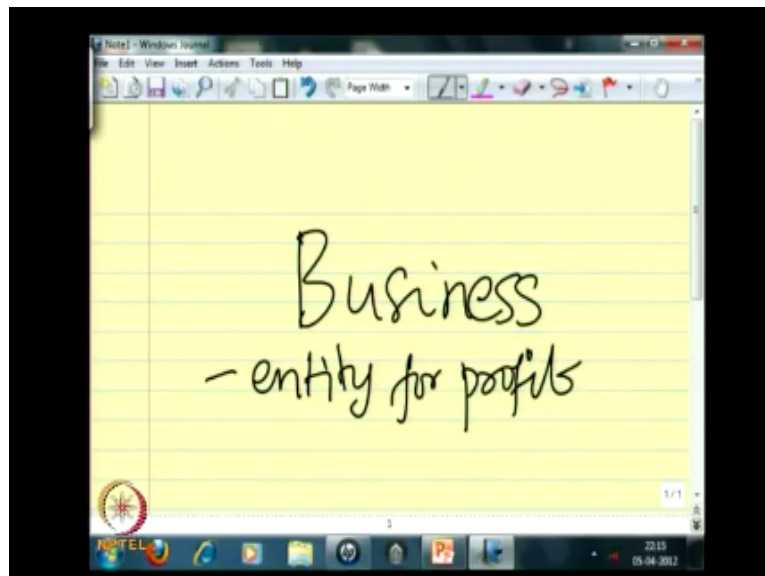


So you need to know what business is and I am sure many of you after you graduate you would be engaged in working for business entity or probably you would be starting your own

business and you need to understand and very fundamental level what business is all about and I am not going to provide you any text book definition for business I am just going to invite some answers to some questions and understand what you understand is business all about.

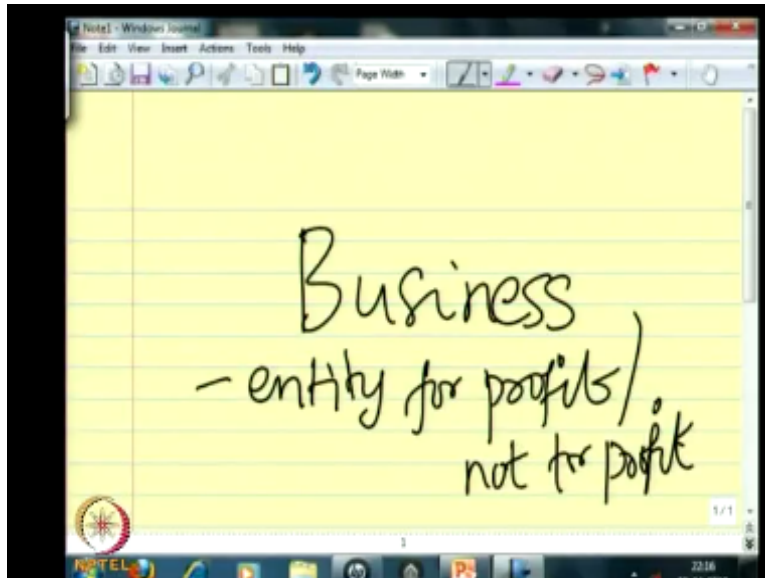
So I am going to ask you a question what is business I am expecting some very very fundamental answers from you and I am sure many of you will have different answers to this questions, but let me first begin with a very fundamental question and I do not want really burden you with a lot of questions in the first class, let me start providing you with some direct answers to these fundamental questions.

(Refer Slide Time: 06:55)



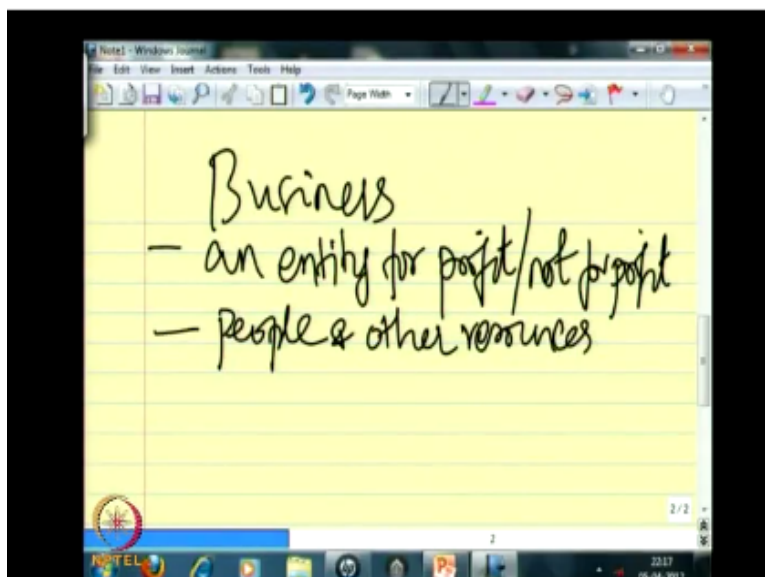
To me business is an entity, an entity that is for profit and I am sure many of you will ask the question whether all businesses need to make profit, the answer is no, there are entities that are not making profit and we still can categorise them as business entities and so I would rather define the basic unit of business that of an entity for profit or some businesses can also exist not for profit as well.

(Refer Slide Time: 07:36)



So a recap business is an entity for profit/not for profit.

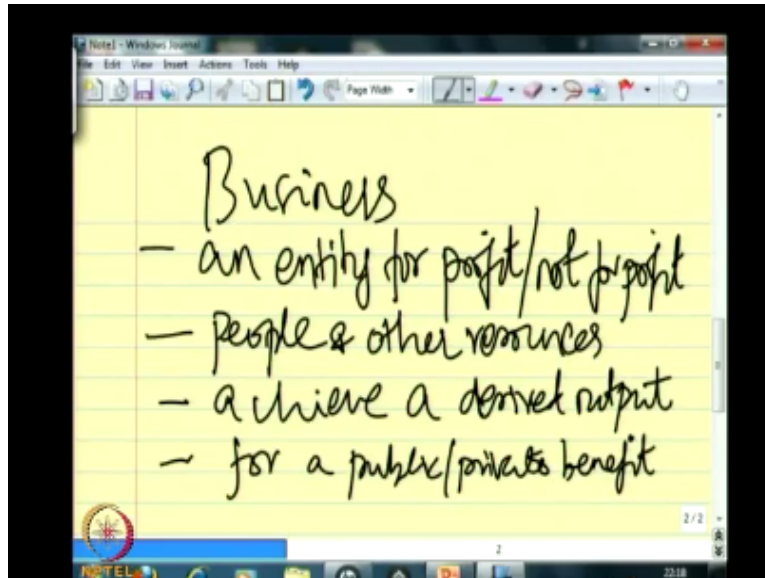
(Refer Slide Time: 07:59)



And during the course of the lecture you would understand why I used the terminology profit as the first indication for a business and secondly to generate profit or to engage in business not for profit a business need to use resources. So hence an entity that is for profit or not for profit is run by people men or women so we need a business that uses human resources people and other resources as well.

And we will spend a lot of time talking on what these other resources are it could be material it could be finance. So it could be a host of other non people resources that businesses use.

(Refer Slide Time: 09:08)

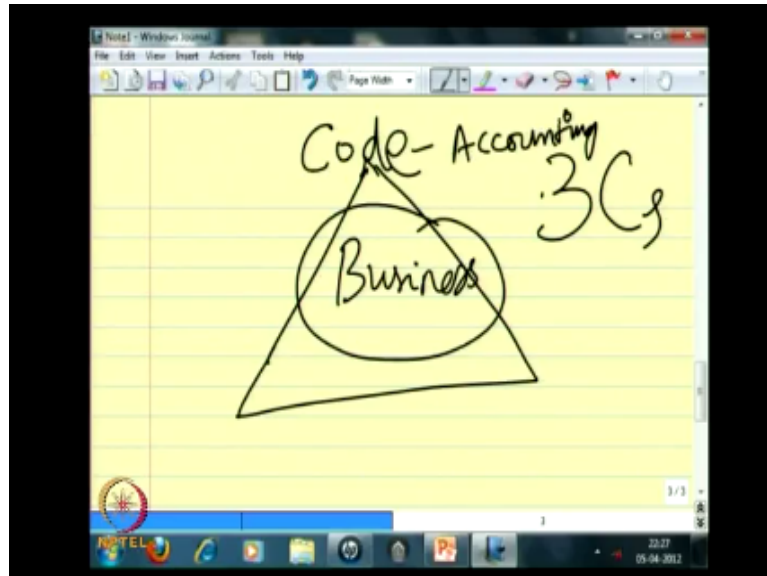


Thirdly the entity that exist that engages human and non human resources need to function for a desired output and hence they have a goal to achieve desired output and output essentially is an end product of a series of processes starting from the input stage. So business has a set of input that gets converted into a desired output and that output definitely is for a public or private benefit.

So in essence as I told you before this is not a textbook definition and definition that just got kind in this very same class room and I am sure each of you will have different definitions which could either completely different from what we have as long as it make sense everybody can accept a definition. But to me a business is an entity for profit or also entities that can exist not for profit run by people using various resources to achieve desired set of output for public or private benefit.

So this in a nutshell is a business as end this class I would also encourage the class to probably email me if you have any other better definitions and I am sure you will be having for this concept call business. Now we assume that we accept this definition for business. And the next question is how do you do a business analysis.

(Refer Slide Time: 11:31)



Business analysis businesses we should understand that we need to have some framework that actually provides us direction to do this analysis and this framework could possibly be from again standard frameworks error available in text books, but I would like to mention that I am I am not for choosing standard frameworks we are going to use in a standard model as we getting the final details of the course.

But for this class let me just allow the class to think independently and see what different unacceptable frameworks can we provide before we finish this class. Now if we need to understand business what do you think would you be looking out as the first indicators, the first set of parameters that you would like to actually assessed and then get an understanding of what this business entity is all about, any answers yes ok yes ok.

Yeah so you would be interested in knowing various parameters that actually define the success or failure of businesses. That is one unaccepted parameter, but we are not just interested in knowing whether business is successful or not, we also need to go a step back or a step forward to understand what businesses is do after they meet success or a step backward to understand what actually happens backstage that makes business successful.

It could be decisions that are taken inside about it could be decisions that I take an outsider board room or even outside the business boundaries themselves and also we need to understand a framework that actually provides you with some set of information on the way you look of that information you could say that this information this business successful or

not which means you probably could define success by looking at annual report of business entities.

So host of such information is essential to analyse a business in a proper perspective, but from different dimensions and to me I feel that there are 3Cs to do this business analysis, you know that is a McKinsey 7s, you know that is a 6 sigma, you know that is 4 piece, so let us start with a new concept call 3Cs for business analysis and what are those 3Cs. Let me first begin with the first C the business code, any guesses what I mean by code or business that to me is a first C for doing a business analysis.

And nobody is going to dispute the fact that business success the currency for business success is the extent to which business is make money, so when I ask you this question why did you think that business X did better than business Y and actually answer would be that the profitability or the profit that business X made was higher than business Y and quite rightly that has become an accepted currency that measures the success for business to what extent do businesses make profit or make money.

The next question as I told you that business is also exist for not for profit or we contradicting how do we measure success, success stories of business enterprises not for profit when you using the currency that tells that you measure business success based on the money that you may because business is not for profit and not supposed to make money. But at least the underlying current is money in businesses for profit we see how much money they make.

And in my view business is not for profit can also be measured by using money as a common denominator if you are able to make an assessment on how much money that able to get which is a recognition for the good work that they are doing. So at the fundamental level we can understand that money is the common denominator that is used to measure success of business.

And it is used in different forms you measure profitability, you measure return on investment you measure shareholder value maximization, you measure price to earnings ratio different financial parameters get into this game when money is involved and we are going to talk at length about these as the course proceeds, but at least you must understand to arrive at a

common parameter based on which we going to measure success of business to which the money is a common denominator.

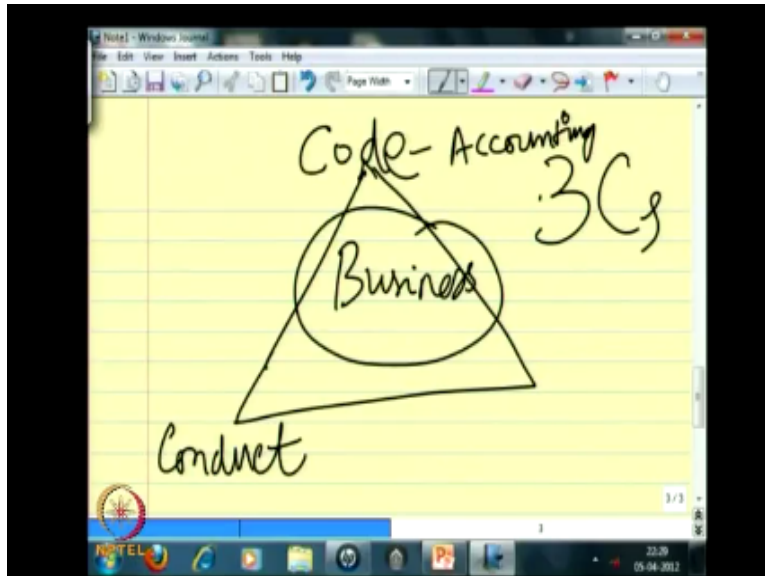
We need to understand that that needs to be some common language that uses this currency to measure success of business and this language of business is essentially accounting. So when I am talking about code it means that I am talking about accounting because that is the language of business and when we are talking about a language of business we should make sure that this language is understood by everybody, students were sitting in this class students were outside the class.

People who run the business is inside the country or outside the country students outside the country whoever it is we need to have a common understanding when it comes to the language of business and only then will be able to compare to our app and to provide a common Syntax that ensures that there is a uniform understanding when we are measuring the success of business.

Then we should have sudden accepted principles that form the guidelines on which accounting rest. So they scored in a sense is a set of guidelines which accounting which are generally accepted by people all over with some minor customisation that does not alter the very fundamentals, what are the very broad level and to certain specific levels there is a comment Syntax a common cold which actually defines this language of business that I am going to call as accounting.

So that is the first C which means that you will be knowing certain basic issues on accounting because that forms the very fundamental that translates the currency of business, the currency of business success into uniformly understood parameters which are financial and nature. So we need some common language of business which is accounting. So that is the first C. What is the second C is conduct.

(Refer Slide Time: 20:36)



And the second C is conduct, students you know what a conduct certificate is all about, some students be good, some students will be bad and that reflects in your conduct certificate, So try to extend this logic to business enterprises and we say that a business is doing good, business is going bad of course you have a financial statement that. We also need to understand by taking a few steps backward to understand thought process of those decision makers.

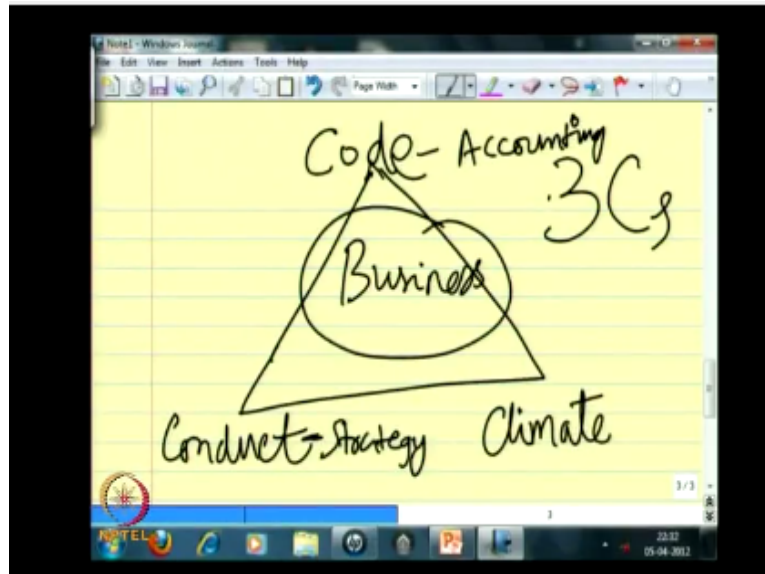
To understand the entire decision making process itself that actually let to such decisions either cause success or failure to a business and I am not talking about the ethical certificate when I am talking about conduct, the conduct that I am referring in this context is more strategic in nature, what do businesses do right, what are the key input that the analyse that help them in taking right decisions.

Why did businesses fell flat, what did they must as a result of which that took wrong decision are these are issues that I would be interested in analysing when I want to understand certain decision making and really want to understand what makes businesses succeed of a, why do I have big business enterprises that succeeded of global level, take for example why did Apple succeed, why is Microsoft succeed, why is a Tata Consultancy Services a successful, IT services company globally competitive.

It is not just some day to day activities that actually define the success of these enterprises definitely they are an integral part of the success and that is something more that is happening at a very broad available at the leadership that actually define the directions in which these

companies operate and that to me is the strategy what is the strategic direction that organisations undertake.

(Refer Slide Time: 23:11)



So contact to me is the strategic certificate that actually define the direction the part that provides a pathway for these businesses to undertake, this is a second C that will be looking in this course. Now the third C is climate and I am sure you know that a business does not operate in isolation, no business says that I operate and I am the only person in this business, that is the competition of that will be covering and I am going to talk more about conduct of businesses because we going to touch on how businesses compete against each other.

But beyond competition still an industry does not survive in isolation, there is a set of stakeholders outside the business ecosystem that actually influences the way in which business is run, and these stakeholders could be your customers, could be the government and the government in my opinion or the policy making body in general not necessarily the government because some policies also are trans government as well.

This external stakeholders is very important because they provide the climate around which business is operate, in some geographies the climate might be conducive for doing business, in some geographies the climate is not conducive at all as a result of which the conduct of your business of the strategy of the business keeps changing because you need to have different strategies for different business climates.

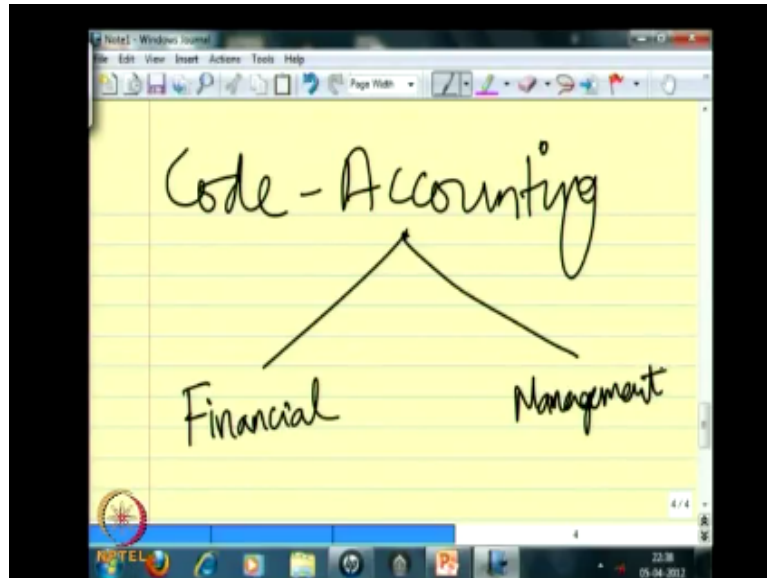
That who decides what type of climate is available for doing business, it is a government as well as other relevant policyholders are the ones who decide how the business climate should be and that is why you often see business analyst people who run businesses would like to understand the impact of policy decisions that say some the RBI raises increase interest rates how is that going to affect my business inflation how is that good effect my business very recently the finance minister announced a budget.

Budget is the income statement and balance sheet of a country, so the income statement and balance sheet of the country why is that is good effect my business because my business has a different income statement and balance sheet but definitely should understand that such policy decisions, decisions taken by the government have a telling impact on the way in which business is operate because these policy decisions actually form the climate in which business is operated.

And this can also be outside the Indian geography entrance and geography so we need to also understand that at a geopolitical what policy decisions are taken can affect the way in which we do businesses and that we have business interest outsider define geography. So we need to understand that the climate on which we do business gets the character because of certain policy decisions.

So climate according to me is the policy characteristic. So quick recap you know what businesses and you know all the 3Cs that we would be using to analyse a business. So this entire course is about using these 3Cs to understand the business code, to understand the business conduct and to understand the business climate and if you were able to understand all three you would be at a comfortable position in being able to understand and appreciate the way in which businesses are been transacted.

(Refer Slide Time: 28:36)



Let us get a little deeper, now what is that we are going to do in these 3Cs, the first C as I already told you is accounting, accounting I told you the language of business and when I am saying this is the language of business then you will have to actually talk that language feel that language understand the language and you should be able to know this Syntax that actually defines such language.

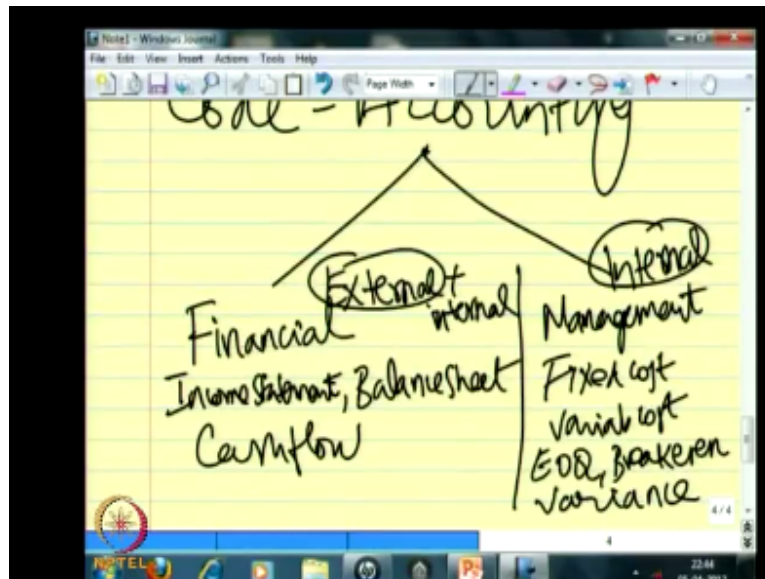
And we will be spending lot of time in this because I think that this is actually a fundament to this course, not only to this course but also to the other courses to which the scores from the prerequisite. For example finance for engine you would not be able to understand finance for engineers not knowing what accounting is all about. So this forms a very fundamental and what we will be doing is to understand what financial accounting is and what management accounting is.

And I have already told you that very purpose at least one of the main purposes for this course, it is make sure that you get the best of the engineering as well as the best of some basics in management. So that you can survive a very good intellectual conversation. So I am not going to get into the very deep and final aspects of account, I am going to train you for becoming CPS or chartered accountant.

But at least I am going to train you so that given a set of transactions you would be able to prepare financial statements, So I am going to talk about that later, what is financial statements or what is financial accounting and what is the balance sheet for this and cash statement, before we should understand that accounting has 2 parts, financial accounts,

management account, and in financial accounting I am going to teach you these 3 important statements.

(Refer Slide Time: 30:55)



The income statement or profit and loss statement balance sheet and what do you need to know to prepare income statement and balance sheet and cash flow. We are going to spend some considerable amount of time in understanding some accounting principles based on which we prepare an income statement, balance sheet or cash flow. The next part is management accounting where I will be telling you giving you some introductory level inputs on fixed cost, variable cost.

Then economic order quantity or break even, variants the host of other information, now we are doing these 2 in accounting, because this part is for external use management accounting is more for internal use, what do you mean by external use and internal use. The end user for a financial accounting or the financial statements that you prepare is not only the business itself, so it is not just external I can say this is external plus internal as well.

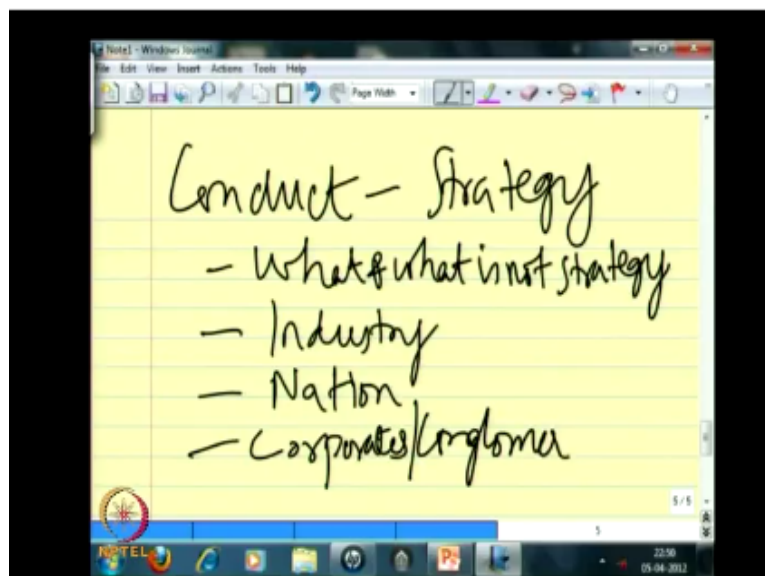
It is not just a business itself that is interested in knowing what is income statement is, what is balance sheet is, but there is a set of stakeholders visit outside business ecosystem that would like to know your financial statement should be the bank, or it could be the investors, it could be the tax authorities, could be government agencies, regulators. So these are people who would be interested in knowing what your income statement or balance sheet is all about.

How did you prepare that to make an analysis to probably race tax demand for various other purposes we have stakeholders external to the business would be interested in knowing your financial statements and also for an internal purpose that is a for the purpose of budgeting for the purpose of cost optimisation, for the purpose of defining better work flows, we have control system.

So to have a perfect management control system in place that provides a good framework for an internal analysis that provides optimal use of resources a framework that can optimally use these resources and cost prospective we need to do a management accounting which is more consumed by those who are internal to the organisation, say for example as a vice president of manufacturing I would be interested in knowing the various cost elements within the shop floor and how I can reduce for that.

So that the value addition is more, how I can manage time better so the devaluation how I can increase productivity so that there is no value and all they can capture by way of numbers and the exercise becomes easier because qualitative indicators with their quantified then it is easy to understand and work towards a specific target and to convert this qualitative parameters into quantitative indicators and targets we can and for the purpose of using them internally to improve the internal processes we do this management accounting.

(Refer Slide Time: 35:26)



So accounting will have two broad categories, one financial accounting, the other is management accounting and both of these will have a uniformly accepted set of principles and we are going to look at what is uniform principles are as we actually progress further.

The second C I have told us conduct which I said I am using conduct as a strategic direction for a business.

What is strategy in fact I will ask this question to many of my students were actually undergone this course before as a question what is strategy and I got answers actually answered my question what is not strategy which means that there is a popular belief that in a strategy is being number one in the market, I need to have number 1 market share is that strategy and if you think that you can raise your hand.

So I can see a number of hands that to me is not study it is a goal and people confuse goals of businesses with strategy for the business, so before understanding what is strategy I would want a class to understand what strategy is not. So we will be spending time on first understanding what and what is not strategy and then I told you that there is a climate to do business and if you look at the ecosystem it comprises not only the business, the entity form.

But also competition customers, suppliers, government agencies and host of other peripheral entities that influence the way in which we do business. So when I am going to say that I am going to prepare a strategic plan, prepare a strategy for the business I should also understand how these various stakeholders influence my business operations, and if I ask you do it in analysis you do it in a way that you think.

And if I ask you to do that analysis you do in a way that you think is right, both of you may be right and both of you may be wrong as both of you right because you have a right way of analysing business studies, both of you wrong because you did an analysis which is wrong because it did not have a definite way in which you could make an understanding of business strategies it is simple, but at least to provide some common understanding I am not saying that this is the only way in which you will have to understand business strategies.

I am an alumnus of the Harvard Business School, so I have some attachment to some models that come out of the Harvard Business School and I am a big fan of Michael Porter. So I would be using some models that Michael Porter actually formulated, some models that actually explain to the class how to understand businesses and in the process how to understand how strategic decisions are being made, so in effect I am going to tell you that these models are inputs for you to appreciate the strategic intent behind the strategic decision.

So I would be spending some time on those models, models that help you in understanding the industry, what do you mean by industry, industry is a set of group of companies engage in identical businesses, a two wheeler industry will comprise TVS Motor, will comprise Hero Honda, Bajaj, a car industry or four wheeler automobile industry car industry will comprise Tata Motors, will comprise Ford, Hyundai, so like minded business businesses like minded companies aggregated form in industry.

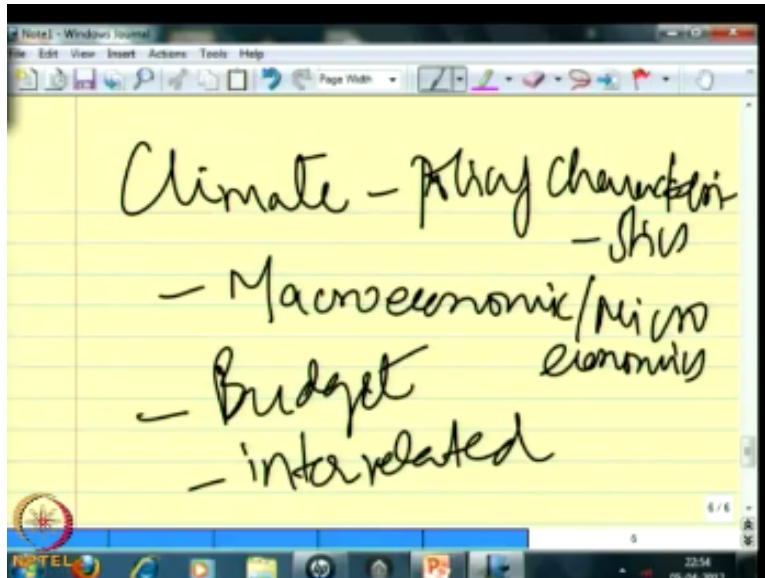
So when you are talking about strategy I would want you to understand the logic of an industry itself, so you might be a part of the industry, so it is not enough to understand just about yourself but you need to understand the industry dynamics, because your decision is based on the industry dynamic search bar, it is not just understand industry what I say you should understand the nation.

So even before investment comes into our country why did Ford decide to invest in Chennai, why did Indian companies decide to invest in Africa which means there is something happening in different countries that provides relative comparative advantages as a result of which investments go all over. So it is about industry competitiveness, it is about Nations competitiveness, that you need to understand.

Why did a set of this message decide to get into different countries and why not do these countries to understand even competitive or you even need to know how to corporate, corporate or conglomerates, how conglomerates view their subsidiaries, but biggest conglomerates in India for example how is TATA, now if you all that in TATA, how you going to look at companies under Tata sons umbrella, Tata Consultancy Services, Tata Power Tata Chemicals, Tata Elisa, the hotel groups of Tata.

As a conglomerate also I would like to see how my subsidiaries are profound because strategy is not just that individual business level strategies also exist at a bird's eye view a particular example is that say Tata son strategy for a subsidiary, we need to know whether their models which are using and you be knowing to understand the birds eye view how do conglomerates get this birds eye view.

(Refer Slide Time: 43:26)



Now the third C is the climate and I told you that the policy characteristics is not policy characteristic which means various policy decisions that are being taken by the policy makers and we have such various levels, so you need to understand some very fundamental macro and microeconomics which means you need to know what is GDP, what is GNP, how is it calculated, what it means to have a higher GDP what is inflation adjusted GD.

What is nominal GDP, what is a real GDP, need to know what is inflation, what is interest rate, how was these both related, you need to understand the macroeconomics and microeconomics, you need to understand how to interpret the budget and I thought I should teach this class, this because every time to come February and at times during March your blue on to a TV set, or you read dreams and dreams of newspapers that covers the budget.

And very often I found who are saying that they were not really understood what the budget is all about, the budget analysis is different, ball game are together, but at least I am not going to make you experts to analyse budget to the last mile but at least you should be able to appreciate a country's income statement and balance sheet, how does a country earn income what are the sources of income and how does it spend.

And why is such decisions are being taken to generate income, to borrow money and spend and what it means to the country and because of that why are these macroeconomic indicators that I talked about earlier keep changing which means that these policy decisions are always interrelated. So we need to also understand at a superficial level, how these various policy decisions are interwoven and intertwine.

Because a decision taken by one arm of the government affects at the different arm because we live in this policy web where decisions taken are interrelated and other end of the day it affects businesses also. So we will be discussing in this course 3Cs as I said earlier, the cose this will teach you the fundamental and universally accepted principles and syntax of accounting based on which you be preparing financial statements.

And this is important because I told you that this actually is the currency measure for success of business, the second C is the conduct of doing business, how decisions are being made, what is strategic intent, strategic process behind such decisions and the third C is the climate that gets created because of various policy decisions and it is not this climate that business transactions happen.

And before I conclude I would also like to caution the class, that I am not my endeavour is not to prepare experts in all these 3Cs, that is a huge task, but at least I am making an honest attempt to give you at a very superficial level and understanding of some key terminology and understanding of some basic inputs that gets into these 3Cs namely the contact, the climate of board.

So that you do not feel that 10 years let us assume after 10 years you are a general manager in a firm and that you did not do an MBA the fact that you did not do an MBA will never be an handicapped to you when it comes to engaging in management practice, so at least that level I will give you some inputs that gives you that comfort level, that gives you the feeling yes I think I can make sense in a business dialogue.

I can make sense in a leadership meet that is going to talk about the strategic route map for firm and I would really do not care whether I have an MBA or not. So the absence of an MBA is not going to be handicapped for macro environment, that precisely why I think I am going to offer this course to you. So next class when we meet I am going to start with the first C which is the code of business, which is accounting.

So when we meet next class, I will just quickly start with a quick refresher on what we did today and then we go to spend some constable time in understanding the principles of accounting and if time permits we will jump into certain important elements of how to record

transactions, principles of debate, credit, double entry, book keeping and all that. So when we meet next be prepared you will be entering the world of accounting, thank you very much I will see you next class.