

Design Thinking A Primer
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Introduction to the workshop team and the Demo Problem

Siddharth Maturi [CEO, Knoin Electronics]:

So hi guys, what we are trying to do now is we will be using design thinking concept and try to build a case study on few problem statements we've identified what the school students are facing today in today's generation. So what we will be targeting is school students from class 6th to class 12th and studying in Pune basically and few problem statements we have identified faced by the students are one is the access to digital learning and digital content, how easily they are accessible to e-learning and all other applications and tools that are available for students of this age group.

Then is the actual note taking process, how efficiently students are able to take notes and organize their written content for say it like their school notes or tuition notes preparation for their examinations, then their video learning content which is digitally available nowadays. So basically how well this input method of writing or taking down notes is happening and how efficiently these notes are being organized for future reference.

So these are the problem statements we would want to bring out right now and use design thinking as a concept to come to a conclusion where we can come up to few desirable conclusions and make a product or a service for these problems.

Professor:

Okay, I think what you have taken is a very responsible sort of problem, I really like the way you looked at it and I have seen you Siddharth from the past entire team is that your focus on these specific target segment of children in the age that you mentioned is good, because I think what they are currently facing right now is the cusp of where at home they like these gadgets, particularly city like Pune in India, I think they have access to gadgets at home, they like it, they know how it is, they are wizard they are in fact better than their moms and dads.

But at school they face that they still have to write and hold their pens like this, they are penalized if their handwriting is not good, they have to carry a whole bunch of things with them

like textbooks and notebooks. So at the outside, I would really appreciate the entire team of Knoin for bringing this up for our case study, so I really like it.

So for me the honest question is in design thinking itself if you think about what we have been talking about in the course itself is that we are going through it in a systematic methodic approach, right so you have seen it in my class as well when you were in my class. So empathize, analyze, solve and test so these are the sort of broad categories what we are doing. In that I would like for the entire team anybody can pitch in is have you actually seen! because you are obviously not from the target segment and not children anymore, right I would like you to be but now you are not.

So I am really curious as to where and how is this, shade some light on who did? You come up with that? Did you come up with that? Did you come up with that? How did you do this? Do you sit under an apple tree and the apple fell! What is the story about?

Suprativ Das [CTO, Knoin Electronics]:

So to answer to this one, the note taking process I will say what actually the problem is in this note taking, till now what we have seen in our education system we are all using notebooks right to carry or to write notes and the problem with notes is it is physical, it takes space and it has got weight. So it itself becomes a hassle when you are carrying a lot of notes, the reason being one thing is managing, there are so many topics in a daily life we are in a typical school a student is faced with so many topics in the class but it is not always easy to remember where he has exactly written the notes. It might be a very small point but you are getting the small point might be written anywhere, but to find out to retrieve that thing is again it is a hassle for the student itself.

And imagine if somebody has to maintain notes over notes, so throughout the day is like from the months the volume will increase, the management, the overall managing the notes it becomes a bit of a difficulty, is not a bit of a difficulty, it is actually major concern, too many notes so searching, retrieval and you want to give your notes to someone else it is again knowledge sharing the problem would giving these notes is again a knowledge sharing thing.

You do not know which notes where have you kept those notes, you need an answer and you ask Suprativ do you have these notes? I'll be like yes, I have but I am not able to recollect, I am not able to remember where I kept those notes. So if I am given an opportunity where I can

actually find these notes very easily and I can give it to you perhaps this will be a very easy thing for you and mutually it will be very useful for everyone, right.

Nithin Kurian [COO, Knoin Electronics]:

And also like how Siddharth was mentioning, there is a plethora of digital learning available right now but the current infrastructure in schools and in a class room per say the pedagogy does not allow the student to explore this opportunity and that is where we would like to come and provide a service where the entire activity of learning which includes taking notes having availability and availability to digital textbooks, digital learning applications everything to happen within the classroom framework.

Professor:

Was it your own experience in class, I remember asking you know do you guys remember what I did in last class and everybody is scrambling through their notes and they are not finding it, they look at their neighbour to see if that guy has written it right, is it this which lead to your focus on this problem or was it something else?

Nithin Kurian [COO, Knoin Electronics]:

There is certainly a level of personal experience involved in what we are trying to tackle, but we have ensured that it is not just our own personal problem but it is a problem that almost every student faces in terms of not having access to what he has written earlier, and having access to textbooks only through the physical textbooks, having to go to libraries to get that particular textbook.

So bringing everything, making the entire experience digital makes a lot of sense not only from our own experience but also from what we have seen through our learning days.

Professor:

Okay, So Siddharth question to you is, you have mapped your personal experience to this problem I can see but, now I see that the segment that you have picked is very specific to this and I can see my own reasons why you went but I really want to know it from you guys is to why from overall vision perspective, why this segment and why it makes sense for you guys 4 of you?

Siddharth Maturi [CEO, Knoin Electronics]:

To answer this question Sir I would like to say this for a school going student writing is the most important activity which helps them learn in efficiently that is what we have identified, seeing experience throughout our school days and college days, so more writing enhances our memory is one what we have been learning through all our school days, then it helps us understand concepts better and practicing graphical representations and diagrams helps us remember those diagrams better for a longer time.

So considering all these points and factors, having this product which can help the school going students basically where they are supposed to maintain different subjects, notes and also have different textbooks so different subjects which is a kind of a hassle for a young kid who is still in process of learning life and about subjects, seeing the book itself kind of motivates most of the students nowadays, seeing how fat a maths textbook is, how fat a science textbook is, that is basically playing on the mind-set of the student.

So all these factors all pitch into this product and what we are trying to do with this product is not have so many textbooks and notebooks for each subject where students can actually maintain all their notes irrespective of school, tuition, home, examination, preparation, anything they write can be organized in one personal digital space and also helps them actively write frequently helps them write also which is a good learning process for young kids and considering the fact that notebooks is majorly and heavily used in schools and paper is a material which we want to replace from a very long time but not have found a viable replacement.

We feel this whole concept and this idea could be a right fit in for that gap what we have found out, where we can actually take down notes like we are taking down notes in our notebooks and also have access to textbook content like we been having through all the textbook content.

Professor:

Okay, Shyam I have a question for you, you are the marketing guy so what is the market pulse the whole notion that writing to me is a lost art it is becoming soon a lost art, I write notes here but I see often that people are in front of device they are writing or the thumbs are into play and I have not heard of people actually use their handwriting if fact they themselves forget that this is the thing. So what is the market pulse on this, you are the people guy I know you are very friendly with people that is what I hear, so this is my question to you.

Shyam Paul M [Marketing, Knoin Electronics]:

So right now there is a shift from like people are preferring typing more than writing, it has been observed in few schools or institutions as well but the thing is like even though there is a shift in you know entry of keyboard and all, writing is being used everywhere even in corporate offices, institutions, schools, anywhere.

Siddharth Maturi [CEO, Knoin Electronics]:

We have seen this digital transformation of entering content digitally through keyboards and typing basically, the whole activity of writing has been transformed to typing nowadays to have a digital copy or a digital saved content or something like that. So this basically is when we talk of typing, we are already in a prefix state of mind what we want to type a particular word, a particular thought, a particular sentence. But whereas, in writing you just go with the thought process, we just keep writing what we are thinking in our head.

The way I write personally is I write a word I draw flowcharts to around that word, then try to make up the whole lecture in flowcharts or couple of words itself and then make up the whole lecture for myself looking at those words. So in my case writing is a way of learning in elaborating that concept in my own way which cannot be possible in typing I see, if I am having a laptop in a classroom and if I am supposed to take notes I will just keep typing what the professor is dictating or trying to teach whereas, when I have a pen on a paper I will just keep writing keywords or random concepts or diagrams then I will put my thought process into those keywords and come up with my own learning article or a blog kind of a thing around that concept.

So this is where we in the current situation are missing out in terms of having a digital input system.

Nithin Kurian [COO, Knoin Electronics]:

And also Sir you have to see how keyboard as a form of entry came into existence. The invention of keyboards was so as or so that people could digitize what they wanted to write. If there was a medium where I could write it on it digitize what I wrote and that became the standard for all the technology that has evolved out of it, be it desktops or laptops the people would probably still have kept on writing because writing is very natural to all of us and writing is something that we have learnt as kids and we have been introduced to when we were in school, but typing is something that everyone is forced to get into once they get into a post-graduation or when they are getting into a cooperate situation.

So if there was a technology which would have allowed people to you know write and whatever they have written got digitized easily then probably the way technology has evolved and keyboards have evolved into desktops and laptops would have been different is why we think an opportunity for something like this exists.

Professor:

Okay, here is the tech question to you Supra, he is a tech guy I know in this team. I recently had to sign somewhere okay one of this digital gadgets and I signed after few days I looked back at my signature and I was like what?? is that is that what I signed, so first of all I did not enjoy the whole experience of drawing on this particular screen, okay and I do not like it, I like a pen and paper and I want to sign somewhere if it is a signature it has to be that personal to me. So what is your take on the current scene that is there and fill some gaps for me.

Suprativ Das [CTO, Knoin Electronics]:

Like you said writing itself is an experience that you said right?

Professor:

Correct.

Suprativ Das [CTO, Knoin Electronics]:

Till now whatever digital tablets have been in the market where we write the medium that they use is specifically not meant for writing and the problem that we have is with notes carrying papers. so this medium this digital devices whichever whatever you said like your signature was not being recognised properly is because that is something that is processed, whenever you make an impression on the paper you will have your own initial signature you will not get it anywhere changed in the future as well, you see the signature it will be there as it is.

So our product it gives the same experience where you can store the signature, you can see whatever you write, it will not get changed in the future and on top of that like you said about the digital product that are already available, you are not getting a satisfactory answer. so the reason is they are not actually focusing on handwriting, they are focusing on taking notes it is fine, but imagine you place this device the tablet the existing products in a hand of a student, after writing a few sentence they will probably not able to write anymore on that.

And there are lot of other reasons why this cannot be considered to be are preferable writing medium for any student because first of all it does not have a fidelity like a paper, second thing is that the digital tablets that we see around nowadays so they have many unrestricted contents, you really cannot restrict a tablet to that level where the user the who is using that will lose the interest of using that tablet.

If you keep on restricting that tablet to its core functionality what it is meant to be so people will actually lose out that essence of writing on the tablet. On the other hand if you provide them a device which is actually meant to serve what it should do. For example for our case it is serving the purpose of a notebook, it is giving you the exact similar experience of how you write and you are getting that you can store that thing in a digitised format whichever you right you know it is in your own handwriting, you do not have to like differ from this product to any other digital medium, even the best mediums that we see around till today they are still digital, they do not give you the real time experience after writing.

Professor:

What I understand is that writing has to be writing in its purest form and then maybe digital and all that can come later, okay I hear you.`

Suprativ Das [CTO, Knoin Electronics]:

I would like to add one more thing like Nithin said why this keyboard? the keyboard was invented just because what we had in mind, whatever we had written down at an earlier point that could be digitised, that was the reason why keyboard came into existence, it was not because you could draw line with the keyboard, no you cannot draw line with the keyboard, it is with the mouse that you can draw a line, these are all digital devices through which you have you do not have to use handwriting, handwriting is the most natural thing that can happen.

So till now the products that are again that are existing in the market they do not serve all these things.

Professor:

The same note I am thinking, I have read somewhere also that you are efficiency of recording information okay is extremely high in a keyboard, so I can type so many but actually when I write the notes it is probably a lot slower than an keyboard. So in that way do you think that your target audience of you know these kids are they losing out on you know because now they

are talking about information overload and so much of a stuff, should not there be recording all that and be on top of it all the time because speed is the essence, you cannot be slow when things are going so fast around you, so what is your take on that?

Siddharth Maturi [CEO, Knoin Electronics]:

Like you said keyboard is a fast way of entering input this is completely agreed Sir, in a sense if we have a set of information or data already existing in another form and we want to take it into a digital form or a virtual memory form, yes we can do a copied writing kind of an activity keyboard and fastly get it on the digital space. but when we actually want to think something new, create something new, put our brain into that thing we cannot use a keyboard to actually write a new sentence, maybe and you poem, or a new article.

We probably like to prefer work with words around here and there, then try different sentences if you do not like we are all used to striking off, then again try writing something similar with diagrams, so all these activities are not supported on a keyboard efficiently. So we are thinking it in terms of learning as the number 1 tool and trying to enhance the creativity of the student which is very meagre in terms of using a keyboard.

So in terms of keyboard it is very straight forward it is like you ask a student to by heart so and so and number for question or chapters for the exam and for the exam end and come and memorize all those thing back is what we are using a keyboard basically, you have that thing copy, paste it and type it back there. Whereas in writing you write your own story what that concept what did you understand using that concept.

So in terms of writing people actually improvise more while writing than on typing or using a fixed information.

Nitin Kurian [COO, Knoin Electronics]:

I can give you a typical use case in a classroom where the speed that you mentioned in the keyboard can be a disadvantage. Imagine because you are getting the kind of speed that you are getting on a keyboard you would probably end up like Siddharth mentioned taking in every word that the professor says, after a while it becomes an activity that you are not even aware of, the professor saying something and you are just typing his notes off, whereas because of the inbuilt slow pace of writing you have to listen to what the professor says, understand what he is saying and try and capture it in your own words.

So certain level of learning activity has already happened by the process of writing it down, which is why we are trying to bring this into the educational learning sector.

Professor:

Okay.

Siddharth Maturi [CEO, Knoin Electronics]:

So the moment some sort of information is ready to go into the virtual space then this product makes more sense than a keyboard, but if we are talking about some information already there and trying to shift that into a cloud space then we can efficiently, definitely use a keyboard to copy that and take that. So that is the space where creativity learning is more effectively done is the target we are trying to.

Professor:

What Nithin said reminded me of Mark Twain's quote, "that a classroom should not be a transfer of notes from the teacher's notebook to the student's notebook without going through the minds of either". I am an old school thinker that way that I think notes hand written notes actually help you and for particularly when you are trying to learn something new it really enhances your learning speed, learning process, everything is refined internally, it is a hand talks to the mind kind of thing, so definitely I agree with you on that part.

Is there any study or anything that you guys did systematically so because design thinking is one part of it is art in the sense that you have to empathize with the audience, you have to really get to know what you are observing but you are going a level deeper and then you are trying to solve that issue and then you are finally going back to them this is what I think will solve it for you.

So in terms of process or in terms of some kinds of systematic way, have you guys attempted something in the past? I am trying to get wrap my brain around that.

Nithin Kurian [COO, Knoin Electronics]:

Basically in terms of research towards how something like this would work for the target market which are students, we have gone ahead and done some focus group research and interviews basically most of them either just who were passed out from school or currently in school. So the feedback that we received is that students are certainly interested to bring all

their notes into one location essentially, because they do not have a digital alternative our feedback from our research what we have identified is that lot of students are using a single register to capture notes from all the subjects that they are learning from say morning till evening and they probably use bookmarks or posts it to you know organize their notes within that single notebook.

And it is again mandatory for all students to carry all their textbooks whatever they have to learn that day to school and that certainly is a hassle it is adding a lot of weight it is a very cumbersome and tiresome activity for students.

Siddharth Maturi [CEO, Knoin Electronics]:

And also in the past 2.5 and 3 years as we started from the idea stage where Supra has come up with the idea and till today where we have come up to a level we can probably build a product and few services and a system around it and organize system around it, we have changed this concept or the product in atleast 3 to 4 times basing on the interactions we had with the market, students, teachers, so we have basically started with a simple board a writing slate where we can just write and erase like in our pre-primary school slate.

Then we tried with another prototype where we can actually connect this slate to a smart device through Bluetooth and actually record that notes in a smart device, then write now we are in a process where we can actually write these notes, retrieve these notes in the same device and organize them in the same device and directly sync to the cloud within the same device.

So even there is a lot of talking that has been done with the market, parents market as in the school students, then the parents, teachers, then the school admin staff in numerous occasions where we have come with different types of insights from different regions students from different regions have different types of insights. So considering all these insights we have come to this product where we can actually write, organize and save virtually all the content.

Professor:

Here is a generic question, if somebody were to start out on a path like what you have said so you are here on this path for 3 years now where you have been doing this sort of design thinking-ish process of going to the market, finding out what they want, then fixing your product for that, then going back again and seeing how they react. So very classic design thinking sort of approach in this and I know you are also doing it professionally now.

So my question to you is suppose somebody starting out completely from clean slate not to pun on your product but clean slate, what would your you know experience say hey guys do not go that path, go this path this is what we have learned that is full of you know difficulties, this is something that we recommend you should be on, something like that for them, so this is from a practitioner point of view.

Siddharth Maturi [CEO, Knoin Electronics]:

First thing I would personally like them to start off with validating their problems, go talk to their customers, empathize well enough with them, walk in their shoes, see what their lifestyle is, then make a task flow of what their daily activities are, daily routines are, make a systematic understanding of their routines, then try to draw out few conclusions where we can work out which might be a problem statement to them and they have not identified and try to point out those problem statements, iterate on them.

I think identification of the right problem is the key for the entire process what we will be going through.

Nithin Kurian [COO, Knoin Electronics]:

To add onto that the problem might not be what it seems from the outside initially at the onset, you might have a product or an idea in mind and you might think you are solving certain problem but when you interact with your customer long enough and when you dig deeper into why that problem exists then you get to understand like he said what the core problem is and.

Professor:

Can you maybe perhaps given an example of this can you give?

Nithin Kurian [COO, Knoin Electronics]:

Right, in our situation also what happened is we set out with this plan that students would want to digitize their notes, so then we ask the question that why would students want to digitize their notes. So then what we understood is students want to organize all their notes in one place, then the question would be why, why would they want to organize it in one place instead of having it in several places?

So then one would be it would make it easier for them to learn, it would make it easier for the teacher to probably understand where it is, it would make the organization part of it very easy

for students, so we push deeper what the problem is and then probably come to identify okay this would be one reason why students would want to switch to our product instead of continuing to write on paper.

Professor:

So as far as I understand it is not enough if you have a good writing experience alone. So writing experience is the start of all of this, right. So then there are several levels, layers around which a student is grappling with on a daily basis and this you could not have been in your ivory tower of you know product design and all that or if you let Supra be, you would have just been a great, I am positive, but with you guys supplying the insights is constantly being challenged to say okay writing experience alone is not enough, but actually there is far more to this, I get I mean not to keep punning on him but that is one way to do it, okay nice I am learning as well in this process, okay.

Any other startling mistakes that you made and you want somebody who is listening to all this say oh thank god! I am not going down that path.

Siddharth Maturi [CEO, Knoin Electronics]:

Validating these problems is a very important aspect in this very initial stage of our at least our situation I can consider and say Sir, because in our early days like every other start-up we were also a little eager of generating revenue, starting to make some money so that we can attract few investors and market as well. So our idea was to bring out this basic product where we can actually write and erase only for a pre-primary students where learning is a very initial at a very initial stage basically, they still learning to write and all.

Then we have actually identified that what they are going what learning they are doing is not as efficiently on the just write and erase (wala) board, then we have validated and our whatever validation we have gone through says that just writing and erasing is not doing any good to the student just because.

Nithin Kurian [COO, Knoin Electronics]:

He is getting the experience of writing on paper, so it again comes back to your statement that writing experience is not the only thing that is probably something that we learnt not soon enough in our journey with this product.

Professor:

Okay.

Nitin Kurian [COO, Knoin Electronics]: It could that learning could have come way earlier and the product would have evolved and transitioned much sooner to what it would have been right now.

Professor:

So interesting, I will hold on to that word saying the product evolved, it did not just appear and said oh this is a great product let us start selling it, it actually evolved, I really like what you said because often times as inventors as problems solvers we get hung up on that first idea and we think this is it, this is going to change the market, you know this is going to revolutionize everything that is out there, but it is usually not the case, it actually it slowly goes through a transformation first in your head then you know with able team members like yours and then slowly it starts transitioning into better and brighter prospects then it is and you do not like it but it still continuously evolves also, he may not like it but still has to go on, okay nice.

So now we have learnt a whole bunch of what you're thinking process earlier was and what you moved on to becoming with all these thinking and doing and going back and forth in this with the market, with yourselves all this goes on. So now my question will be to look ahead and say now we are going to apply design thinking as such on this product which we will show to the audience of course and how do we take this forward and how do we use this four steps of empathize, analyze, solve and test again one more time and see how to move it forward that is going to be our focus the 5 of us are going to focus on this for this course.

So my question to you again is that how shall we move forward in that and what is stopping us from taking this product out there into the market, what are your primary challenges that you want to address out of our course here, so that we can show them that this is what we are going to do in design thinking.

Nithin Kurian [COO, Knoin Electronics]:

To start off with what I would like to say is because it is a product a hardcore electronic product, one shortcoming that we face is we do not have even a concept or a working prototype to take to our customers unlike a software product where in you could easily build a minimum viable concept and take it into your market and see how probably your target customers would react

to it, but because we have a product the concept is there, we as entrepreneurs and creators of this product are very clear atleast right now what the core functionalities of the product would be, but we do not have a hardcore physical device as such to take and probably empathize and learn from our customers so that could be somewhere where design thinking could help us out.

Professor:

Okay, that is one. Any other is that you can think off that we can use this as a platform?

Siddharth Maturi [CEO, Knoin Electronics]:

Yes Sir, going back to the evolution of this product part, like we have said before, we have come up with a model which was denied by a market through our validation, then we will come up with something else then the market needed, even more than that, again now we are trying to come up with a POC or proof of concept which we again want to go to the market and test.

So this again it is like the same process of design thinking applying itself into this evolution of the product concept within itself. So we again go back to the market and if market says yes this is what we asked for, now we are going to actually analyse and we are going to make a proper design or an outline around it and make it a solution to their problem. If they say this is partially what we were expecting then we again go back to design thinking, study their problem statement well, go deep into the core again, again come up with a better solution, again analyse the solution, test and this is another process of in terms of evolving this product into a next version we would like design thinking to help us out as well in.

Professor:

Okay, what is next in terms of, so now I know how it looks like I know what sort of have a pulse on what the product is like what they like, what they do not like, what they have and what they do not have, I sort of have an idea but I do not know how it will go forward. So if design thinking can shed light on this is going to be how we are going to proceed then it will probably help you.

And to para phrase what Nitin said how do you communicate the concept because you have a product I mean you do have I know what do you mean by I do not have a product it is a conflict, so on the one hand you have something like a prototype it is not a full fledge product like you would see in the market, you pick it up of the shelf it is not that, but neither is it an idea that in one of our heads or in shared concept, we can see it in the front, so how do I really convince

somebody that this is the exact concept I have in my mind, this is just a sort of reflection of that.

Nithin Kurian [COO, Knoin Electronics]:

And me as an entrepreneur when I show him the proof of concept the end market product is there in my mind, but the judgements and the insight that the user might be giving is solely based on the concept that I am showing him, so is there going to be a certain level of biasing am I going to get misguided information these are all some concerns that we would like to take care with design thinking.

Professor:

Very interesting, okay anything else all four of you? You have something? Technologically do you find any, so I heard an interesting I am pulling words out of your mouth I do not know why I do that always as always even in class I used to that? So is the space weight conflict that you talked about I think that is the key conflict in your product, not product itself, your target audience is that they have a certain space in their backpacks, they have tender backs let us say we do not want to overburden them, they do not want the, in fact lots of governments are already talking about having weight restrictions on what the weights of the bag should be, okay.

So with that that is an interesting conflict also, so I have pulled that as a something that our method can handle, is there anything you would like to add in from the technical aspect, Supra?

Suprativ Das [CTO, Knoin Electronics]:

Sir, technically wise I can only say that whether this product when we make a finished showable product to someone the technology can only be determined once the person actually likes that or if there is any kind of risk or if it needs any kind of improvement or any kind of changes, in that case we can actually use design thinking to come up with a solution which might actually suit (someone) a user's particular need because right now what we are doing is a general thing like people writes like you said pages and notebooks they consume space and they have weight, so regarding this technology if the thing that we have done till now is just coming to a consensus that people yeah they will love to have something like this which they can save.

But again in the later stages once this thing happens throughout the process if something needs to be changed or something needs to be modified then obviously this design thinking is going to help us because it technology.

Nithin Kurian [COO, Knoin Electronics]:

Even in terms of the technology that is be used in the product.

Suprativ Das [CTO, Knoin Electronics]:

So because it concerns the four aspects that is there, the emotional aspect, the analysis, the solution and again the testing, the technology actually follows a similar pattern. So design thinking will help us.

Professor:

Okay, thanks for the confidence in the method, any other open thoughts that you have.

Siddharth Maturi [CEO, Knoin Electronics]:

Another thing would be Sir is the infrastructure what we are trying to create with this product, since this product is inclined towards writing as the process as a soul process and this product is completely around writing, there are lot of day to day activities probably maybe every job profile would be having where they are supposed to do some sort of writing in a day, like a distributor how a distributed information system works or maybe how a school in a layman's example how a school administration works taking down from a director of the school till the peon.

Imagine a set of instructions are being passed to a set of people to perform a set of job and they complete that task and again submit it to that higher admin and that admin completes the entire project and submits to the super admin, so all these activities can be handled and probably managed to a device like this basically. So what we are trying to do is not just build a device which helps writing and organization of notes but also creates an ecosystem, probably an infrastructure where all these activities associated with writing and also daily activities which include writing can be done through this device.

We would also like design thinking to help us in building a proper ecosystem for this product, where we can actually after the product is sold to a user, then how the infrastructure is given to

them, how it is serving them, how it is maintained for them I think design thinking can help us in solving all these issues as well.

Professor:

Okay, I have written down 4 problems that we could possibly take up, so we've given an overall view of what the problem is that children are school going children are the main target segment for us, particularly I think I am feeling that you are probably in the high school category, the list of problem that I have written down is that I want a full fledged product to convince somebody to even take a stab at it and see how it works, but I do not really have a full fledged product, really have a prototype, okay is that good enough for that, is the insight that I draw good enough for that, so I get it.

Then what is next coming up next, is it so now we have all seen revolution in terms of display devices is getting smaller, is getting bigger, it is going through lots of, it is getting 3D, it is going through all sorts of transformation, but in terms of the act of writing what is next? So that is something that we want, in terms of technology is this the ultimate technology that is going to be inside it or is there something else, is the product done can we say it is done, is it going to be something else which is going to be the backend of it, or is it going to fit into it, is it going to be something that the users are going to be satisfied saying yes with this technology I am happy with that kind of a feeling people get.

And lastly the overall view of where this writing fits in because after all we are looking at writing as a central piece where it is satisfying so many things, it is meant for so many things, it could be like you said, it could be for an admin in a school, it could be an aircraft you know checklist system also they also do a checklist, right. So it could be anyway but still what people say to write is a verb and where what else nouns can be used around it is what we are concerned. So let us see, we will see how to use design thinking and I am going to be your let us say official guide, or consultant, okay professor, whatever mentor maybe and we will see how to evolve this in the design thinking perspective one in making your product better and two to see how to demonstrate to people how they can learn from the exercise that we are doing practically and get some lessons out of it, okay so thank you so much, thank you.

Shyam Paul M [Head, Marketing, Knoin Electronics]:

Can I add one more Problem!

Professor:

Yes, please.

Shyam Paul M [Head, Marketing, Knoin Electronics]:

Yes, so Sir now considering like most of the schools are starting online learning, online education like they are providing online education in the schools, but there is a thing like why most schools are not able to provide good infrastructure or the basic tablet kind of learning because there are few things. So we are like we can try to get those answers with design thinking like why schools are not implementing online education or why they are not allowing tablets or laptops in the schools, so there are few things which we can try to solve with design thinking.

Professor:

Excellent, great I have added that as in what is stopping us in going digital in the schools, because they are ready most of them are already been talking about smart classrooms and having online e-portal and digital portals and all that in fact fee payment has become digital, so many things have become digital, how come still we are in some ways we are still stone age, in some ways we are space age. So what is going on here and will this actually help them with that? Excellent that is a brilliant design thinking question to ask. Okay, so thank you so we will see how it goes, thank you so much.