That's so many of you came I'm very happy. Uh, you will hear today about my, uh, Vanni project, which has started, is going on at the, how can the steel, since 2018, it's a three-year project that started in February, 2018. The co the full name of the project is innovating knowledge. It's the doors [inaudible] in the current Legion period. Uh, and it will be running it. How has until the August of 2021. So that means I have about nine more months to go, and that means I'm finally entering sort of the final state. So that's the part, but I will have slowly publishing different kinds of outputs of the project. And you will hear more about it also today. Now, I don't know how many of you feel they are experts are medieval manuscripts and on the early medieval period. So I will try to keep it very sort of general and tell you it's a bit more of the bigger questions or the better sort of bigger ideas into which the project kind of feeds who then talking about technical specific equities.

I will first, I think spend about half of my talk about talking about this, and then I have some examples, some sort of case studies, I prepared four of them, but I don't think we will get through all of them. So let's see how it goes. I think we can stop after two or three if necessary. So it's okay. Uh, so my approach fits into, in terms of its framework fits into the sort of framework of the diffusion of innovations, the study of intellectual networks and the study of, uh, institutions as a specific kind of infrastructure for those, for the diffusion of innovations, because I'm a medievalist, I'm going to talk about middle ages. And specifically that the period which are concerned with are the early middle ages and even more precisely the current Legion period. So from the second half of the age of 12, the ninth century, and the big question or other big go out my project has, is to understand better how innovations spread in this period and how they're spreading was determined by the configuration of the intellectual networks.

So the, the position of different institutions, which were responsible for the production maintenance and dissemination of knowledge and the spirit and the way how they were connected in this spirit. And if you want to know more about the projects and read more about it, I wrote a sort of Hindi, 1000 word summary and publish it on the middle Alto block. So if you ever want to know here is the link. I don't know whether you can remember it or use it. You can find more about the project there, uh, at the heart of the project is a question which, uh, occupy, so scholars of the middle early middle ages for a long while, and that is the phenomenon of what we tend to call Curlin and Renaissance. And of course the big question is what is this current engine Renaissance? What, of course we know that there was such a thing, but the question is what is actually Renaissance about Renaissance?

What is it made of what is the matter from which this made, um, you may probably know from your school days that, uh, middle ages, we have three important periods, uh, intellectual flourishing or intellectual, uh, booths, uh, one, well, the first one was the courage. And when it sounds in the ninth century, then there was a 12th century in a sense of the 12th and 13th century, then the Italian Renaissance in the 14th and 15th centuries. Uh, and for all these, the question is what, what is it actually, what, what makes them Renaissance? We know that something was happening, but it's very difficult to actually put a finger on it and say what was going on. Uh, there are many ways to approach this when the term courage and Renaissance itself or scoring that was in, uh, 1840. So in the 19, the first half of the 19th century, when this was first proposed, that there was a cartilage and Renaissance, uh, the, the historians thought that it is sort of where it can be defined as a sort of a Royal or Imperial program.

They imagine that there is sort of a, that there is the emperor domain, and he has some sort of perhaps, and to rush off advisors of important people, whose name, we know people like our queen of York or [inaudible], uh, and they sit sort of together at the core in Akron, perhaps, and they are creating some sort of a top-down program. They have an agenda in mind and they have concrete ideas and they're going to be implemented because the emperor said, so, and this is happening in a very top-down fashion, the very control and concerted and organized fashion. Now, since the 19th century, this idea

was quite undermined. And today we sort of moved away from this idea of Renaissance and Renaissance as a program, to both modes of nuance, view of hurling children stands as being something quite complex and perhaps having a, sort of an emergent quality as well.

Uh, this is something that will be known to other type of people like me. I'm a bit of a Palio graphers the party aquifers notice or note. This is quite a long time ago because of Carla Minnie score that one of the most important products of, and Renaissance most closely associated with privilege and Renaissance. Um, they will tell you that, okay, uh, there is no such thing. There's no single center or no single important place where curly domain school originated. Uh, there is no single name to put on it, no special inventor. In fact, uh, the way how it looks the best way to describe what live mini school is a type of script that's sort of purify for clarifies becomes there comes into being as a result of interaction between different parties and different places. So it's not a sort of a parcel that comes into being in a specific location, but it's more, it's a product of interaction and it becomes sort of more and more curl engine as, as, as long as that interaction lasts.

And okay, as far as what the, once these, the networks that are behind it sort of start to dissipate or sort of the fragment, the Corrlinks of municipal fragments as well. So it behaves very differently. Uh, and this is also the sort of vision I have or sort of the approach I'm taking. So I'm not looking at Carolingian as a sort of a program, but more as sort of an emergent phenomenon, a phenomenon I would even dare to say from my perspective, what is Carla generalize of the answer would be, it is a network phenomenon. It is a result of a specific configuration of important institutions in my case, monasteries and cathedral schools, which are interacting and will reach a certain state of configuration in which information and novel ideas can flow very freely in an ideal way for a certain period of time. And this is what it makes it, this is the matter, or this is the basic ingredient after the Renaissance.

Now, how can this be studied? Or how can we approach this sort of phenomenon of networking? Um, in my case, in my project, I decided to focus on a specific proxy that I'm using that proxy in question is eight texts. And those are the other, you should say is the [inaudible], this is a text. It was composed in the seventh century in Spain. And it was an encyclopedia. In fact, this is the most important medieval encyclopedia. Um, and it was the ultimate medieval bestseller. Uh, we have more than 1500 surviving medieval copies of this text. And specifically in the early middle ages, when it was the only widely available encyclopedic text, this was also, it takes, it would be available to every sort of moderately important institution. They will have at least one copy. Many places will have multiple copies. And there's really, we have a sense that this is really it kind of, it, everybody wanted to procure to have at least one copy for a use.

And that's quite interesting because as a result, there are many copies. There's lots of things to say the fact that it is an encyclopedic text is quite interesting too, but it has also another important quality. And that is that it is, uh, behaved as an open ended entity. Uh, it's this, even though it has an author, even though it has sort of an authority in a very typical medieval fashion, our readers of these techs have felt free to add and remove things to improve the change rewrite. And it's because it was an encyclopedia. So they have, it has a very utilitarian purpose, and they often felt that, well, if there is something missing in it, why don't we add it? And we see this happen in a quite large scale. And specifically in Corrlinks and period, this was a very important phenomenon. And the, because of this, I like to even talk off what they like to say, [inaudible] of the [inaudible] in the early middle ages.

So this really becomes the sort of universal encyclopedic texts to which anybody who had access to the most people who have access to it can make any changes they want. And these changes this, and it's in this medieval Wikipedia is what interests me. This is what is studied in my project. So I'm not interested in the text, obvious Drexel as it existed in seventh century Spain, or how it may have looked back then. But I interested in identifying various edits or what I'd like to call innovations that were made to the

text. And I'm trying to assess them, uh, justice in a similar fashion you can do for, uh, the Wikipedia. I don't know whether you ever thought about it, but imagine it this way, uh, Wikipedia consists of many Ebbets, uh, you can even see them. It is very easy in the environment and you can look at them and look for example, at who, when and why it makes change certain changes to certain texts, and you can study them, which for example, articles gets very lots of attention, which don't get any attention and what sort of attention they receive.

This has been actually done for certain parts of the key PDF. This is one example where we use a Dutch research project, I should say, which studied the topic of global warming in Tiki pedia. And they studied examine what kind of edits were made to the text of the article on global warming to understand what are the contested terms, what parties are involved in this sort of discourse on say a topic which is contested in this spirit. And they try to understand better how this course on global warming works because of X and in the same fashion, you can take different manuscripts of the [inaudible] check the different edits and try to understand why and how, and what context, where in what context these edits were made. And what is more interesting. This is just as in the case of Wikipedia, you will very quickly notice that some of these edits or innovations recur, because they, once they were planted into the [inaudible] into the encyclopedia, they begin to be diffused because they became important or popular.

And this is what I'm really concerned with. So there are two different questions. One of both are interesting to understand or identify the innovations that happened and try to understand when, where, in what context and for what reasons they were made. Well, they tell us about the changing intellectual landscape, the new developments, but also new sort of what's a contested topics. That's the notoriously difficult thing to do because sometimes not possible to say what exactly something came into being, or what does it mean? You know, w why with this editor will be made. He will see that in some of the examples. Uh, the second question is much more easier. And to me it's much more interesting as well. Once you see them recurring and multiple manuscripts, it's the question of how they diffuse, how they get from one copy to another. And therefore, if you follow the sort of their flow from one manuscript to another, you can perhaps follow their flow also from one institution, one center to another, and seek connections between them and try to understand the nature of this connection.

You can try to discern which centers were, for example, important hubs with regards to certain topics or for the innovations, uh, where they originated. Sometimes you can see that in other cases, you will see that the innovations do not originate in certain places, but these places serve as important relay points because that's where the innovations get concentrated. In other places, perhaps serve, as let's say blockers, once the innovation get there, they would be, it will be stopped because somebody has interest to stop it as it reached there. And of course, the question is also, there are many interesting questions behind this question of which innovations became widespread and which not, and why, if you can say that, uh, what's channels serve to transmit these innovation to diffuse them, uh, how often it happened. And this is indeed the case that a certain innovation independently in many places yeah.

Are such cases, but you see three or four times the same innovation happened in the same time. And you wonder why in stock, which innovations become, uh, global innovations or widespread trends regional, and which remained local and why, which were short term and which were very long class thing, and why these are the interesting questions. Um, so if did a study, this sort of thing, underlying tasks for me was to understand very well, the population of the manuscripts of the [inaudible]. So sort of the sub the first sort of stepping stone for this project was to create a, sort of an overview of the population of all the early medieval manuscripts of these text to understand where they are and how they look. Um, I was basing myself on an older project, which, uh, estimated there are about 300 manuscripts, but I can tell you today that this is one of the first sort of results of the projects, that there are 447 manuscripts containing the text of the etymology and predating the year thousands.

Um, and these 447 manuscripts are now described in a project that the base, which is now being built are almost finished with the help of the digital infrastructure. And some of the people who are listening to this doc are also contributed. So thank you very much for this. Uh, this will serve as a sort of new, let's say overview of the, all the, all the early medieval copies of the texts. And I hope that it will be not just a database, but I plan to publish the data so it can be reused. And I also plan to prepare a few publications about the data in this database. Um, so this is one of the reasons potent outputs as is planned for the project, and this is where it will end. And then we'll start with Mike. So let me tell you about some of the interesting innovations that I discovered happened to these techs and what they may mean, or what can we make out of them.

And I should immediately start, because I know there are some people who are textual scholars among you. So you may imagine based on what I tell you, okay, well, these innovations, these are some sort of textual barriers or additions or interpolations right, but that's not always the case. And in fact, the most interesting objects innovations have happened in the early middle ages are not extra nature at all. And the single most well, the one is in fact, a change that happened to the size of the encyclopedia. Now, uh, we don't know of course what the autograph copy of his door's work looked at his own time, but we are very lucky because we do have that description of the autograph manuscript. We know exactly how it works, exactly. Something about how it looked. We know it was described as extraordinary, large manuscript and contain the intro text in a single volume.

Uh, extraordinary, large is not, of course a quantified. We don't know precisely how large was it, but we can guess based off the, this descriptor youth for other co-teachers, that it may have been something, a manuscript, which will be called [inaudible] of about six above 650 millimeters. That yet I should, maybe I should have written it here is height of the page and the width of the page. So 650 is something like 35 and 30. Okay. If you don't know where that's a lot, that's really a lot for early middle ages, extraordinary, large, very few manuscripts look like that. So it actually looks as a sort of a very large dinosaur and the question that came to my mind and he, if he was okay, how many of the 447 early medieval manuscripts are very extraordinary, large? How many big dinosaurs do we see in that population?

And the simple answer is none. We do not see manuscripts that are that large, it's something extreme must have happened. Quite significant must have happened to those manuscript manuscript. Because when you look at the second generation of manuscripts, those that are precursor legions. So this is not the F Carolingian period, but before the current Linden period, uh, they are quite small. Uh, their average is something between 450 to 500 million meters. So they lost something like 15 to 20 centimeters. They're getting kind of small, and this is the smallest manuscripts we see off containing these texts. The only reason why they are not smaller is that 450 is about the technological limit you can have in early middle ages. Basically you can see, you see evidence that our scribes are trying to push and push and push and make the manuscripts smaller and smaller. And they stop at 450 because they cannot push further.

And that's where they stop. And this is the, in the second half of the eighth century, they reached the state and we have the smallest specimen that we see with a single exception. And that exception is Spain that this home of Isidore of Seville, where the manuscripts remain extra, quite large, not extra ordinary, but extra large, still close to the, the average is close to 600 millimeters. So they are not entirely much, they are small two smaller than the original principle. They are the autograph, but not much smaller. And overall, they seem quite conservative, which is quite interesting because it seems they didn't. There was quite lots of conservative sort of, uh, let's say pressure, you would say, or conservative. Um, you know, they, they didn't change that much as outside of Spain, which is quite interesting. Now what happened afterwards in the cartilage and period is also interesting because the manuscripts began to grow again.

And, uh, an average Carolingian copy of the same word, uh, has a target of about 4,530 millimeters. So they grew up grew by three to eight centimeters. So they got a bit bigger. They're not as big as they were at the say in the seventh century in, or what is it or had on his working desk, but they're quite as well. And they can seem to look more sort of more like those manuscripts at the beginning. Uh, and that's very interesting. You said, this is sort of a, U-turn like change. Why is that? Well, one part of the answer is we suddenly see a new species and that is, we have an extremely small version of the same text, or what can we call the handbook copy or handbook version in which the same text is no longer in a single volume, but it becomes fragmented into small sort of, even in some cases, booklets, which are very small, only on average, around 400 millimeters, and they can get much smaller, like 310, 340.

So what we see is a very interesting phenomenon. It seems to me a sort of a bifurcation in the sort of population where you suddenly, you see two different branches, one getting bigger, and as the one gets bigger, the other one or one gets very small and one gets very big. Um, and you will notice one thing about their features is that they're actually meant for different uses. So they really look like two different dinosaurs inhabiting two different ecological niches, and they sort of specialize in certain way. And that's why it's that I will stop here. And so that you don't think I'm talking really about dinosaur or any kind of biological species. This is it, this a view of I should have, I didn't bring my notebook here to show you, but perhaps you see this about this big, my blue notebook and use it as a measuring sort of measuring device to give you an idea about how the sizes of the manuscripts change in this period.

This is my first example. Let me give you a second example. I think we're still good with time, right? Can you tell me somebody maybe how many minutes we have? Yeah, that's good. Okay. So, okay. I will tell you 10 minutes. Okay. So we'll do a second one. And I think that will maybe it's, uh, so a very different example of innovation. This one is textual and it's uncompleted different scale because we'll will be talking here about a single word. So what are the smallest possible options areas for innovation? And that word is like a team is, um, what we see is that, uh, one of the spot one section of the ophthalmology deals with the seven liberal arts, uh, is contains a definition of the dialectical, the third, the third, third of the seven liberal arts. Uh, this is the origin of wording of the section, uh, according presumably to Isidore, which raised the third of the liberal arts is the dialectic known also at the logic, which through precise argumentation, discerns the throat from the false hoods.

And this is what you'd find in absolute majority of manuscripts. And you can be reasonably sure this is the original, but also this is the almost only version, but there's a small group of six ninth century manuscript, but only six manuscripts that are one word like your Timmy's. It says the third of liberal arts is the dialectic note, all sorts of logic, which true precise, sanctioned argumentation. This serves the throat, found the whole food. What a very strange addition. Now it's not just a mere sort of Verint reading or some sort of mechanical error. It's very strange because it's very clear with some sort of maybe even direct interpolation. Why otherwise, would you say that in indicator imply that certain types of argumentation or certain kinds of disputes are sanctioned or lawful legitimate and others apparently are therefore not? Uh, so it seems to have some sort of a point to make, and what is also surprising or very interesting is that of those six manuscripts in question five, have some sort of five contain indications that there is some problem with this part, uh, the word is erased or it's in this case, it is underlined, which means that there is doubt, or there is some problem textual with it.

It is added, it is even smuggled in there's one case where the, the, the there's a corrector who tries to smuggle it in, but it doesn't seem right, et cetera. So there seems to be some sort of tension in the text. Uh, it seems even that there are some cases where the sort of the work tends to be inserted interpolated. And at the same time, there is also an opposite pressure to kick it out again. And there is some sort of a contest going on, which is not unlike with the kind of context we see in sometimes in Wikipedia where things are edited and counter edited and edited back and counter at the back. And there is sort of a bit of a fight. And what is interesting to say, there are only six MONUSCO surviving, and

then it's gone. So it seems like there's an innovation or an attempt at innovation that's failed somebody, or some people, whoever they were were trying to interpolate this word into this definition, maybe to sort of change the definition of dialectic, or it makes up an implications about this use, but they didn't seem to succeed.

Uh, what is interesting about the manuscripts? Uh, these first-generation containing was interpolation, uh, which is here. I put here a dot, but it's actually these, uh, inverted droplets, or how do you call them speakers pointers? Uh, the six manuscripts, most of them are French, even this manuscript it's originally from around Bobby, but actually was annotated in FRA. It contains this interpolation was added in France as well. Presumably this is the only outlier and they all dates to roughly the same period around the mid 19th century. So it's a very small window and is also a bit suspicious. And you should perhaps know, or maybe, well, you probably don't know, but this happens to be the time, but there was some very interesting what safe, theological debates with political consequences in which the question of the use, the proper use of dielectric was also raised. And the use of dialectic was contested.

Of course, there is no strict connection between my manuscripts and the subbies theological debate, but it's extremely sort of the correlation. The chronological correlation is at least suspicious. It's quite, I suggestive, I would say now the interesting thing is that after around eight, six stories, the third quarter of the ninth century, these interpolation, I don't, didn't find it in any of the manuscript, my early medieval copies up to sweats, they meet 11th century, so it's gone and then it makes a comeback with a small mutation. So it mutates a bit, it gets an addition. The addition is nice because it makes it more plausible. Grammar suddenly fits better. Uh, any of the peers in the, from the 11th century onwards, it lasts until the 15th century. And these are the manuscripts. I have found eight more manuscripts, and I'm pretty sure that's not the complete population of minus the testes interpolation.

So there must be more, uh, they're quite widespread. The Italian manuscripts, uh, Eastern European manuscript, French manuscript, English manuscripts, uh, uh, some German manuscripts too. So, uh, so th it seems it's already very widespread it's, so something must have happened. So that to revive this intro, this, this specific car innovation, I'm pretty sure it has nothing to do with the curling original Corrlinks and context of production. And we don't know where it comes back, where there's a specific place in time and getting specific contexts, maybe also political. Uh, this is something I don't know yet. And I was planning to research a bit further. How are we with time now? Do we still have a bit of time or not? Because I can stop here. I will even stop here if in, if you have a few minutes, because you, you still have five minutes or five minutes.

Oh, I, okay. Well, I don't know. I have repaired more studies. Uh, this one is interesting. I will, I have to switch to it a bit, uh, what happened as well? This is another example of innovation, which is not textual. Uh, encyclopedias are nice, but they're quite heavy, a big, and they are very diverse. But what happens sometimes is that a specific section is taken out and repurpose as a technical handbook, or in this case, it's a school book. And this happened indeed also to the Malo gave one of its parts, the parts dealing with grammar, which is a school subject was appropriated in the received the new name as easy Dory as Dramatica easy Dory, and began to be used in schools in the context that we are pretty sure in Curlin and schools in the context of the curl engine, really Renaissance or courage and reform movement.

Uh, this is what I've found so far. These are the manuscript. I just want to point out. Most of them are concentrated here. So Northern France think about that. So appropriation of this text is ethical. A PDF for school use a specific section is used in schools. Okay. Um, but different thing is that also what happens to the encyclopedia sometimes is that scholars come and say, Oh, this is a good version with this. All this new innovations are really like, maybe we add a few of new and let's create a new reduction. So to have a new authorized version, that mortgage 2.0, let's put it into circulation. This happened in the early middle ages, at least five times five different centers decided we are going to put

a, create a new reduction. Uh, very shortly one. I just want to show you grow geographically. Notice the geographic where they are.

This one comes from San Golan. This is the star here and was spread in Germany and actually became quite influential in German area at different one, also in Sango. And they were very specific. They wanted to have two reduction, not just one, a different one happened in Spain. Here started here in 10th century. It was widespread, mostly in Spain in the 13th century, reached Italy. And there's one 14th century, French poppy, but only one. And then there is another Northern Italian reduction to ninth century copies. I haven't found more. I wanted to show you this because they wanted to put them together. And I hope you notice something. And if you know anything about Carolinians, you wonder about where they are. This is where the core is, right? And this is an empty space here. And this is where the school books are. And they actually, they do overlap. That's true a bit in Germany, but only in Germany. And it's very interesting to notice that these reductions, these scholarly projects all happen outside of the core of the Carolingian empire while the interest, the school books happen inside. And there is a very limited overlap it's either. Or, and I really stop here. That's about it. Thank you very much for your attention.

Thank you.