

FOUNDATION OF DIGITAL BUSINESS

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Lecture 30

Lecture 30 : Scaling Gen AI in Governments

Now in this session I will discuss about scaling of JINI government organizations. I will take some examples from US government, state governments using JINI in various public utility services. And of course, the similar things can be used in any other country like India if you are talking about India, these also can be experimented because these are being used in some place and they are being used successfully. Governments can scale GEN-AI by enhancing this technological infrastructure engaging the workforce and building an effective governance structure.

It is transforming industries, Gen AI is definitely transforming industries, economies and societies in a ways we could only imagine a few years ago and it is also making inroads in government. All of these factors discussed in chapter can be applicable for commercial organizations as well. So, I have given typical picked up some examples from the government organization, but you can think of very similar things. and use it in your regular commercial organizations. And once it is successful in government applications and people accept, you can always you can then safely assume that your customers are also people I mean they are also citizens.

If they are accepting government tools applications of JINI applications using it, so why not accept your the ones which you are developing for them as a commercial venture. In light of a potentially constrained budget environment, US state and local governments may be looking at tools that can help them deliver their mission more efficiently. So, one of first major advantage or you can say a disadvantage of AI is this high productivity because they can do larger amount of work with the same people or maybe do the same work with lesser people. So, it has got again the other side which will not probably discuss here much.

So, an example was internal back office operations. So, you leverage NAI to streamline access to state archives. The archives government if you go to office you see huge especially in India you see lot of files, the stacks all mirrors and completely lost if you have to find out any information they are completely lost. But thankfully things are getting digitalized all our legal court orders etcetera old cases everything is has got digitalized.

So, all of these things are already available now on. beginning to be available on digital platforms. So, one of the area is law legal effort and similarly many most covered land details land thing etcetera data things are getting more and more digitalized. So, once they are digitalized, you have a digital archive that staff can quickly search millions of documents scanning a century from historic business records to recent financial filings. So, the AI understands the advantage plain language queries making searches fast and intuitive.

So, your input is just a plain language query, simple language you say and it could be in any language English, Bengali, Hindi whatever. You give a query and then it searches through it goes through all that entire database and then comes up with whatever you want. It helps improve transparency and efficiency turning vast historical data into accessible useful information. Coming to internal service operations, the ability for GNI to analyze the text and generate natural easy to understand phrasing in different languages. It is helping governments communicate more effectively.

So, you can get it in multiple you get it in English and then you can get it translated all by the being done by the tool the GenAI tool. So, you have the same whatever communication you want to send in say multiple languages. So, government departments are leveraging GenAI to rewrite email sent to customers in plain language. As a result of this change the office has observed a 35 percent faster response from customers. So, even the email is getting drafted.

triggered sent by the tool by the AI tool. Public facing uses, state and local governments are implementing chatbots that answer constituent questions. So, that is one of the most immediate quick low hanging fruit quick benefit tool which most organizations are also using is to create a chatbot which behind the scene is working with the gen AI tool. So, in both individual departments and across multiple government services you can use this chatbot, government has already started using this chatbot interface. So, citizens can ask

straightforward questions such as how can I apply for a driver's license or what services do I qualify for.

Still evolving such chatbots could help citizens better navigate the complexity of the government services. While generic pilots and experimentations continue. A survey done by Deloitte suggests that a large majority of the organizations both public and private sector have deployed less than one-third of these experimental pilots into production and even fewer have reached the scale necessary to meet mission objectives. So, I was talking about this also in my previous session that the fear factor, the hallucination factor and these things are still preventing you from getting the confidence of deploying these

in a large scale, because now you are dealing with public when you are talking about this government use cases, you are dealing with public and public means it is a huge number your local community or the district you need have district or state, you are a big country a lot of population. So, there are chances that the output will not be understood in the way it was supposed So, there could be misunderstandings and that could cause certain unpleasant situations. So, all of these things are preventing the government or even commercial organizations to go full fledged with such tools.

State and local governments are caught between the desire to harness value from this powerful new tool and the rightful concern about unleashing an untested technology within critical public services. The big challenge is how state and local governments can move forward to capture the value of Gen AI at scale while controlling risks. So, this is a question that will take some time to answer. A very similar situation exists with autonomous cars.

We have many unanswered questions, like if an autonomous car hits and injures or kills someone, Who is really responsible for that? Whom do we hold accountable? Whom do we penalize? So, these are pretty open-ended questions, and it is very difficult because who owns the car?

Nobody was driving in the first place, or it was some software that was driving the car. Then who wrote the software? Who set the rules? What sort of sensors were used? What about the network speed?

Because it sensed a human being, but the network was slow. So, it took a longer time to respond or push the brake, and by that time, it hit the person. So, who do you blame—the network speed, the software, the sensor, the software programmer, or the person who

employed and installed all these into the car in the first place? So, these are things you can think about. The same applies here regarding public use, and the public can interpret it in various ways.

So, it can create certain unpleasant situations, as I was telling you about. So, who will take that responsibility? So, these are the things which are actually preventing the scaling up of these applications, but their benefits are, of course, very well known and understood. How are organizations worldwide harnessing GenAI to revolutionize IT operations and communications? For example, in the IT-related area, there is another example from the Utah state government in the US, which has adopted GenAI to enhance cybersecurity.

So, handling 2 terabytes of data daily, the tool has improved alert quality and actionability, enabling proactive risk mitigation. So, this is one area where you can very easily deploy GenAI tools IT because this is one thing the output is this is completely or internal affair the security part and, fails, it could mean losing a lot of customer data or having public data stolen and misused. So, it's not that you are free from trouble, but still, it has much less exposure because initially, there is no exposure to the general public in this case. So, it is completely an internal operation.

So, your data security. Over the past year, the US Department of State has integrated various GenAI tools to enhance efficiency and productivity. These tools assist with drafting email. Translating documents and brainstorming policies. So, they have collectively saved employees tens of thousands of hours, but this is again one of the area which

is relatively safe because after all you are drafting some mails and once it is drafted then you can go through and see if there is something which should not have been there or whatever you can correct that you can edit. So, you do not start writing the mail because that takes so that is what is a productive enhancing application. So, you are basically saving your time. Translating documents.

and brainstorming policy or creating some summarizing etcetera of large collection of volumes and the legal in the legal industry they have to go through several cases and then write a summary report of 2 pages or 3 pages. Maybe you have to scan thousands of pages and then summarize that into 2 or 3 or 4 or manageable say maybe 10 pages. So, that itself is a very big application and very useful application customer service Another use case from Colorado Department of Local Affairs, they are using GENERI to

significantly reduce the time required to identify process improvements in its housing voucher program.

This advancement allowed the team to spend less time on discovery and more time implementing solutions. Any process improvement exercise required detailed information gathering from individuals involved in process and lengthy discussions to build the process maps. What they used instead a computer consultant named Kokor. conducted one on one interviews with dozens of stakeholders asked questions in natural language and synthesized all the information to create process maps. So, you have a computer to which the customers can interact in the natural language and they it collects the information and then processes that to develop those maps.

So, staff members are now utilizing these process maps to redesign the process effectively. So, instead of a human being collecting the data from going house to house, people to people, you give access to a computer to the public and the public records their whatever they have to say, their statements, questions on Q&A session, respond to all the questions and the answers get recorded, analyzed and processed by the tool by the AI tool. Potential benefits of GenAI at scale. It needs to be adopted at scale to realize its transformative benefits.

A scaling entrance more than just engaging a large number of users, it also means embedding JINI into an organization's core process. Like I was talking about in the previous session that many enterprise applications like CRM, customer relationship management, the softwares which are commonly used in Enterprises since last several years, last several decades for the matter, they are now embedding gen AI tools within that software. So, that it can do more work, you can use identification with these tools. So, it can do some take some action also and things like that.

So, AI at scale can be very powerful tool for the government. In 2024 the US Department of Treasury started using AI tools to detect fraud in government payments preventing recovering 4 billion dollar in improper payments and improvement of over 3.3 billion dollar from the previous year. So, this government for frauds are very well known everywhere. In India also we know a lot of stories where people have died, but the pension is still being paid because it has not been deaths have not been reported.

So, the department does not know not aware that if you similarly frauds are happening with all other governments payments incentive payments on the benefit payment etcetera which government scheme are there for various people and they are being misused in the

sense the right status of the person is not reported if the person dies that is not reported. So, it keeps on family or whatever keeps on getting the benefits or the payment etcetera. So, US Department of Treasury has applied a tool to detect such fraud.

The very high impact applications the treasuries do not pay a service they call it do not pay service crosses organizational boundaries connecting state unemployment agencies with the social security administration death master file database that holds information of deceased individuals to reduce improper payments. Like unemployment agencies also pay out certain doles, but now if the person has got an employment but does not report that. So, it keeps continue getting that benefit as well.

So, this sort of use cases we will find in every country and quite a lot so in India. So, there is tremendous application potential for such tools in the government department. Potential benefits of AIH scale. are accelerating the emergence of agentic AI that is more autonomous goal directed AI based tools that can coordinate other automatic tool is opening up new areas of advanced automation. AI agents are like conductors of orchestra being able to coordinate the action of other automation tools like gen AI, robotic process automation

and even human workers to create more efficient workflow. An example can be like we commonly search suppose you want to go for a vacation say Bali. Now, we can send out a query for to the JINI tool is make a 7 day plan for a family trip to Bali and our interests are temples and sea beaches and etcetera. So, the tool will make you an itinerary for one and it will recommend that you visit such and such place and such place and such place etcetera. Then you can ask the tool also that this is my budget, can you recommend the good places to stay and where should I stay,

which are the towns and cities which I stay and recommend some resorts or hotels. Even recommend the flights because flights also ticket prices can vary. So, it will come up with suggestions tell you these are the resorts this is your budget. So, these resorts etcetera and these are the preferred flight timings or the flight company carrier. Then you can instruct the tool generate tool the agent to do the bookings for you.

So, it plans, it suggests the best options and then it books for you. So, within few minutes you get all the airline tickets booked and sent to you. Obviously, you have to give your name, passport details etcetera, date of birth, things like that. The tool will book the ticket for you, will book the resorts for you and if required also book some local transporters like taxis etcetera for you. So, you enter holiday packaging.

And the execution has been done by this tool in a time of maybe 15 minutes, 10 or 15 minutes or something like that. And you do not have to go anywhere, do not have to go to any travel agent. So, you have to go outside, you sit at home on your computer or your laptop and you do the entire thing in maybe 10 to 15 minutes of time. So, this is a very simple example of the use of agentic AI. The other common one is these personal assistants like Alexa or Siri.

So, you are telling Alexa play me this particular song and that particular song is searched out from the internet and played for you. So, whatever you want you just ask Alexa or Siri and that is delivered, sing a song, poetry, weather forecast, news or whatever. Another example of an AI agent could be streamlining vehicle registration renewals, for example, by orchestrating the actions of several tools. using machine vision to extract the information from forms and supporting documents, employing the rules engine to determine eligibility for renewal, cases to human workers if issues arise or if the application is not immediately eligible, and finally, using GNI to issue renewal notices.

So, this is again another example—say, a motor vehicles department or similar type of government organization—that can use an AI agent to streamline vehicle registration. So, vehicle registrations have to be renewed every 5 years, 10 years, or 15 years, depending on the country, as the rules vary. So, the tool can go through all the forms. and find out which car needs to be renewed and then do all this stuff, what are the rules applicable for that and whether they are eligible for renewal or not eligible for renewal, whether these are cases, accidents,

decision. If needed, it can escalate some cases to a human. who is there the clerk or the officer who is sitting there if there is some major issue for that for a human intervention and otherwise if everything is fine the concerned individual via email. So, this is augmenting human intelligence—augmenting intelligence. So, the tool helps by doing all the background work for you.

And if it is straightforward it will also finish the job that send the mail to the for the renewal notice, a problem, it can escalate it to a human and say, 'Now you decide what needs to be done.' The government's path to scaling Gen AI can be challenging because it cannot simply imitate the commercial sector, which is often more advanced in technology adoption. Now, the difference between the government sector and commercial organizations. In the commercial world, clear metrics such as sales and revenue provide

straightforward ways to measure the return on investment from any technology, including GNI.

So, whenever we deploy a technology or spend money or invest on any technology for modernization or whatever in any industrial or commercial organization the first thing the finance department the CFO will think about is what is my ROI. What is the return on investment? Why should I go for this investment? What is the benefit it is going to give me in business terms, in revenue terms, in money terms?

When will I recover? How soon will I recover this investment? So, they have this clear cut matrix and incentive also. So, if I get an AI project which I see is very potential and a quick return on investment, the returns are guaranteed kind of thing and the time frame etcetera, then I can push it through my organization, through my management and get it accepted as a project.

So, I can convince my CFO and then in turn convince my CEO and that things get accepted. So, business executives driven by financial incentives typically pursue a top down centralized approach to technology adoption. So, I as a manager business manager I think if I can do this my company will benefit etcetera, the company benefits that I will get a promotion or something I will get a reward or my team will get a reward. So, that is how the whole mechanism works in the commercial organization.

But in contrast in the government department sometimes struggle to measure the impact of JNI on mission effectiveness, because your things are not necessarily on a sales on a revenue or a money term. So, you are doing it for some public service, how do you measure the return? So, that it is very difficult to justify the return on investment. You can think about the benefits that public are getting, the public satisfaction which is also some most of the time is not measured really like a customer satisfaction thing which is measured by most organizations.

The government does not really measure have tools to measure a public satisfaction index or something like that, but the other side the negative side is that it can create issues and challenge and problem with the public. So, that is always one fear factor which plays as a break for government to implement such projects. The path to scaling JNI in government likely lies in providing wider access to JNI tools to tools across the workforce. Like I had said before if you can allow your employees to play or use JNI in their day to day life which makes their work life easier.

and better or they can do better stuff better quality mail like the writing an email it needs skill, this is language skill, knowledge skill, but if the tool does it for you then that is taken care irrespective of the employees education level or proficiency in their English language or whatever writing skills if you can do it through the tool it becomes a skill agnostic kind of thing the tool is doing the writing the letter for you. So, they start getting the advantage once it the advantage is accepted by in general the employee level then you can step by step think of going public.

One strategy for enabling wide access to generic program is to creation of an AI market place. is a controlled technology environment that allows users to create and deploy solutions to their problems. So, you have something like a platform which you call a marketplace. If I develop something, I can deploy it in the marketplace, I can host it there for people to review and see and then evaluate the tool also. So, then you democratizing your innovation.

And the marketplace is a controlled technology environment which allows users to create and deploy, but the use will be under a particular governance control. See the solutions is really found to work, the marketplace will have their own governance mechanism in place to scale them across the organization. So, first you pilot do a small pilot put it in the marketplace get evaluated tested the results are fine, then the marketplace governance team will think whether we can expand that to the overall organization and then even may be if required to go public with it. It provides a platform with multiple building blocks enabling users to quickly build their own JINI use cases.

You are encouraging through this tool this is platform with multiple building blocks whatever is needed the API's and other software products which you can use as a user to build your own use case a AI solution to a use case. So, encouraging employees to be AI innovative and that is since it is a completely new field people will be very excited to learn a new technology that is a very you know motivating factor for employees to learn new things Depending on the sensitivity of the data it can then offer options to choose between multiple open source large language models or on-premise LLMs.

On-premise LLMs also known as small language models SLMs are hosted on the organization's own cloud infrastructure that protect the data from being sent to open source LLMs. So, they are much safer because you are hosting it in your data center, cloud center and also it is using your organization's data. So, chances of bias etcetera gets minimized or eliminated. The platform enables users to connect their data and workflow

to AI tools through a user friendly interface allowing employees to utilize gen AI capabilities without needing to understand complex coding.

So, this is what is important you are coming up with almost a no code environment. For instance, a case worker could easily upload relevant policies and create a gen-AI powered chatbot making the technology accessible to non-technical staff. They enable necessary guardrails to reduce risks when the solutions are scaled across the organization. So, the guardrails are very important. because of all these things which I have been talking about.

So, in the governance the responsible AI concept always comes in, but you are basically encouraging fundamentally for your employees to create GenAI powered chatbots and other tools and make the technology accessible to anybody. Usage data can also be monitored to support compliance and security providing a safe and effective environment for government employees to harness the potential of GenAI. So, to assure your employees that no harm will come to them. So, the fear factor has to be eliminated through the use of all these guardrails, proper governance policies, and, of course, education and communication.

So, you can encourage them to innovate. So, what will AI at scale look like, and where is the north star? Where are we really heading? So, there are four dimensions to AI readiness: strategy, governance, people, and technology. The challenge is that there is a significant gap between pilot and AI-at-scale capabilities. And organizations accustomed to AI only in pilot form may find it difficult to gain the capabilities needed to scale.

Well pilot level capabilities might suffice for initial experimentation, scaling AI solution requires a more comprehensive and integrated approach across all dimensions and these dimensions are strategy, governance, people and technology. So, what are the barriers? Risk wariness: with sensitive data and public trust at stake, some government leaders are wary of the risks associated with Gen AI. However, failure to adopt poses risks as well.

So, if you do not adopt the technology, it can also be a risk in today's world. The challenge lies in finding ways to reap the benefits of Gen AI while minimizing undue risks. So, that is the big challenge for any manager or government officer. Actions that can help: gain executive support and adopt tailored or tiered governance. So, you can classify these products as low risk, moderate risk and high risk systems and then have adequate governance for these different type of risk levels.

So, I have projects can have projects which are low risk project, medium risk classify them and then have sufficient governance identified for each of these cases. before you start using them. Build true governance by integrating risk controls directly into the platforms and tools where AI solutions are developed. Having control over features such as role based access to data that so that everybody does not access all data. So, it is role based depending on where which positions you are or which job you are doing.

Automated detection of security vulnerabilities and configurations. visibility and control over the type of LLM being used for various solutions and the ability to monitor red flags such as toxicity, bias and inappropriate responses provides actionable governance that can be both understood and tracked. Improved data availability for generative AI to deliver accurate and tailored information it must have access to comprehensive data from multiple agencies. However, you have to keep this in mind that role based access to data and then automated detection of any vulnerabilities and any toxicity bias and inappropriate responses.

So, these also needs to be monitored closely. along with the improved data availability. The richer the data drawn from the sources, the clearer the view of an individual's unique circumstances which in turn enables more complete responses that is understandable. And confirming that JINI can access data drawn from across organizational boundaries is key. So, once you start using such tool.

people will understand that I can access data from across the organization available to me because the entire company's data has been put into that small language model. So, the model is now trained on the entire company's entire transaction data, master data etcetera. So, all of that data is available to me. However, there will be some checkpoints. So, that again as I have said earlier about roles etcetera that people need to use the data with such and certain controls and constraints.

The other barriers are budget of course, and the action can be how to measure the success. The question of return on investment thing with commercial organization, but in government how do you do find out return on investment. So, that is one thing you have to find out how do I measure that. Limited technical expertise that is always there a big challenge there is a shortage of talent all over the place. So, even in government commercial organization everywhere.

So, what governments are doing one of the solution to for this talent situation is again this is from that same Deloitte report study. So, the partnering with various variety of players

depending on their unique needs IT analyst. So, you can hire external agencies not that you have to have your employees trained in everything, professional services consulting, cloud vendors, traditional IT firms and startups or boutique software providers. So, the government is partnering with all these type of organizations to develop their IT products.

And GNI has a potential to be a key tool throughout the public sector. By prioritizing robust infrastructure, workforce engagement and building strong governance, state and local governments can effectively pave the way to implement GNI at scale to better drive effective mission results. So, with that, I will conclude this session. Thank you very much.