Heart-a-Tech Podcast by MaibornWolff
Episode 05:

GPT: How do I convince my company to use new technologies?

With expert Marco Pötke

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Intro Marco Pötke: The first thing you need is a bit of an experimental culture, in other words a willingness to try something out. We don't just have to talk up success, but also accept failure. That's part of it. This is a completely new technology with a lot of strengths, but also a lot of weaknesses.

Brigitte Streibich: Hello and welcome to a new episode of Heart-a-Tech, the podcast all about everything you need to know to successfully implement new AI trends and technologies in your business. This podcast is happily hosted by MaibornWolff. My name is Brigitte Streibich and my guest today is Dr. Marco Papke. Hello Marco, welcome to the podcast.

Marco Pötke: Hello Brigitte, very happy to be here.

Brigitte Streibich: Marco, you've been the Division Manager for "Data & AI" at MaibornWolff for three years, as Head of Innovation you also drive the internal transformation projects in the division and you told me that you implemented your first industrial AI project in 2004. 2004: That sounds like it was yesterday, but it was 19 years ago. When you've been dealing with the topic of AI for so long, what can still surprise you?

Marco Pötke: Well, the first thing that surprised me was that you can now say AI out loud again. In 2004, you were only allowed to say that you were doing a project with artificial intelligence behind closed doors, because the term wasn't so en vogue back then. Back then, people talked about unsupervised learning, cluster technologies or data mining. But in the meantime, the term has definitely become mainstream again and a lot has happened in the area of acceptance, computing power, and data availability, so that we can now talk about valid mass phenomena and application scenarios. Back then, it was definitely still a niche technology.

Brigitte Streibich: Apropop's acceptance: In companies, it's often the case. Often, there is one person who thinks AI is great, who is pushing it forward, who is on fire and wants to use it everywhere right away. And then there's often the faction that doesn't go along with it so much yet. They may not yet have much idea of LLM or GPT and are rather skeptical when it comes to data security. What do you do in such cases if you are the driving force and if you want to bring the others along with you?

Marco Pötke: The abbreviation LLMs stands for "Large Language Models". And of course, this primarily means natural language. And natural language is never 100 percent precise. And if you are now leading an AI project in the LLM environment, then the first question is: How precisely do facts and contexts have to be represented in this technical context? Is a minimum or perhaps a little more vagueness allowed? As soon as I move from a formal world, for example mechanical engineering or engineering, into the linguistic world, I also have to accept this step to a certain extent. In other words, language models do not always return 100 percent accurate results. And controlling this precisely and - let's say - hitting the right level and fulfilling user expectations has a lot to do with communication, with exchange, with leveling requirements.

Brigitte Streibich: How can I initiate such a communication process and exchange in my organization in concrete terms?

Marco Pötke: We work with a lot of companies that are currently riding the wave of LMS and are realizing: "Oops, maybe we should do something now. And for that, the first thing you need is a culture of experimentation, a willingness to try something out. Not just to talk up success, but also to accept failure. That's part of it. This is a completely new technology with many strengths, but also many weaknesses. It must be possible to set a budget and a procedure with piloting. But a falsification is also a result for such a technology. I think you have to have this mindset.

Let's take the following example: A large tourism company installs a co-pilot on its homepage to help users or customers find the right trip. When this pilot comes to the conclusion with initial user test groups: "Yes, this fits! The results are helpful," then comes the second big milestone to reach. Overnight, this project then becomes a software engineering project, and it must then be possible very quickly to bring together the relevant departments and experts in the company, but also on the service provider front. They have to be able to correctly implement and put into operation what has been prepared with language models, data science and data products in a corporate context.

Brigitte Streibich: You said that the results - whether positive or negative in the end - have to be measurable. How do you make something like that measurable? How do you set the right goals and how do you check whether you have achieved them?

Marco Pötke: The good news is that this is not the first time we have had to answer such questions. So we have learned quite well in recent years that a process-based integration of an IT solution is ultimately the measure of all things. I'll come back to the example of the tourism company. Then I have to use methods such as design thinking to gather a contact group of representative users and personas at a very early stage and then simply test them and see whether they produce results that are also helpful from the user's point of view. You can measure that, and it's nothing new.

Brigitte Streibich: How long does an integration or a process like that take, from the beginning of brainstorming to implementation?

Marco Pötke: Yes, that is a very interesting question, because it depends very much on the prerequisites that the company already has in place. The first question is first of all: "Is the corresponding data that I need in the company structured and available in such a way that I can link a language model with this data?" That's where the first big misunderstanding starts. Many people think of language models as knowledge carriers or knowledge databases. But that is not really correct. If you think of GPT 3 or GPT 4, for example, these models know a great deal about the world, they have a certain general knowledge built in. This also leads to our children using GPT for their schoolwork. But that's really just a by-product of training a language about texts and data. Actually, as a service provider for large enterprise customers, we're not interested in this built-in knowledge in these language models. What my daughter finds exciting for her next essay is more of a hindrance for an enterprise customer, because it also leads to these models starting to fantasize and telling things that are simply not correct. I can't offer a customer a honeymoon on the portal that doesn't even exist. Hallucinations is the key word. This means that the first thing to do is to take appropriate measures - prompting, meta-prompts - to get these language models out of the habit of hallucinating. That works. You can do that if you know how to do it. And then, however, I have to provide other useful data about which the language model can then reason accordingly. And this data has to be pulled out of the domain of the corresponding applying company. So, for example, do I have all the data about my offered trips, about the flights, about the transportation options, about the hotels, and the metadata about that? Do I have it consolidated in such a way that I can present it to this language model in the context of a customer inquiry, so that the language model then generates a natural language answer from this data, from a natural language question. And

that is the main point where the groundwork has to be done first. That's what we always tell our customers. We first have to get your database, your knowledge base in order, so that we can create a valid domain model of your knowledge. And only then can we go in the second step and connect an AI. So first the data management and then the AI.

Brigitte Streibich: So you from MaibornWolff go to a company and, together with the customer, look at the data from the various systems - ERP, CRM, BI tools - and make sure that the database is correct and tidy it up before you can even start the AI project?

Marco Pötke: Exactly. If you urgently want to find out whether a certain AI technology basically works, then you can do that for a pilot, I'll say with "sneakers" and once by hand. But if it works and I now go down the path to a productive system, then I have to provide this data - of course in the processes and technology that are automated in such a way that everything is up to date and of the appropriate quality. This is often a transformation process that also affects the organization of the company. Then we get into areas like data mesh, data fabric, data lakehouse. We are all familiar with these terms, which are hidden behind them. And then I am very quickly in the process of really introducing such concepts before I can then go into productive AI integration. And when I have this for a specific domain - which can also be a project with a duration of half a year - then I have the basis and then, fortunately, I can offer the first language-based services on this data very, very quickly. This is now happening so quickly because various hyperscalers out there in the area of cognitive services have now understood very well how to package language models in corresponding SaaS services, and then I can approach my users relatively quickly with a language interface.

Brigitte Streibich: What challenges or dangers do you have to be prepared for in such a process?

Marco Pötke: Here, too, there is of course a whole range of insights that we have gained from working with our customers so far. First of all, one important question is the form of organization. It doesn't matter whether it's a large or a small company: There is never the situation that no one is employed there who has no knowledge of AI - or generative AI in general. If you are now faced with the challenge of introducing AI in the company, a major challenge is first of all to use this knowledge and not to explain to people via a centrally established department what they already know - in other words, to carry owls to Athens. In many cases, a decentralized organization in the form of a network is recommended, in which I connect the various knowledge carriers in the company with each other, give them a platform for exchange and then ensure that the

wheels are not reinvented three times over, but that the knowledge from department A is transferred to department B as well. You mentioned earlier that I am currently helping to manage the whole thing internally for MaibornWolff. Creating such a platform is a demanding process. You also have to create a bit of openness and motivate all colleagues to see that it makes sense to enter into this mutual exchange. This can be supported very well, for example with shared repositories or an inner-sourcing approach, by jointly developing templates for such a language model integration and then sharing them among each other. We have rolled this out very successfully in a very large company over the last two years and ensured that, for example, the finance department, the HR department, and also the production department of this international company have used similar or even identical AI templates to solve their individual problems. That, I would say, is one of the biggest challenges, that I use economies of scale without now pumping it into the company centrally with an attitude of "I know where it's going", but rather to get it from the corresponding areas and to network it.

Brigitte Streibich: Someone with whom you then work would typically be a head of innovation and his project team, who come from different departments. And when that has been developed there, they carry that back into their departments, that's the idea.

Marco Pötke: Yes, exactly.

Brigitte Streibich: I see. Now I have heard that you offer different workshops in this process or that you can support along the process route. Can you perhaps give us an example of one that can be used to achieve initial successes?

Marco Pötke: I'll just start with the smallest one. Because that's quite amazing. It's enough if we can get a group of employees from a company together in a four-hour format. That can be the initial spark for setting up such a network. And we offer to design the content of such a four-hour workshop, for example by starting to dispel the first major myths surrounding GPT. Is GPT really unreliable? No, can be adjusted accordingly. Is GPT really insecure? No, it can be hosted in protected environments in virtual private clouds, just like any other technology. At the end of the day, this is nothing more than a stateless server. We know in cloud technologies how to deal with that kind of thing. Or thirdly, how sustainable is GPT actually - there may be reservations in the company about that, too. For God's sake, is this the new Bitcoin? Are we now training neural networks on a grand scale? Again, that's generally not right when you're applying models. That would be such an entry point. And then, equipped with this basic knowledge, we approach a large language model in a very concrete way in our own, protected environment, in which we don't have to be afraid of promoting company secrets, because they will then be recorded in the USA. So we make sure that we bring

along a protected environment here in which you can also experiment. As I said, experiments are very, very important in this context right from the start, and then we deepen the theory behind them on the basis of these initial findings. That is also important, that you develop a knowledge of how such a model actually works. What is a Foundation Model? How can I touch it? What interfaces does it offer me? Where can I customize what? And then four hours are over quickly, but we get very, very good feedback from the customers, who say "Hey, great, that was just as much of an initial spark that we needed, and now all of a sudden lots of ideas are coming up about what you can do with these insights." And that's a lot of fun to experience as well.

Brigitte Streibich: At this point, I'd like to point out to our listeners: If we've piqued your interest and you'd like to take a look at how you can integrate AI into your company or drive it forward, you'll find the corresponding workshop offers in the show notes. You can also get in touch with us for a non-binding half-hour initial meeting. Marco, you just mentioned fun, which is a very, very good keyword. AI should not only be technological and economic or drive companies forward, but should also be fun. Our podcast is called "Heart-a-Tech". What makes your heart race? What do you enjoy most when you think about GPT, LLM or artificial intelligence?

Marco Pötke: Well, I get an incredible amount of fun when I get to see how this technology performs in practice on an almost daily basis. For a long time - and I'm not the only one here - I hesitated a bit. Is it really just hype now? It started about three quarters of a year ago. Of course, we quickly got to grips with this new ChatGPT 3.5 model and then realized: "This is really something relevant. This is a real breakthrough." And to be able to experience that now and to help shape it, that's already a privilege. I've been in the business for a few years now, and in the 1980s I experienced how high-level languages, programming languages, and object orientation took hold, and I sat right there in the front row, so to speak, and witnessed how a gigantic productivity boost could be achieved. And I have the feeling that at least such a big push awaits us again now. We will ultimately completely revolutionize the way we create software, the way we build complex systems, once again, and also democratize it to a certain extent. In the foreseeable future, it will no longer be necessary to have ten graduate or master computer scientists for every application, but rather specialist departments that have their requirements under control and know what they want and are then able to generate an initial system relatively quickly and easily. And it's a lot of fun to experience that and to accompany people through the process.

Brigitte Streibich: Well, that's a perfect conclusion, I would say. I am very, very glad that you were with me, Marco. I wish you continued fun with what you're pushing.

Marco Pötke: Thank you very much.

Brigitte Streibich: All the best!

Marco Pötke: See you, Brigitte!