Q&A Coffee Sessions

with EDGE super users

EDGE?

edge edge

Super User!

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Job title: Head of Development

How and why did you move into software development within clinical research?

Honestly, because I wasn't particularly happy in my previous job, and my wife, who worked at the University at the time, saw the position advertised! That aside, the chance to start in a newly formed department that, from my point of view, had a goal to improve clinical research using software was impossible to turn down. I think that most developers would agree that working on a new project is one of the most exciting aspects of the job.

What does your role as Head of Development at the Clinical Informatics Research Unit, UoS, entail on a daily basis?

As Head of Development, I am responsible for overseeing not only the development of EDGE, but also a variety of other projects and products that CIRU work on. 'Overseeing' can be a slightly misleading term, so what I actually mean is that I'm there in a strategic role, to help shape or guide some of the work we do to ensure it all fits together effectively, with a definite focus on EDGE 3. We have such an excellent team across the board at CIRU, working in so many different disciplines, that it's impossible to do them justice in words, really. Everyone is truly treated as an equal which has created a cohesive, capable group that it is great to be part of. An example of this is how everybody has pulled together during this difficult year in a supportive, caring way as each of us dealt with different circumstances working away from the office. I can honestly say that I have found myself citing the whole unit as an example of how teams can really work, and what they can achieve if they trust and respect each other.

Please provide us with a brief history of the journey of EDGE from the moment it formed as an idea scribbled on the back of a beer mat – to now, over 20 years (!) later.

Twenty, long dark years ago? Pre-wife and kids? Ah… the golden years. A brief history would begin with a fresh-faced James Batchelor (now Professor, so clearly achieving more than me) interviewing me to work with him as IT support for the Central South Coast Cancer Research Network. EDGE evolved from NOTIS, to ETIS, to EDGE over that time, and the team has expanded from two to a department of over thirty. Essentially, the same principle has guided its growth over the years, and that's one of collaboration. We're involved in a field that benefits so much from sharing not

just common documentation and best practice, but those day-to-day problems and difficulties that can have a measured effect on performance and workload. The EDGE conferences we've had, which were inconceivable ten years ago, let alone twenty, show how much of a community spirit there is out there. I don't think I'll ever get used to seeing hundreds of people getting together to share experiences and talk about the software that we create.

EDGE 2 turned 10 years old in 2020. As a software developer, what is your rationale for creating a brand new version?

For me, software always has a natural lifespan before it needs reworking. That lifespan is much reduced from what it was, say twenty-five to thirty years ago. The technology we used ten years ago has moved on considerably, and there is only so much patching and updating you can do before taking on a full rewrite. Back then, most systems were created as large, monolithic beasts and were scaled vertically by shovelling faster processors and more memory at them. Now, it's more about micro services and horizontal scaling. Add in to that the expectation of API's and integrations that have become commonplace, and we couldn't really justify retrofitting anything of that scale into the existing infrastructure.

What does a version change for EDGE mean for users? That is, what will be the primary differences between EDGE 2 and 3 that users can expect?

Hopefully it will mean a faster, simpler, more powerful version of what they use today. We've worked hard to keep a familiar interface but at the same time produced something more to the level that is expected of modern web applications. We have been working with our Knowledge team to introduce new features over a lot of the application, which will be available from launch and then in

subsequent updates. I suppose the primary difference is that we've split a lot of our services up – not in an over-the-top way that the current micro service trend would suggest, but where it makes sense, we've extracted functionality that can be scaled, maintained and developed separately to give us more control in terms of performance and support. Rewriting the frontend has allowed us to make a much more modern, fast and accessible application. We've tried to keep the important aspects in much the same place as in EDGE 2 to make the transition simple. We've also developed some dashboard-like views so users can customise pages to show what's important to them. We will be making a public API available so those who have development capacity will be able to automate and integrate EDGE to a better degree in their own environment. Good examples of this would be automatically adding users to EDGE when they're added to your HR system, pulling aggregated report data out automatically to populate a weekly report. Those are just simple scenarios – I think we're all looking forward to what users of the system dream up!

Most importantly, will EDGE 2 data also work in EDGE 3?

Yes, of course! Fundamentally, the data model is identical. We've applied various migrations to support new functionality, but a lot of this we've engineered to be 'additional' schemas rather than touch what was already there. We're more than aware of major sticking points with the existing reports and audit which, whilst functional, fall far from what we'd like them to be in terms of accessibility and performance. These are just two of the many areas we're hoping you'll see a marked improvement in.

Which new technologies and software are you using to develop EDGE 3? And why have you chosen to update this?

We're still primarily a Microsoft-based unit, so we're using the latest version of .NET Core for our backend, and a framework called Aurelia for our frontend. Frontend frameworks exploded in popularity in the last few years, mainly starting with Angular and subsequently React, and the rate of new ones, updated ones and abandoned ones is somewhat astonishing. We spent a long time evaluating everything, and Aurelia, for us, was a perfect fit. It's a stable, established framework backed by an excellent team. If anyone is interested in that sort of thing, I'd urge you to look at it.

When can users expect to get a "first look" at EDGE 3?

We're hoping that in the first quarter of next year we'll be able to allow those who are interested to have a play around with it.

When can users expect EDGE 3 to be launched?

We've made a commitment to deliver in the autumn of 2021. At the moment, I don't see any reason why this won't happen as we are on schedule, and we have a great team working across the board. Obviously, the world is in a strange place right now, so it's impossible to give a cast-iron guarantee, but if things remain stable, then we'll get there.

A slightly dreamy and futuristic question here – what sort of functionality would you build in EDGE if time and resources were of no object?

Being a programmer is tricky thing. I'm sure I don't speak for all programmers here, but I think that most of us would say that software is never finished, and you could easily spend weeks refactoring a piece of code that gave exactly the same output, in exactly the same time, but looked more 'beautiful'. I suppose given infinite time, it would be nice to achieve a perfect balance of an elegant user interface, with subtle micro-interactions giving feedback that led a user seamlessly through a process and made all the

managers go 'Oooooo', and an artistically crafted codebase – perfectly organised for years of simple maintenance that was entirely futureproof and made anyone who looked at it go 'Ahhhhh'.

Describe one of the greatest achievements of your team:

This is a difficult one to answer. I'll resist the urge to make some well-thought out joke that cleverly appears to be criticising a group of people, but is actually highlighting the great work, dedication and commitment they display on a daily basis. Mainly because the development team are a simple folk, and it would just go over their heads.

And finally, in which way does EDGE resemble your personality:

You do realise that this is as bad as asking 'If you were an animal, what animal would you be?' You are aware that you're asking me to compare an intimate, personal trait, with what is, at the end of the day, a database? I think these questions need updating.

It's a cat, by the way.