

Connected Systems Consulting Ltd

Behaviour Based Maturity Model

Introduction

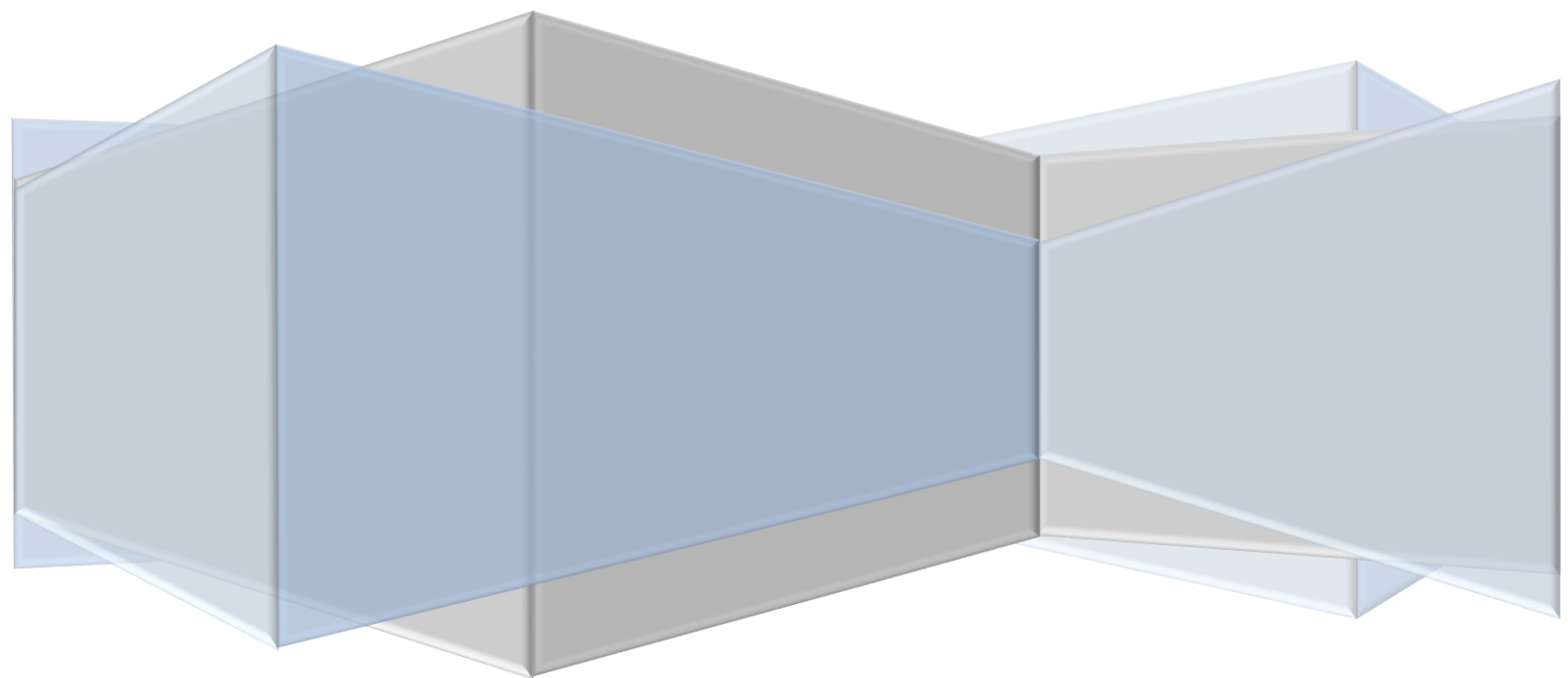


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OVERVIEW

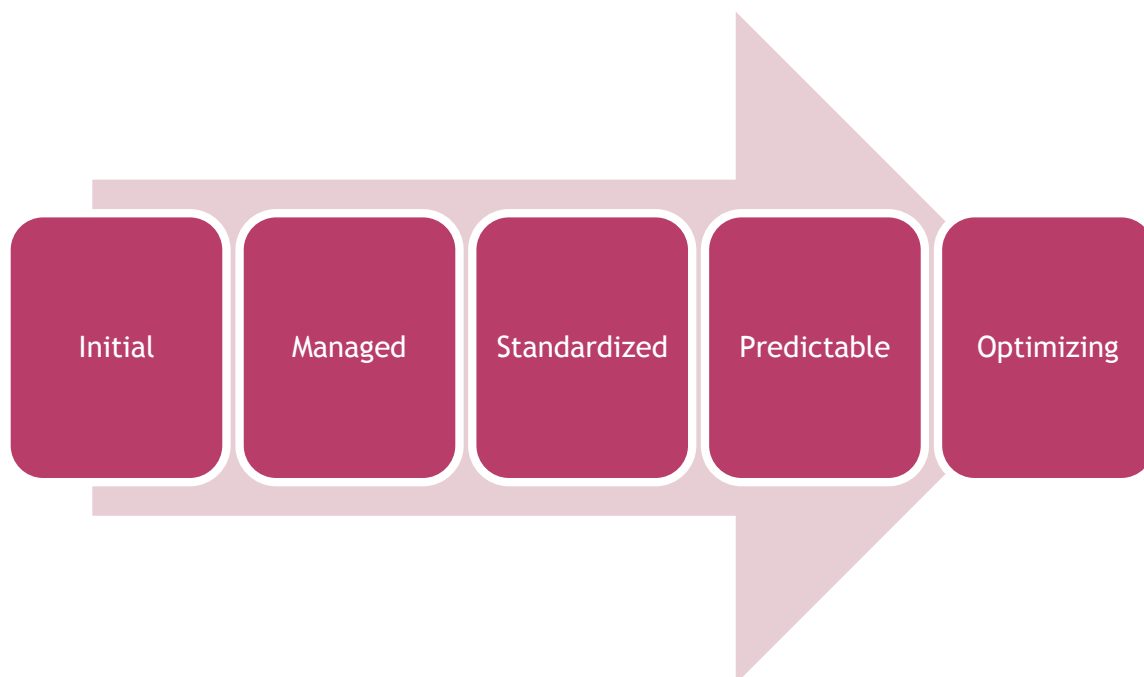
Over the years I have worked with many organisations around Integration projects and one of the key areas I have specialized in is “how do you deliver successful integration projects with Microsoft technologies”? I have also undertaken a lot of projects where customers have gotten themselves into a bad place and I needed to help them to get back to a place where they could be successful.

This experience lead me to consider what makes one organisation successful while another struggles or fails. Often the technology is blamed for projects that experience problems but in reality this is rarely the case. My thinking in this area lead me to consider the behaviours and practices that I see organisations use in their integration projects and to see similarities between organisations and to identify behaviours and practices which lead to success.

When comparing organisations in this way, a Maturity Model is often the way analysts would try to compare organisations.

Maturity Models have been around in the industry for a long time but I always felt that they had limitations in terms of their practical application.

Let’s look at a classic maturity model associated with things like Business Process Management.



In the model I feel it provides a view that is too high level and tries to put the subject in one box when in actual fact an organisation is a complex entity which may display behaviours which would be considered to be very

mature and not do things which you would consider to be basic level of maturity. This means that an organisation can have a degree of maturity at all levels at the same time so the maturity can't really be a linear progression from one area to another.

If you think of this concept it is really the same as the fact that an adult human can display childish behaviour in one context but very intelligent and mature behaviour in another.

My second issue with a standard maturity model is that they are subjective rather than measurable. This means a traditional maturity model would be open to abuse and be unreliable.

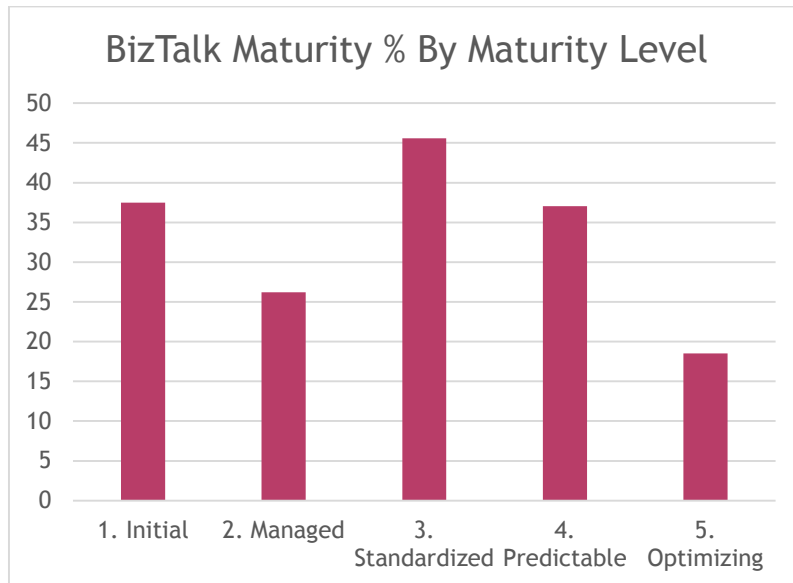
This led me to consider the idea of a maturity concept that achieves the following areas:

1. Statements of maturity should be based on behaviours and practices displayed by the subject
2. Maturity should be able to be displayed as a degree of maturity at each level rather than a single statement of maturity
3. Maturity should be clearly measurable rather than based on opinion
4. For organisations who need to improve the concept should provide a way organisations can see this improvement through measured changes in their maturity level.

On the back of this I have created what I refer to as the "Behaviour Based Maturity Model". My plan is to use my experience of Microsoft Integration projects to develop and improve the model but keep it generic so it can be adapted and applied to other projects.

INTRODUCING THE BEHAVIOUR BASED MATURITY MODEL

The aim of the Behaviour Based Maturity Model is to answer a set of questions in a survey which relate to the subject you want to measure. From the results of these questions a calculation of the organisations maturity can be obtained. The maturity will be presented as a profile showing the level of maturity in each of the maturity levels. An example of what this would look like is in the picture below.



In this graph you can see that the profile of maturity shows a score for each of the levels of maturity. In the case of this particular organisation you can see that although they are generally quite immature across the board they must display some behaviours which are generally considered to be of the optimizing maturity level. In the previous model diagram these behaviours would be lost by pigeon holing the organisation in a single maturity box.

In the rest of this document I will discuss the lower level details of the model and how it can be applied.

BEHAVIOURS & PRACTICES

In the Behaviour Based Maturity Model we start at the bottom with the behaviours and practices which relate to the subject we want to measure the maturity for. The behaviours should be in the form of a question which can have a true or false answer. Some example of this from the technology world might be:

- “Do you automate software deployment’s”
- “Do your developers have training plans”
- “In your production environment do you have automated monitoring software to monitor the state of your applications”

By starting with behaviours we are thinking about the kinds of things which breed success and the kinds of behaviours which encourage failure.

These questions should then be grouped into categories and maturity levels.

MATURITY LEVEL

As with most maturity models there needs to be a levelling system to group together behaviours which are considered more mature than others. With the Behaviour Based Maturity Model you can create your own behaviours if you want, but sticking with the example for Software Integration which I am using in this paper I am using the following maturity levels which are common in the IT and BPM space.

The maturity level will be graded in terms of the following capabilities:

1. Initial
2. Managed
3. Standardized
4. Predictable
5. Optimizing

Below is a description of what these levels mean.

Initial

A maturity level of initial is the typical starting point for a project. It is very important that you cover all of the points required to get a high score in the initial section. If you have gaps in your maturity at this level then you are likely to feel a lot of pain during all of the projects that you do.

If you are only scoring well in this level of maturity then it is likely that the success of any projects you undertake is heavily dependent on some key people in your organisation and the knowledge in their heads.

Managed

If your organisation scoring well in the managed level of maturity but poorly above that, then it is likely that you have some good processes in place which are helping to ensure that the projects and operations are running smoothly. It is probably also true that these processes are very custom made and not really related to industry good practices. The success of your organisation if your profile shows that you peak at this level of maturity is really down to these managed processes. One problem to watch out for is if your organisation needs to scale it may be difficult for those processes to scale or be transitioned out to a wider usage.

An example of this from the IT world could be something like a support team which are seen to run a fairly tight ship and be well organised but are also seen as critical to the organisation yet there is little understanding over what they do. These teams may be seen as keeping the ship running and dealing with regular problems a little bit like Scotty in Star Trek.

Standardized

In the standardized level of maturity your organisation probably has clearly defined standards and processes. You are likely to be following many best practices from the industry.

Your organisation may have done a number of projects which have been successful but likewise may have also had problems with other projects. Success is often related to the effective application of these standards.

Sometimes you will experience failures which can be related to inexperienced people not following the standards or not knowing they are there.

Predictable

In the predictable level of maturity you will find that in addition to standardization you also have people following processes effectively and good collaboration around them. Your teams are used to working with and succeeding with the behaviours they have in place. This has bred confidence and there is a level of reliability and dependability on project teams within your organisation because generally people know what is expected.

Success is coming from the predictability of the processes you have in place.

Optimizing

In the optimizing level of maturity the organisation gone to the next level and is now in a place where the behaviours are now driving decision making to optimize these behaviours or to drive decision making in areas outside of the maturity subject.

As an example of this your software development team may have included monitoring enhancements in the application which is creating a new level of near real-time business intelligence from your applications which can help managers to make decisions immediately rather than having to wait until overnight reports run and tell them about the opportunities they missed out on yesterday. In this case the improved maturity of your application monitoring was able to let the sales team make critical decisions for the benefit of other parts of the organisation.

It is sometimes difficult to display behaviours in the optimizing level of maturity but they are usually there in most models contexts.

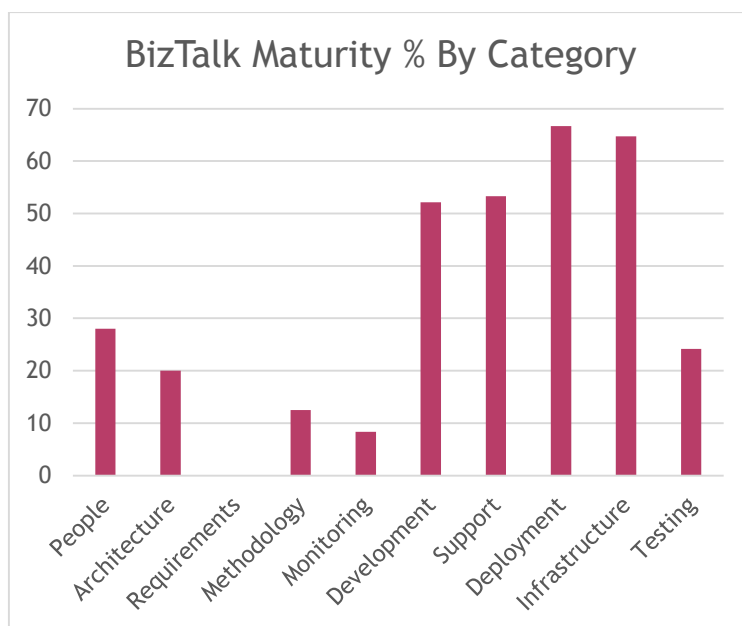
CATEGORY

When creating a model for your context I recommend assigning each behaviour question to a category. One of the reasons for this is that in most organisations you will be looking at the maturity of a subject which will touch on a number of areas of your organisation. In this case it is useful to group the behaviours related to these areas so you can see how each area performs and also how it improves.

In the case of analysing the maturity of an organisations IT projects I may choose to break the behaviour questions down into the following categories:

- Architecture
- Deployment
- Development
- Infrastructure
- Methodology
- Monitoring
- People
- Requirements
- Support

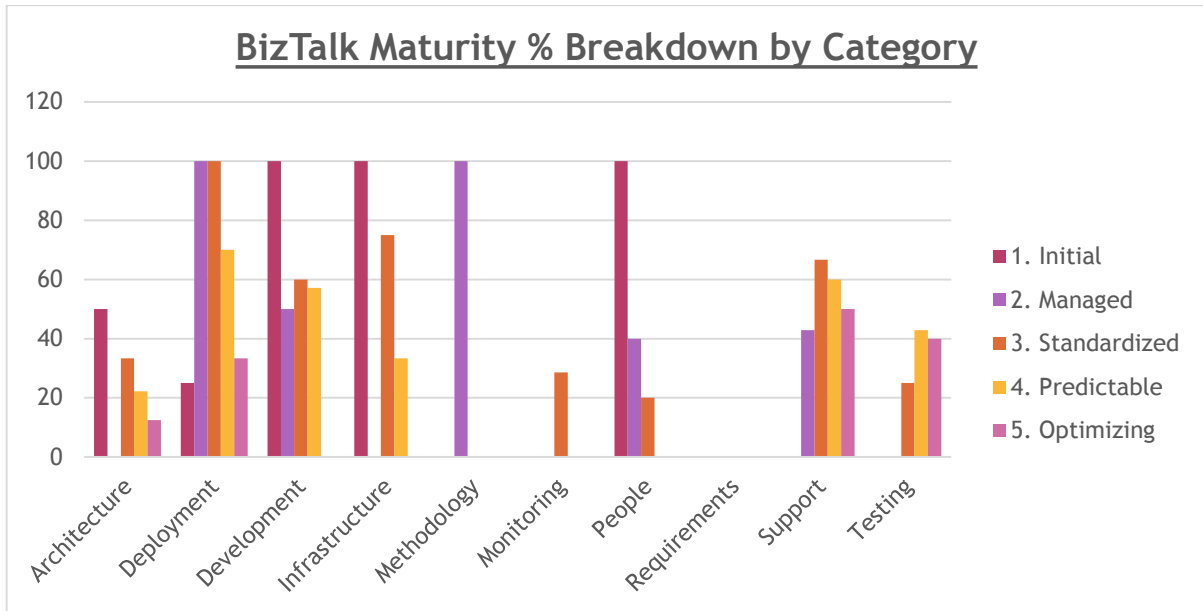
In the following graph you can see how this additional detail can help me to identify categories where the organisation is much more mature than others.



This graph from an IT project shows me that the organisation might be strong(ish) in a number of areas but has some very obvious weaknesses. These areas are most likely to relate to problems that the organisation has, and in the case of that case study that was true.

While the above graph shows the areas of strength and weakness there is another level of detail available when we combine the maturity level and category.

The below graph shows the combined level of detail for this sample organisation.



The graph above shows more detail on the maturity rating for each of the categories. While the organisation may seem relatively strong in all levels of maturity for deployment and development, you can see that in some categories the organisation is showing very low scores; even in the initial level of maturity.

The category level view is really important when it comes to looking at improvement initiatives. This gives you the detail to work out where investments should be made. In this example of an IT organisation you could tell straight away that if they are doing any projects then some serious work needs to be don't with their methodology and requirements management areas as no matter how good your development team is without a good way to manage these two weak areas you will always have problems.

SCORING

At this point we have a set of behaviour based questions and each question has been associated with a category and a maturity level. The next step is to consider a weighting for each question.

Generally each question answered with a “True” answer is given a value of 1 point. Note that this means you should word your behaviour questions in such a way that the answer “True” confirms you display the behaviour. An example of this would be:

“You do not have many defects in your production environment” – Could sound confusing

Would be written as:

“You find few defects in your production environment” – Sounds just right

WEIGHTING A BEHAVIOUR

Sometimes you may have a particular behaviour which is so important it should be scored higher than the others. This means that you can mark some behaviours as having more than 1 point for a true answer. This means if an organisation does not display a behaviour which is very important it would have a bigger effect on their maturity.

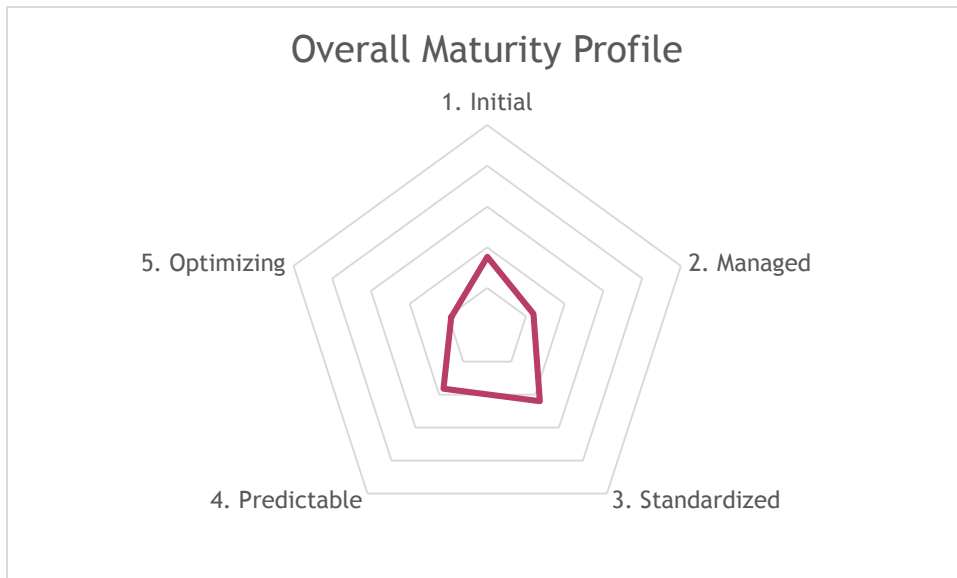
An example from the IT scenario where this could be applied would be in the development category. If an organisation was doing most of the things as expected in the Initial category but for some reason did not have a source control system to manage their source code then this would be a major maturity issue in this context. I would want this question to have a significant weighting so that if it was not done it would be highlighted as key area to sort out.

OVERALL SCORING

When the survey is complete the scores can be calculated into a percentage rating of maturity for each given area. As a general guide if an organisation is scoring >75% for a maturity area then you I would consider the organisation to have achieved that maturity level. However remember that in this model we are less concerned with your overall score and instead are interested in your “maturity profile”.

MATURITY PROFILE

An organisations Maturity profile is the view of the organisation when looking at the overall maturity of the subject against its rating in each maturity area. The below picture shows this profile for the sample organisation. The wider the area covered in each axis then the more mature it is.



This profile view makes it easy to compare multiple organisations in either the same or different industries.

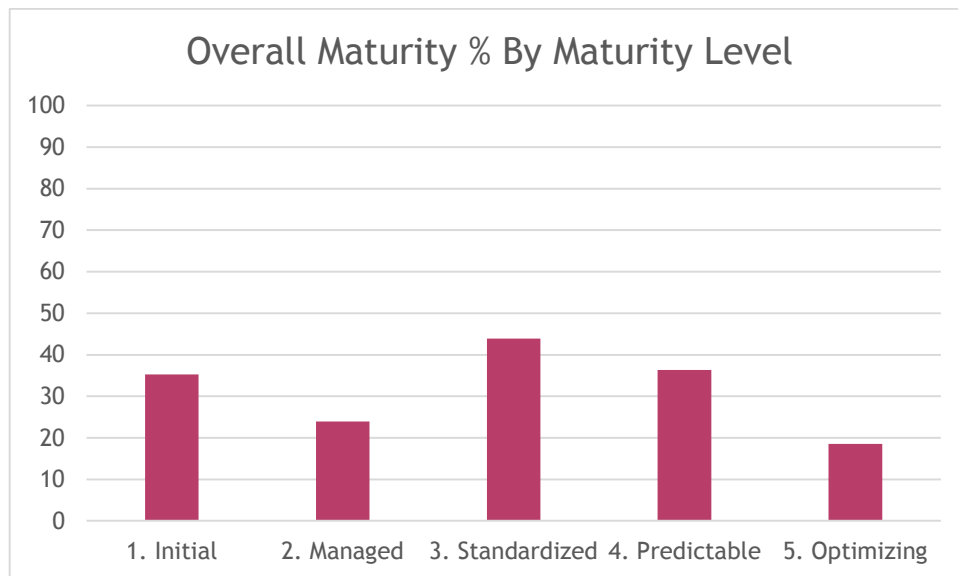
On the website for the BizTalk Maturity Assessment (<http://www.biztalkmaturity.com/>) you can see the Behaviour Driven Maturity Model in action where I have applied this type of model. You can download an example of the spreadsheet which allows you to complete the assessment survey and to see how some of the data visualizations work.

MORE ANALYSIS OF MATURITY

In addition to the maturity profile on the spreadsheet I have included with the BizTalk Maturity Assessment implementation of this model there are some other analysis views of this data. This section will describe these.

OVERALL MATURITY % BY MATURITY LEVEL

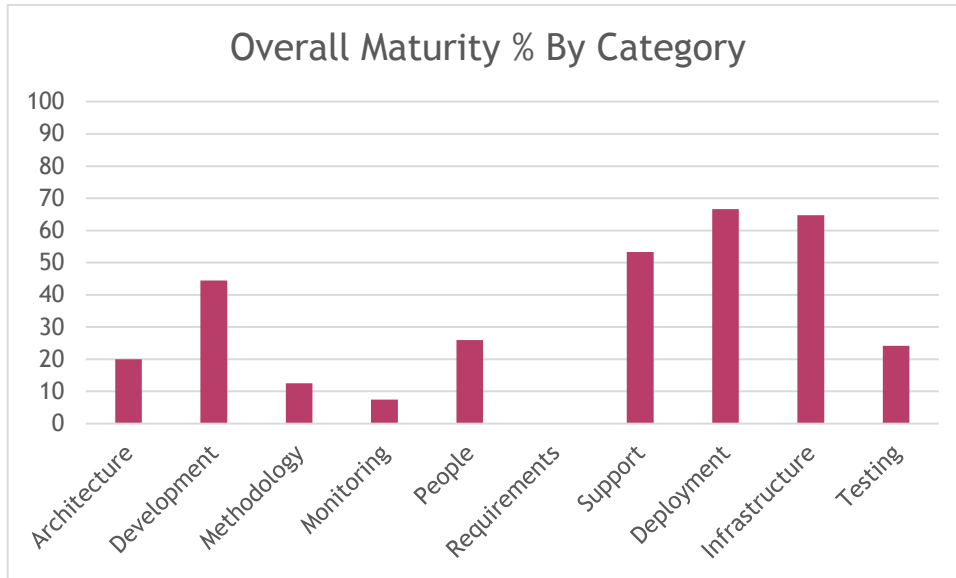
This view will let you see similar information to the Maturity Profile except that it is in bar graph form so that it's easier to see exactly where your organisation sits in terms of its maturity.



This type of view should make it easy to communicate information to a senior management team where you can show at macro level the maturity of the subject.

OVERALL MATURITY % BY CATEGORY

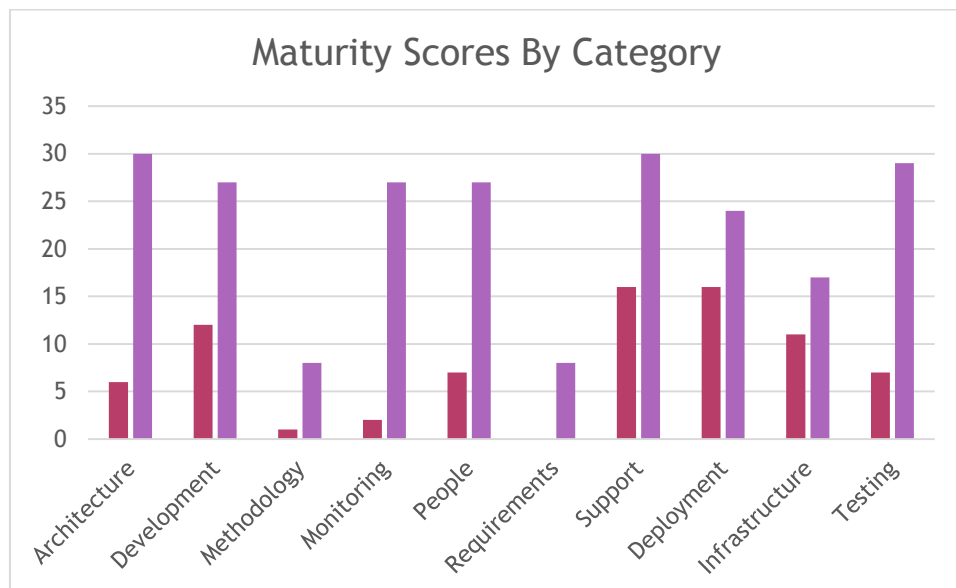
In this view of the data we are looking into the individual categories. We are not looking at the maturity level though. It's an overall percentage of the score they got across all maturity levels. The below graph illustrates this.



In the above graph it makes it really easy to see which categories are strong and which are weak. As an assessor of maturity this would give you a good start when working with an organisation and trying to help them work out which categories are the ones we need to look at improving first.

MATURITY SCORES BY CATEGORY

In some maturity assessments there may be more behaviour questions identified for one category than for others. This view of the data lets you see at category level the overall score (in points) achieved against the number of points that were available.



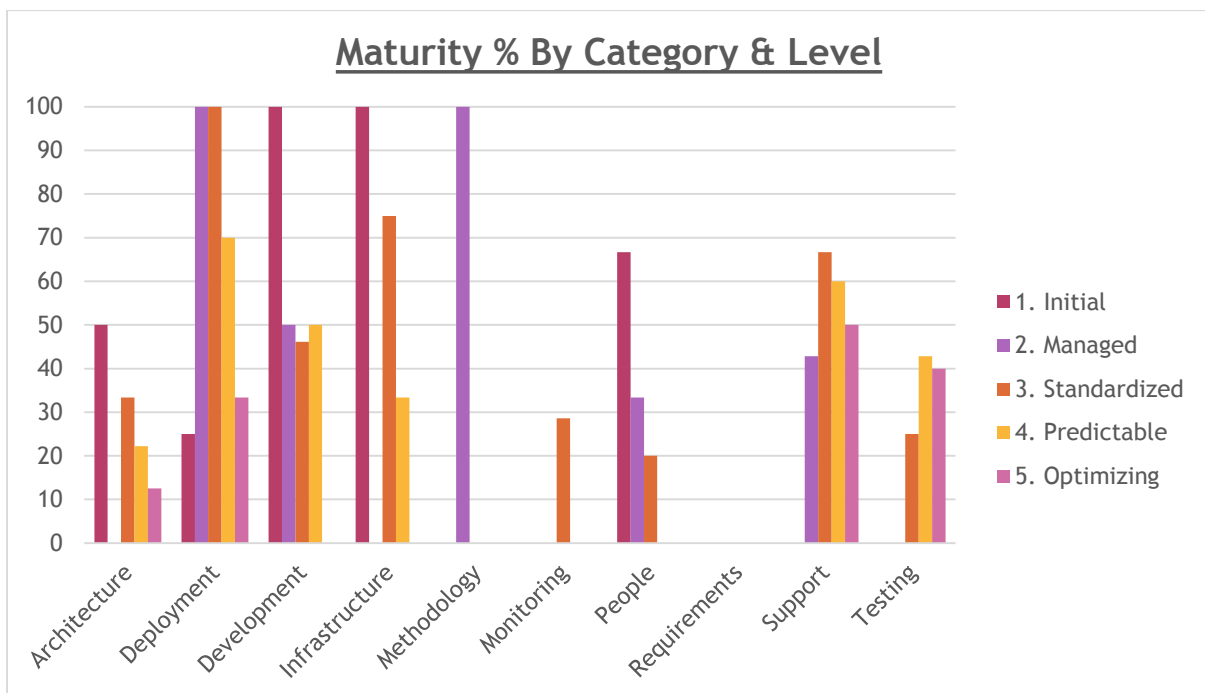
You can see in the example above that while the overall % scores for methodology and monitoring were similar the number of points available in each section are quite different. This could mean a couple of different things such as:

- In the monitoring category there are more false answers. This means there are more possible ways of improving maturity
- In the methodology category there are fewer overall measures of maturity so doing fewer things could have a bigger impact on the maturity %

MATURITY % BY CATEGORY & LEVEL

In this view of the data we are bringing together the category and level of maturity. This allows us to see each category in terms of its % scores for each area. This can help us to visualise each area on its own and to see how we score in each area.

An example of this view is below.



From the above data I can visualise that although this organisation is reporting as quite mature generally in the deployment area they have some weaknesses at the Initial level. This indicates that there are some problems with their basics in this area.

Otherwise you can also see that there are general weaknesses across the board in the areas we have identified previously. This additional level of detail can help you work out which categories to invest in for improvement and within the categories where your weaknesses may lie.

DRIVING IMPROVEMENT

One of the key aspects to the Behaviour Based Maturity Model is the assessment which you can do along-side it. In the case of the BizTalk Maturity Assessment which I have described as one implementation of this model concept one of the key angles is being able to drive and manage improvement in maturity.

After an initial assessment and analysis would have identified areas for improvement you can then implement these improvements and at some future point you can retake the assessment for your subject. If you have delivered your improvement initiatives well then comparing the assessments from the start and current position should make it really easy to see the improvements which have been made.

SUMMARY

There is currently a lot of interest being shown in the model I have produced. Mainly in that it is an easy way to measure where you are and to identify obvious areas for improvement.

As I mentioned earlier in this paper, the original model was based around the subject of Integration with Microsoft technologies and more specifically the BizTalk Maturity Assessment on <http://www.biztalkmaturity.com/>. The model and behaviour and practice driven approach to measurement however is generic and could be applied to the measurement of maturity for any subject.

If you are interested in exploring the maturity of other areas please refer to the <http://www.biztalkmaturity.com> website and contact us as we are keen to encourage others to develop models based on this theory for other areas.

ABOUT THE AUTHOR

Michael Stephenson is a UK based integration specialist who has worked with many consultancies and customers delivering integration solutions based on Microsoft technologies such as BizTalk and Windows Azure.

Michael is heavily involved in community activities such as the UK Connected Systems User Group and speaking at events across Europe. Michael has also been a Microsoft Integration MVP for the past 5 years.

Blog <http://www.geekswithblogs.net/michaelstephenson>

Linked In <http://uk.linkedin.com/in/michaelstephensonuk1>

Twitter [@michael_stephen](https://twitter.com/michael_stephen)

Website: <http://connectedsystemsconsulting.sharepoint.com>