



CASE STUDY

USING SPATIAL ANALYSIS TO BUILD A LOCATION-BASED PRICING MODEL

There are many different theories that service providers can base their pricing model on. This can come down to the size of the business, the competition in the market, or the mode in which these services or products are delivered.

Enforcing a pricing structure based around distance works perfectly for some businesses. Let's use a postal company as an example: your customers understand that they're paying for the time and manpower that goes into getting a courier or letter from one part of the city to the other, or from one country to another. That makes sense. Right?

But let's say you're working in a highly competitive market, offering products and services that are essentially exactly the same for each customer. This is when building a pricing model based on distance gets blurry. The customer in Masterton shouldn't be charged more than the customer in Wellington just because it takes your representative longer to get there.

So, this is where we change things up. And it becomes no longer about distance, but density: it's not about how long it takes you to get to where you're going but the size of the market within where you're going. And that's what we'll be looking at in this case study.

Urban vs. rural vs. remote – where do you draw the line for each?

Like many New Zealand businesses, you may offer and deliver services across the country but, of course, you charge differently for your city-based customers than you do for those on the South Island's remote west coast.

So how do you define urban? Is it based on the number of high rise buildings around you, or the number of people living in an area? Is a generalisation of urban areas enough? Is a rural area defined by how much grass you can see, or how many cows there are? Is a remote area synonymous with the top of a mountain range or in the middle of a forest?

Each one of us has our own ideas of what urban and rural mean and of what it means to live in a remote area of New Zealand. But what if we challenged those ideas? What if we looked at a geographical area in terms of its market potential and describe it based on that? Well, that's exactly what we did recently.

Our client provides residential services all over New Zealand, and because of this, needed to find a way to accurately price the provision of these services. With a high level of risk in getting the pricing wrong, it was essential to find a way to price their services so that the business' reputation and customer relationships were protected by avoiding under or over charging customers.

While existing business pricing rules were still firmly in place, they were increasingly difficult to implement and confusing to understand – even for seasoned professionals. The result of this was ambiguity and inconsistency around pricing, and a risk that, should this inconsistency be exposed, would be detrimental to the business.

How can spatial analysis help with creating a cohesive pricing model?

The solution was to flip around the idea of what urban, rural, and remote are with spatial analysis. It was irrelevant how far the provider had to travel to get to a potential client, what was important was how big the market was when they got to that area.



We deduced that the client's current address accuracy and processes for pricing delivery were incorrect, therefore we needed to determine a model which would accurately assign pricing information to each product delivery.

We developed a spatial model that reflects opportunity density and can then be used to assign accurate pricing zones to both existing and potential customers.

Using road lengths and New Zealand address data we could determine a set of urban, rural, and remote meshblocks that worked soundly within our clients' existing rules. We also pulled together various data sources, including client specific data, census data and NationalMap – Critchlow's flagship data product.

And by then validating all this against a number of other variables, we were able to deliver a realistic pricing model that would ensure these rules are always implemented consistently. The client could now have confidence in the model and know that there was a consistent way of defining the cost a customer should be charged.

[There are always surprises, but there's reassurance too.](#)

Throughout the entire development process, we valued and encouraged input and feedback from the end users.

By showing the client the model via an online mapping interface, we engaged in an iterative model development cycle meaning we could be positive that not only did the business have buy-in, but they could present it to the rest of the business in a logical way.

Of course there were a few surprises along the way, for example, it became evident after applying the model that areas we would typically describe as rural actually met the criteria for an urban pricing zone. And it was these surprises that really highlighted the value of going through this exercise. After all, these are the areas that make a real difference to the profitability bottom line.

[Putting it all into practice.](#)

So what does this mean for the business going forward?

It means that they can now better understand the size of the opportunity in the market, ensuring that any risks to their reputation due to under or over charging are greatly reduced. The business can have confidence that their clients are treated equally, consistently and fairly. Also helping their reputation, the model allows pricing decisions to be communicated in an accurate way to customers.

In the geospatial world, we have the ability to challenge the norm – to redefine standard definitions. So, how do you define urban?