

Chew-Chew

The Chew-Chew system provides a take-away ordering system that is mediated via WhatsApp. The patron starts a conversation with the restaurant's WhatsApp ordering number and then submits an order. The Restaurant receives the orders via a web application (generally running on a tablet in the establishment), and then enters the orders into their normal kitchen pipeline.

In what follows we see the Chew-Chew system unpacked through a progressive sequence of system refinements.

Simple

The basic tenet is that a patron can place an order and that the restaurant will prepare and provide the food that was ordered.

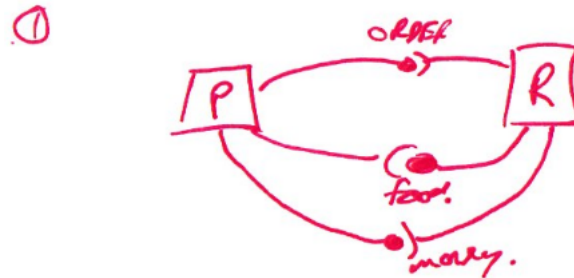


Figure 1: Chew-Chew Simple

WhatsApp

The intent of Chew-Chew is that the ordering process is mediated via WhatsApp.

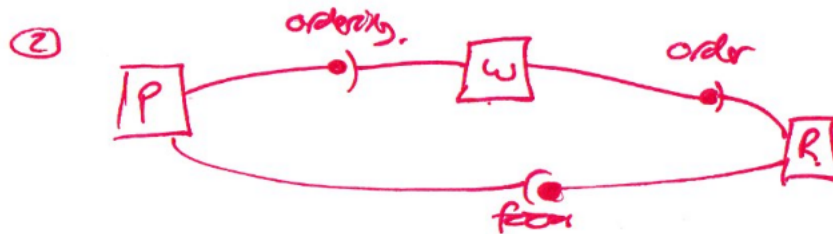


Figure 2: Chew-Chew WhatsApp

Devices

Given that WhatsApp is being used, the patron will need to interact via a device (e.g. a phone).

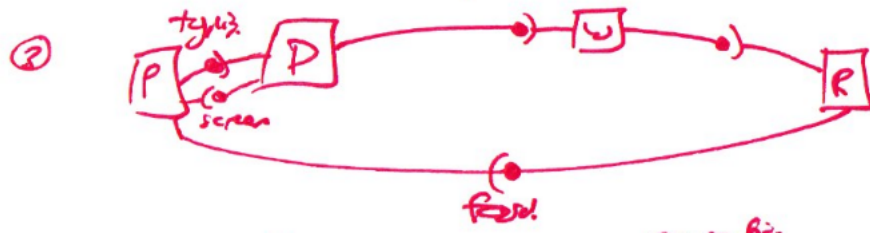


Figure 3: Chew-Chew Device

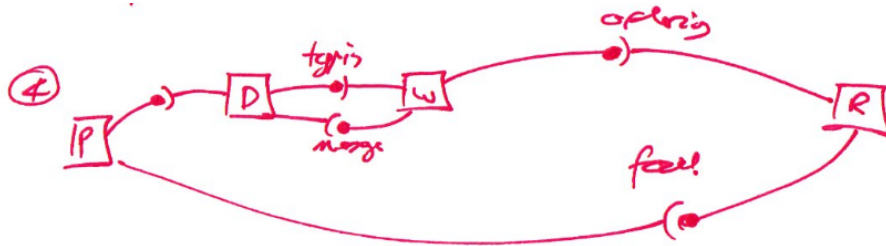


Figure 4: Chew-Chew Device

Blackbox

However, WhatsApp doesn't pass the conversation as-is, onto the restaurant. Rather the Chew-Chew system mediates the conversation and presents menus, and collates the order.

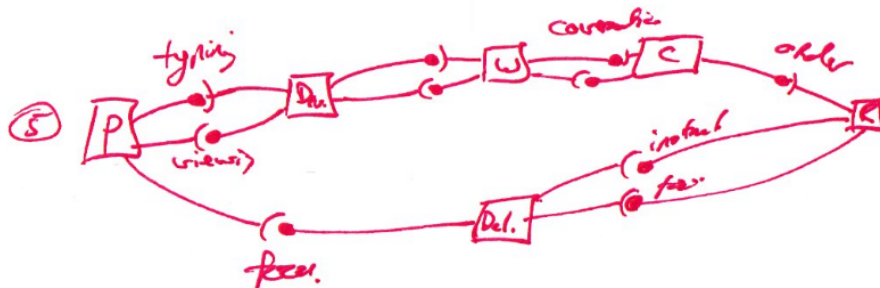


Figure 5: Chew-Chew Black-box

Gateway

In order to interact with WhatsApp, the Chew-Chew system makes use of a third-party gateway application – in this case, Twilio.

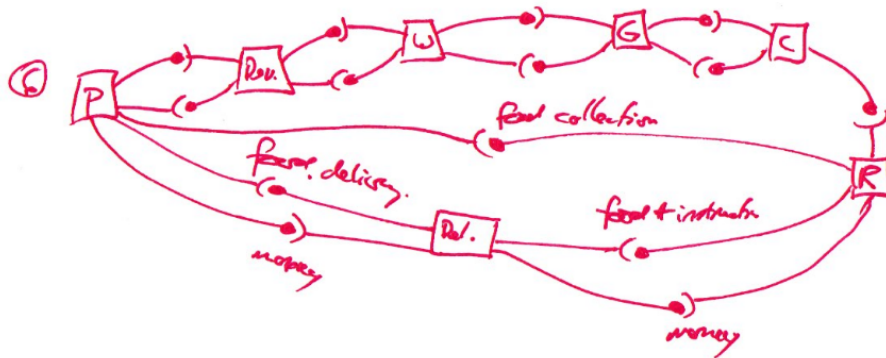


Figure 6: Chew-Chew Gateway

Restaurant Stakeholders

Now that we have the gist of the bigger picture, we can clarify who the rest of the stakeholders are, in the system. That is, who the other human operators will be.

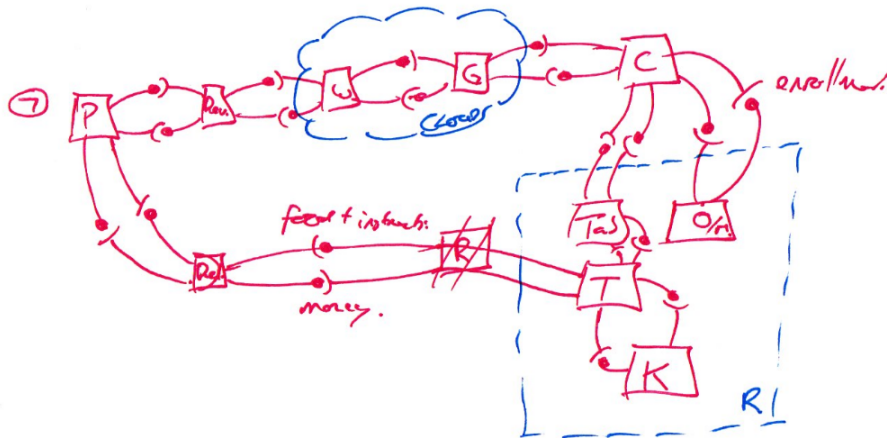


Figure 7: Chew-Chew Restaurant

Whitebox

Given an understanding of the human participants, we can start to infer the required internal system structure. This aims at creating suitable separations of concern in order to provide data isolation, scaling, resilience and security. Additionally, these splits can help to reduce scaling where and complexity where it is not needed.

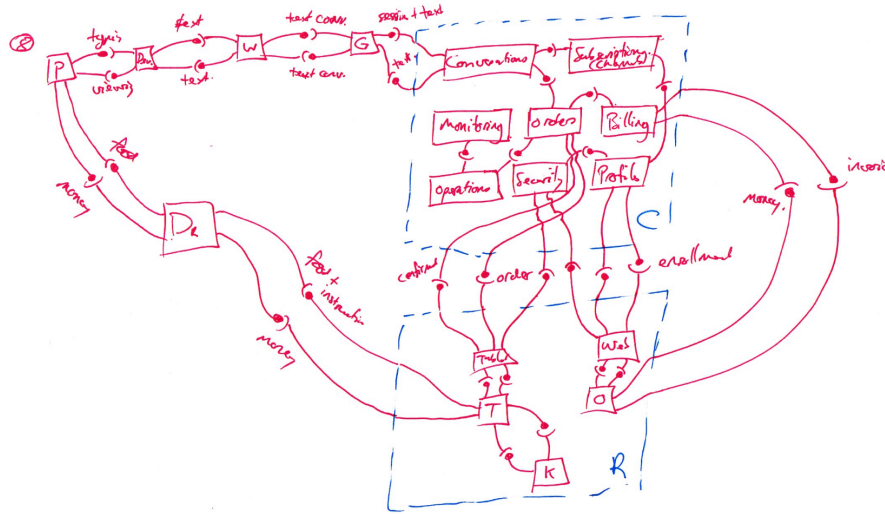


Figure 8: Chew-Chew White-box

Details

Finally, we start to provide more details regarding the inner workings. This is primarily a technical separation between components that will interact via different protocols and for components that may be redeployed dynamically.

Ontology

With the above we are able to draft a basic systems ontology.

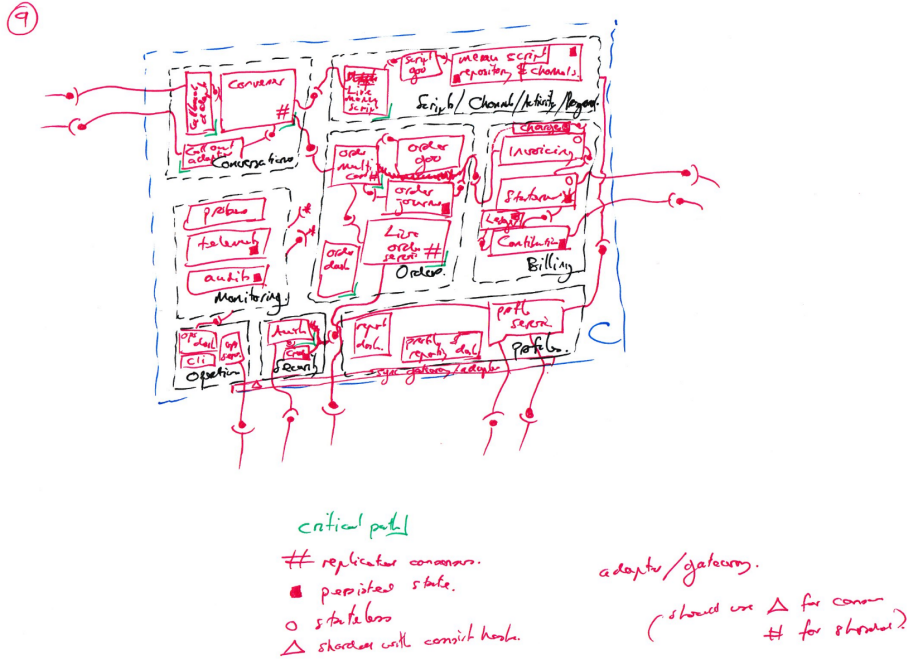


Figure 9: Chew-Chew Unpacked

C = chew chew K = kitchen
 R = restaurant
 G = gateway (Turkio)
 W = WhatsApp.
 T = teller
 O = owner
 M = menu
 P = patron
 Dev = Dev's
 Del. = Delivery. (Phin).

Figure 10: Chew-Chew Key