“When I stepped outside the box, my colleagues really appreciated it. But management did not. They put me back.

The people that excel and create the most value are the ones that step outside their box”

Hank Barnes, Gartner: “Playing Outside Your Box” May 2018.
Classic “Tiered” Support Structure
Deconstructing the “Tiered” Support Structure

LEVEL 1 SUPPORT

LEVEL 2 SUPPORT

LEVEL 3 SPECIALISTS

LEVEL 2 SUPPORT

LEVEL 3 SPECIALISTS

LEVEL 2 SUPPORT

LEVEL 3 SPECIALISTS

LEVEL 2 SUPPORT

LEVEL 3 SPECIALISTS

LEVEL 3 SPECIALISTS

LEVEL 3 SPECIALISTS

@jonhall_
Issues may spend time here

...when the answer is here...  ...or here.

LEVEL 1 SUPPORT

LEVEL 2 SUPPORT

LEVEL 3 SPECIALISTS

LEVEL 3 SPECIALISTS

LEVEL 3 SPECIALISTS

LEVEL 3 SPECIALISTS
When tickets eventually escalate...

...they frequently bounce back for clarification
The system encourages “heroes” (not in a good way)
Swarming...

involves removing the tiers of support, and calling on the collective expertise of a “swarm” of analysts.

https://www.serviceinnovation.org/intelligent-swarming/
**Tiered support**

- Siloes and hierarchies
- Directed
- Linear, rigid
- Measured on activity

**Swarming**

- Network
- Collaborative
- Dynamic, loopy
- Measured by value creation

@jonhall_
Global Support

- 24 hours, 365 days.
- Over 500 support specialists with over 2,600 years of combined experience
- 200,000+ incidents addressed each year
- Hiring focus on communication skills

Best Practices

- Knowledge-centred support (KCS)
- Industry Benchmarking
- Quality Management Processes
- Problem Management
- Collaboration and Swarming
- Support, Communities and Social Media
Swarming at BMC

- Severity 1 Swarm
- Dispatch Swarm
- Backlog Swarm
Swarming Process at BMC

Severity 1 Swarm

Prioritise
Severity 1 Swarm

- Rapid responders
  - Three agents on a scheduled one-week rotation
  - Primary focus: Provide immediate response, and resolve as soon as possible

Swarm lead
*Communications*

Other members
*Research, coordinate, test*
Swarming Process at BMC

Prioritise

Severity 1 Swarm

Local Dispatch Swarm
30% solved here
Dispatch Swarm

“Cherry pickers”

• Meet every 60-90 minutes
• Primary focus: Can new tickets be resolved immediately?
• Also: Validation of ticket details before assignment to specialists

Experienced analyst  Less-experienced analyst
Swarming Process at BMC

- Prioritise

1% Severity 1 Swarm

99% Local Dispatch Swarm

70% Local Product-Line Support Teams

@jonhall_
Swarming Process at BMC

Severity 1 Swarm

Local Product Line Support Teams

Local Dispatch Swarm

Severity 1 Swarm

Local Product Line Support Teams

Local Dispatch Swarm

@jonhall_
Swarming Process at BMC

Local Product Line Support Teams

Backlog Swarm

@jonhall_
Backlog Swarms

• **Global fixers of troublesome tickets**
  • Meet regularly (often several times a day)
  • Primary focus: Challenging 3rd-line tickets
  • Replace reassignments and individual assignments

 Experienced analysts  
 R&D Engineers
Results at BMC

- 25% median resolution time improvement
- Customer satisfaction up 8 points
- More issues closed in <2 days
- Significant reduction in backlogs
- Halved onboarding time
- Freed resources for innovative offerings
Things we had to do to make it work

• Guidelines, not rules
• Metrics had to change (swarming breaks traditional ones!)
• Some people needed help to became more customer facing
• Banned ticket tennis and direct escalations to experts
• New tooling practices, particularly mobile and chat
Results at BMC

- 25% median resolution time improvement
- Customer satisfaction up 8 points
- More issues closed in <2 days
- Significant reduction in backlogs
- Halved on-boarding time
- Freed resources for innovative offerings
Another Swarming example – Telco’s “chat servicedesk”

“Three minute swarming”: Frontline support team can put customer on-hold, and jump into always-on chat room with subject matter experts
Making Swarming *Intelligent*

- Suggest Swarm participants based on contributions
- Encourage and reward
- Learn from each interaction
- Improve reliance of next interaction
- “Reputation” model
So... what does this all have to do with DevOps?

“IT organizations that have tried to custom-adjust current tools to meet DevOps practices have a failure rate of 80%”

DevOps and the Cost of Downtime: Fortune 1000 Best Practice Metrics Quantified (IDC, 2014)
DevOps adoption in enterprises

“Start-up teams” introduce DevOps

Prototype products, Ad-hoc support.

Products go big. Support must scale.
DevOps Enterprise Summit speakers (a sample), 2018
Enterprise systems are complex
DevOps challenges Service Desk orthodoxies...

- New services and applications suddenly appear
- Lost visibility when issues go to developers
- Lack of knowledge sharing
- New kinds of customer, especially external
...but enterprise realities challenge DevOps

- Scaling customer support
- Understanding the context of an issue
- Adaptation to life “on call”
- What to prioritise? Fix bugs or build new stuff?
- How to process alerts, particularly if noisy/low-quality.
There’s still a big role for enterprise Service Management, particularly at scale.

<table>
<thead>
<tr>
<th>Time Spent</th>
<th>Elite</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW WORK</td>
<td>50%</td>
<td>50%</td>
<td>40%</td>
<td>30%</td>
</tr>
<tr>
<td>Unplanned work and rework</td>
<td>19.5%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Remediating security issues</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Working on defects identified by end users</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>20%</td>
</tr>
<tr>
<td>Customer support work</td>
<td>5%</td>
<td>10%</td>
<td>10%</td>
<td>15%</td>
</tr>
</tbody>
</table>

2018 State of DevOps Report
@jonhall_
“The enterprise space doesn’t move slowly because they’re stupid, or they hate technology. It’s because they have users”

How to annoy a DevOps practitioner

- Work-in-progress queues
- Asynchronous communication
- Single role teams
- Individual over-exposure
- Lack of knowledge sharing
Where have we seen those things before?
Global car manufacturer: Connected Vehicles Division

Challenge: how to scale support to 6+ million new vehicles every year.

• “You’ve got to go where people are” – Senior developer
• Tiered support would mean 4-5 days to get to the right team
• First Responders instigate and coordinate ad-hoc swarms for big issues
• Other teams have 1 person on rotation for swarming
• Swarm grows and shrinks as necessary
• Swarm may include engineers from Amazon, Microsoft, etc.
Swarming aligns really well to DevOps

- Autonomy and self-organisation
- Knowledge transfer and skills development
- ChatOps, not email
- Prevention of accumulation of queued work
- Protection of individuals from burnout
Swarming as a means of delivering Cynefin?

- Wait... What?
- Pronounced “kuh-nev-in”
- Developed by Dave Snowden while at IBM in 1999
- Taken independent in 2005
- The word “signifies the multiple factors in our environment and our experience that influence us in ways we can never understand”
- **Obvious** and **Complicated** domains:
  - Repeating relationship between cause and effect
  - With **Complicated** you need to do analysis to *find* that relationship

- **Complex** domain:
  - Understanding the problem requires experimentation and analysis.
  - May, over time, be able to move to **Complicated**

- **Chaotic** domain:
  - Dramatic and unconstrained
  - Focus on damage limitation, try to move to another domain
“Obvious” Domain

• “Sense, Categorise, Respond”
• Template/knowledge-driven resolution
• Self service
“Complicated” Domain

- “Sense, Analyse, Respond”
- Dispatch-type swarm – pair up agents with varied experience
- Capture detailed knowledge for organizational learning
“Complex” Domain

- “Probe, Sense, Respond”

Phase 1: Initial analysis
* Understand issue
* Identify participants for information gathering
“Complex” Domain

• “Probe, Sense, Respond”
“Chaotic” Domain

- “Act, Sense, Respond”
- Sub-swarms
- Deal with the acute situation
- Try to discover sufficient information to move to complex
Issues reported by Swarming early adopters

• May increase costs even if other metrics improve
• Can be difficult to evaluate individual contribution
• “Cradle to grave” ownership across time zones
• Some individuals may dominate
• Finding the right people for a swarm is difficult
“Swarming works better than conventional processes.

I am able to get *multiple experiences* from swarm attendees of similar cases they have worked.

If there are no experiences, then it’s *perspectives*: Decades of experience”

Senior Support Analyst, BMC
“I have probably *doubled* my knowledge of the products in a year because of Swarming... and I have been here a long time”

Senior Support Analyst, BMC
Swarming appearing in ITSM frameworks

Tip
Some organizations use a technique called *swarming* to help manage incidents. This involves many different stakeholders working together initially, until it becomes clear which of them is best placed to continue and which can move on to other tasks.

Real World Example
Using swarms for support
Swarming is originally an Agile software development concept, which refers to a situation where everyone on the team works on the same story or task at the same time. In this real-world segment, swarming is applied to improve an organization’s response to service consumers and to increase knowledge sharing within the teams providing the consumer response.

ITIL® 4 Foundation (2019)
VeriSM – A service management approach for the digital age (2017)
Some more information

serviceinnovation.org/intelligent-swarming

twitter.com/@jonhall_