

# The Deep Web – Virtual Drug Marketplaces

Medicine

National Drug and Alcohol Research Centre

Joe Van Buskirk, Amanda Roxburgh and Lucy  
Burns

# Outline

- Background
  - Monitoring programs
    - DNeT
  - The Silk Road / Dark Web Marketplaces
- Methods
- Results
- Alternate Marketplaces
- Conclusions

# Background – Monitoring Programs

- The Drug Trends team at NDARC employs four monitoring systems:

 **DRUG TRENDS**

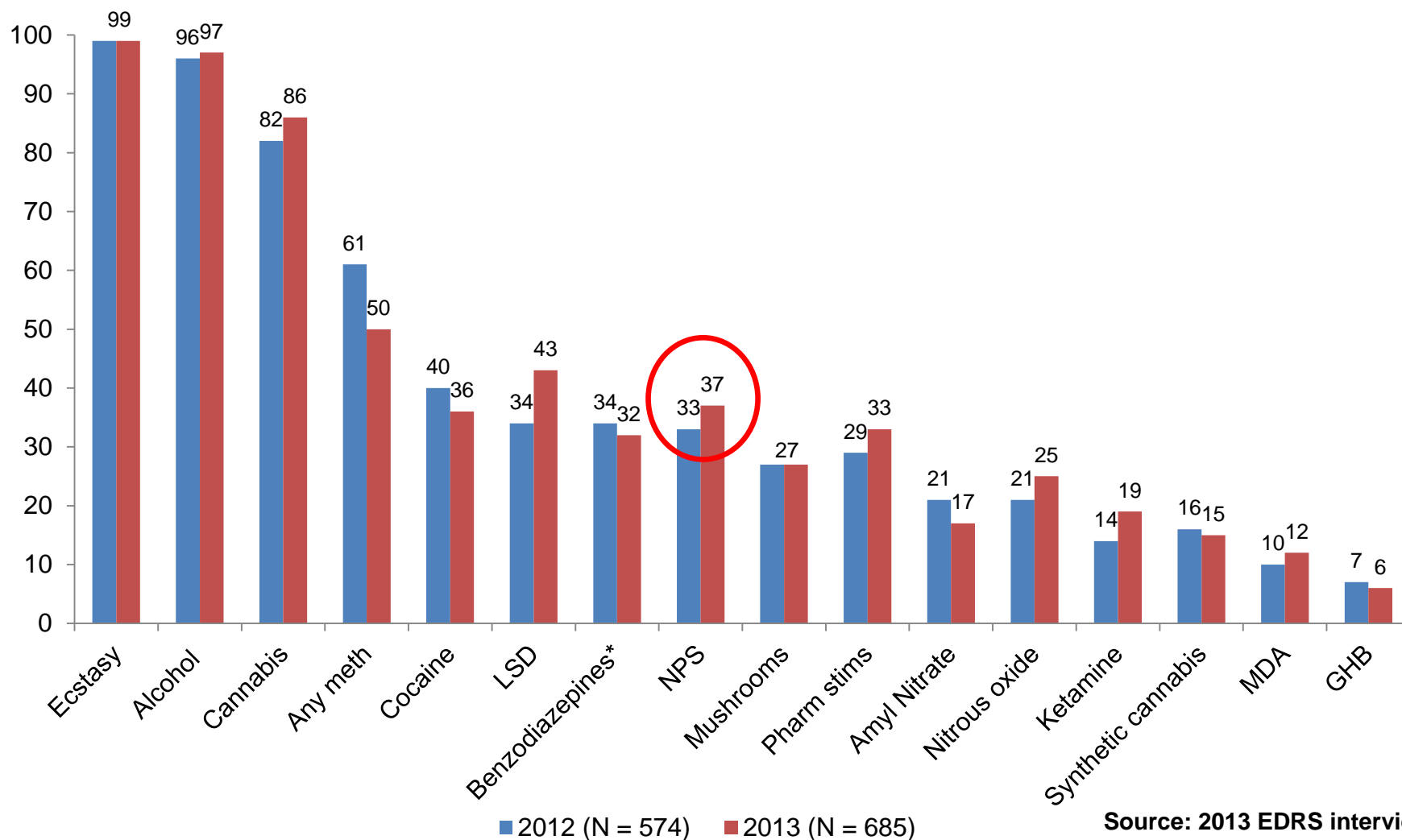
 **EDRS**

 **IDRS**

 **NIDIP**



# Snapshot overview of recent use, 2012-2013



Source: 2013 EDRS interviews

\* includes licit and illicit use

# Background – NPS

	National 2012 N=574	National 2013 N=685	Days of use
Phenethylamines (2C-x Class)	(%)	(%)	Median (range)
→ 2C-B	9	14 ↑	1 (1-48)
2C-I	2	8 ↑	1 (1-30)
2C-E	2	1	1 (1-2)
Synthetic cathinones			
→ Mephedrone	5	6	2 (1-40)
→ Methylone/bk MDMA	5	3	2 (1-15)
Ivory Wave/MDPV	2.5	1	1 (1-20)
Piperazines			
BZP	1	<1	1 (-)
Dissociative			
DXM (Cough syrup)	2.5	4	1.5 (1-52)
Methoxetamine (MXE)	1	2	1 (1-3)
Tryptamines			
5MEO-DMT	<1	1	1 (1-48)
→ DMT	12	14	2 (1-48)
Piperazines			
BZP	1	<1	1 (-)

Source: 2013 EDRS REU/RPU interviews



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# Background – Context

- Highly publicised death use

NPS



# Background – Context

- Highly publicised deaths associated with NPS use
- Australian Government Department of Health granted additional funds to the Drug Trends team at NDARC to monitor Drugs and New Technologies
- Aims of DNeT:
  - Monitor online NPS availability
  - Monitor online drug marketplaces
  - Monitor online drug forum discussion
  - Survey of online marketplace and forum users

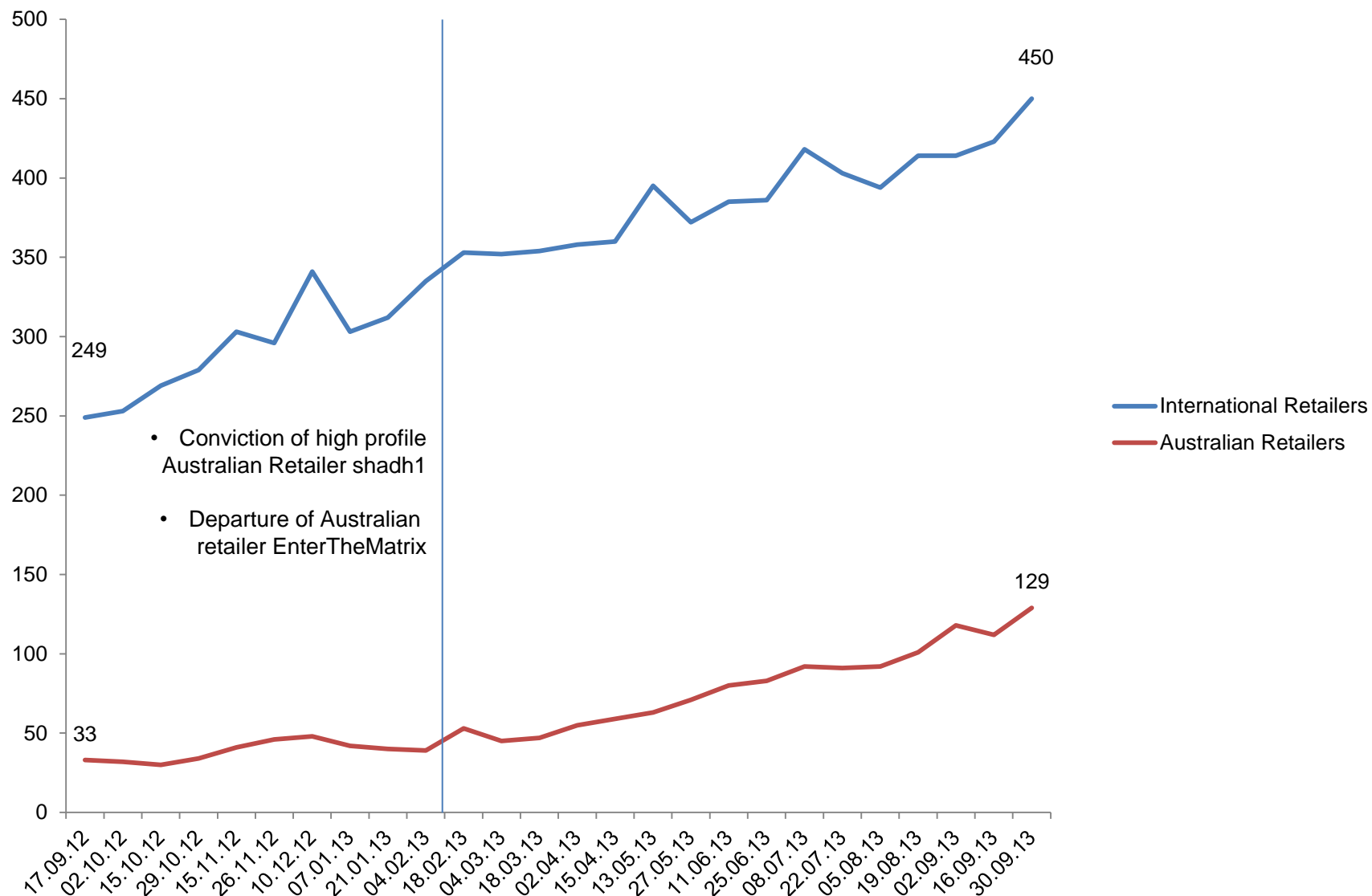


# Background – Dark Web Marketplaces

- Existing on the TOR network, or 'dark web', new and illicit substances are traded
- These marketplaces serve to greatly expand the availability of illicit and NPS online
- Dark web marketplaces have the potential to influence the price, purity and availability of drugs in street marketplaces
- These marketplaces warrant similar monitoring programs



# Number of retailers selling to Australia by time point and country of origin.



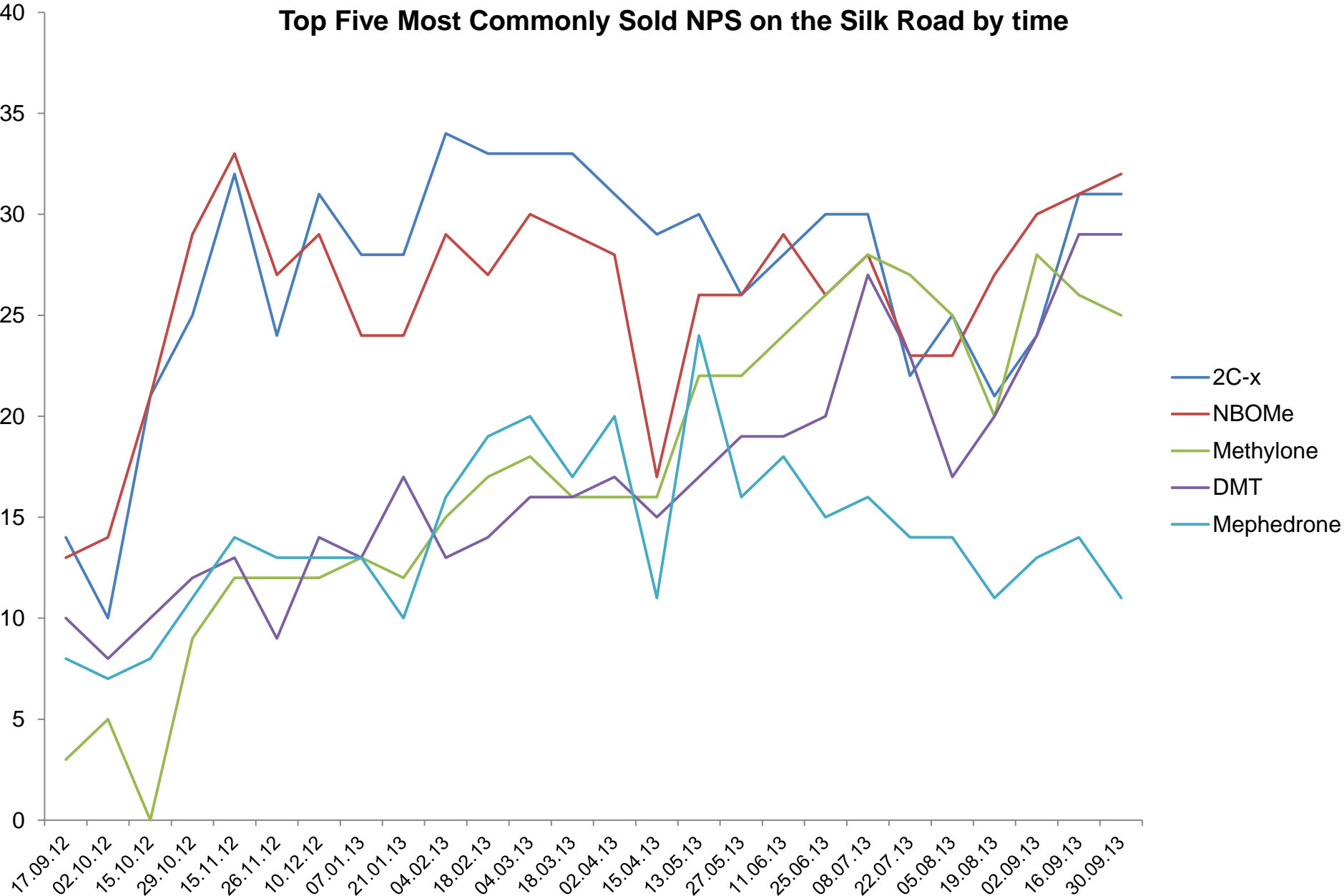
# Number of Retailers on the Silk Road by Substance and Country of Origin

Category	Australian			International			Overall		
	#	%	Rank	#	%	Rank	#	%	Rank
MDMA	110	38%	1	317	26%	4	427	28%	3
Pharmaceuticals	98	33%	2	425	35%	2	523	34%	2
Cannabis	95	32%	3	439	36%	1	534	35%	1
Methamphetamine	88	30%	4	202	16%	6	290	19%	6
NPS	68	23%	5	357	29%	3	425	28%	4
PIEDs	41	14%	6	108	9%	10	149	10%	8
Cocaine	40	14%	7	280	23%	5	320	21%	5
LSD	34	12%	8	170	14%	7	204	13%	7
Ketamine	33	11%	9	114	9%	9	147	10%	10
Magic Mushrooms	25	9%	10	90	7%	11	115	8%	11
Illicit Opioids	13	4%	11	135	11%	8	148	10%	9
Synthetic Cannabinoids	6	2%	12	51	4%	12	57	4%	12
Precursors	5	2%	13	21	2%	14	26	2%	14
GHB	4	1%	14	39	3%	13	43	3%	13

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Top Five Most Commonly Sold NPS on the Silk Road by time



# Background – NPS

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BZP	1	<1	1 (-)
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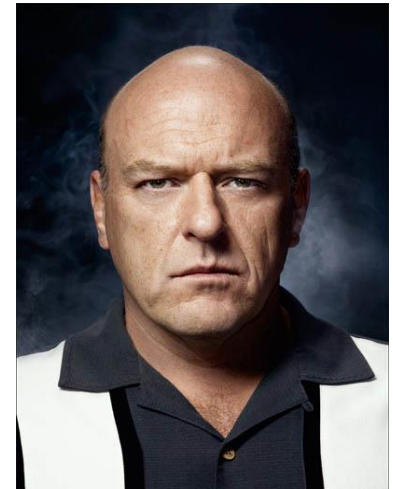
Source: 2013 EDRS REU/RPU interviews



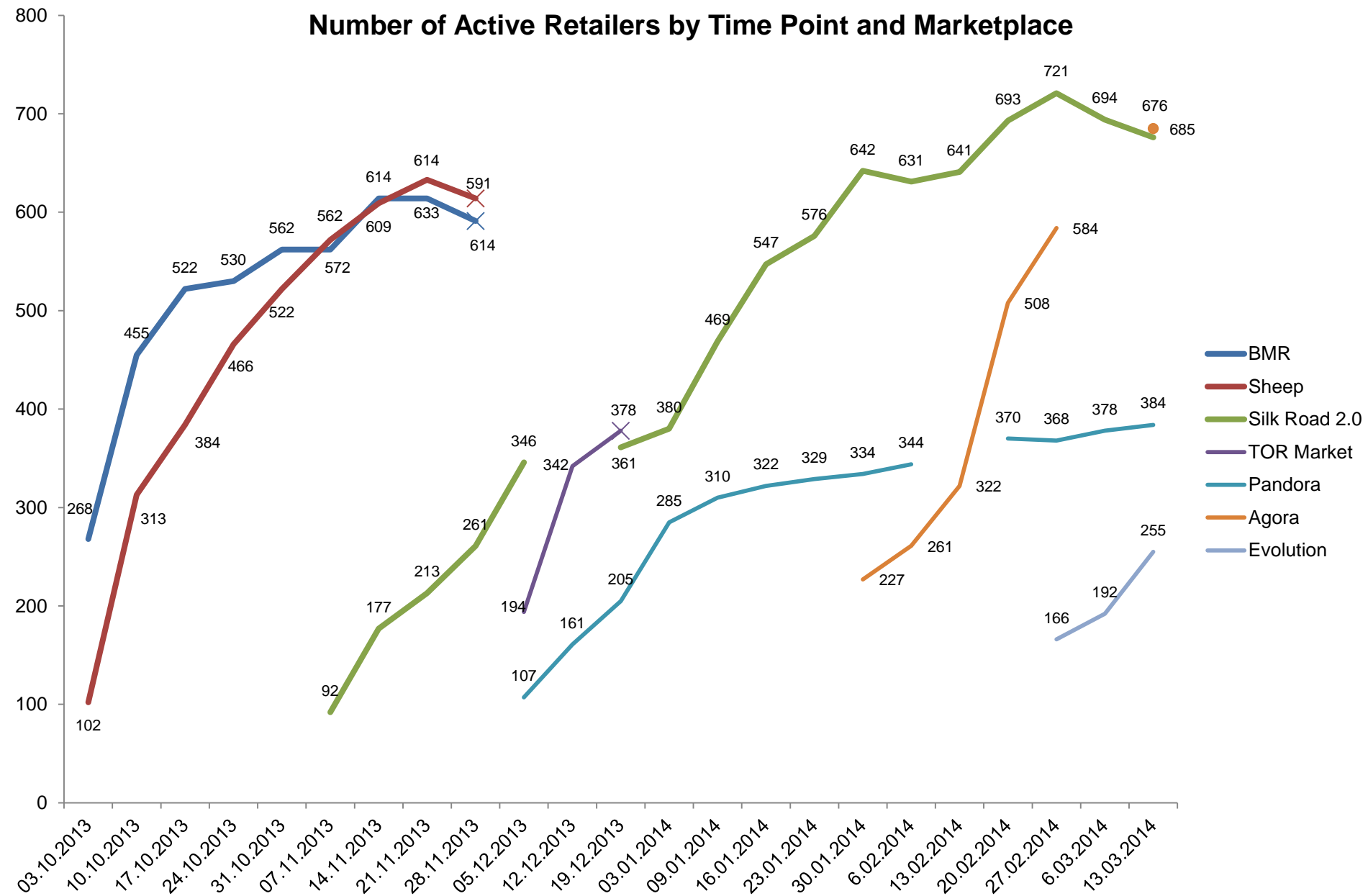
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# Closure of the Silk Road

- October 1, 2013 saw the arrest of Silk Road moderator Dread Pirate Roberts, aka Ross Ulbricht
- At this stage, the arrest appears to be largely due to human error, rather than a fault in the anonymity of the system
- Following the closure, discussions on the Silk Road forums and elsewhere identified backup options and alternative marketplaces
- These alternate marketplaces were monitored weekly and new marketplaces were added as they emerged



# Number of Active Retailers by Time Point and Marketplace



# Total number of retailers by marketplace and substance



Category	MR (n=1456)			Sheep (n=869)			SR2 (n=972)			TOR Market (n=421)			Pandora (n=474)			Evolution (n=277)		
	#	%	Rank	#	%	Rank	#	%	Rank	#	%	Rank	#	%	Rank	#	%	Rank
Cannabis																		
Pharmaceuticals																		
MDMA																		
Cocaine																		
NPS																		
Methamphetamine																		
LSD																		
Illicit Opioids																		
PIEDs																		
Magic Mushrooms																		
Ketamine																		
GHB																		
Synthetic Cannabinoids																		



# Total number of retailers by marketplace and substance

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	#	%	Rank	#	%	Rank	#	%	Rank	#	%	Rank	#	%	Rank	#	%	Rank
Cannabis	352	40%	1	293	34%	2	402	42%	1	150	36%	2	206	47%	1	102	37%	1
Pharmaceuticals	328	37%	2	322	37%	1	352	36%	2	183	43%	1	179	41%	2	96	35%	2
MDMA	188	21%	3	211	24%	3	265	27%	3	149	35%	3	153	35%	3	47	17%	3
Cocaine	160	18%	4	155	18%	4	200	21%	5	74	18%	6	129	29%	5	37	13%	4
NPS	145	16%	5	142	16%	6	201	21%	4	98	23%	4	89	20%	6	27	10%	5
Methamphetamine	145	16%	5	152	18%	5	177	18%	6	85	20%	5	147	33%	4	21	8%	7
LSD	91	10%	7	63	7%	7	125	13%	7	43	10%	7	51	12%	8	20	7%	8
Illicit Opioids	63	7%	10	62	7%	8	100	10%	8	27	6%	8	69	16%	7	24	9%	6
PIEDs	76	9%	8	53	6%	9	40	4%	11	19	5%	10	20	5%	10	9	3%	9
Magic Mushrooms	73	8%	9	49	6%	10	66	7%	9	20	5%	9	20	5%	10	6	2%	10
Ketamine	26	3%	11	40	5%	11	51	5%	10	15	4%	12	24	5%	9	5	2%	11
GHB	20	2%	13	13	2%	12	15	2%	13	16	4%	11	10	2%	12	1	0%	13
Synthetic Cannabinoids	21	2%	12	5	1%	13	29	3%	12	3	1%	13	1	0%	13	4	1%	12

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NPS	145	16%	5	142	16%	6	201	21%	4	98	23%	4	89	20%	6	27	10%	5
Methamphetamine	145	16%	5	152	18%	5	177	18%	6	85	20%	5	147	33%	4	21	8%	7
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Synthetic Cannabinoids	21	2%	12	5	1%	13	29	3%	12	3	1%	13	1	0%	13	4	1%	12

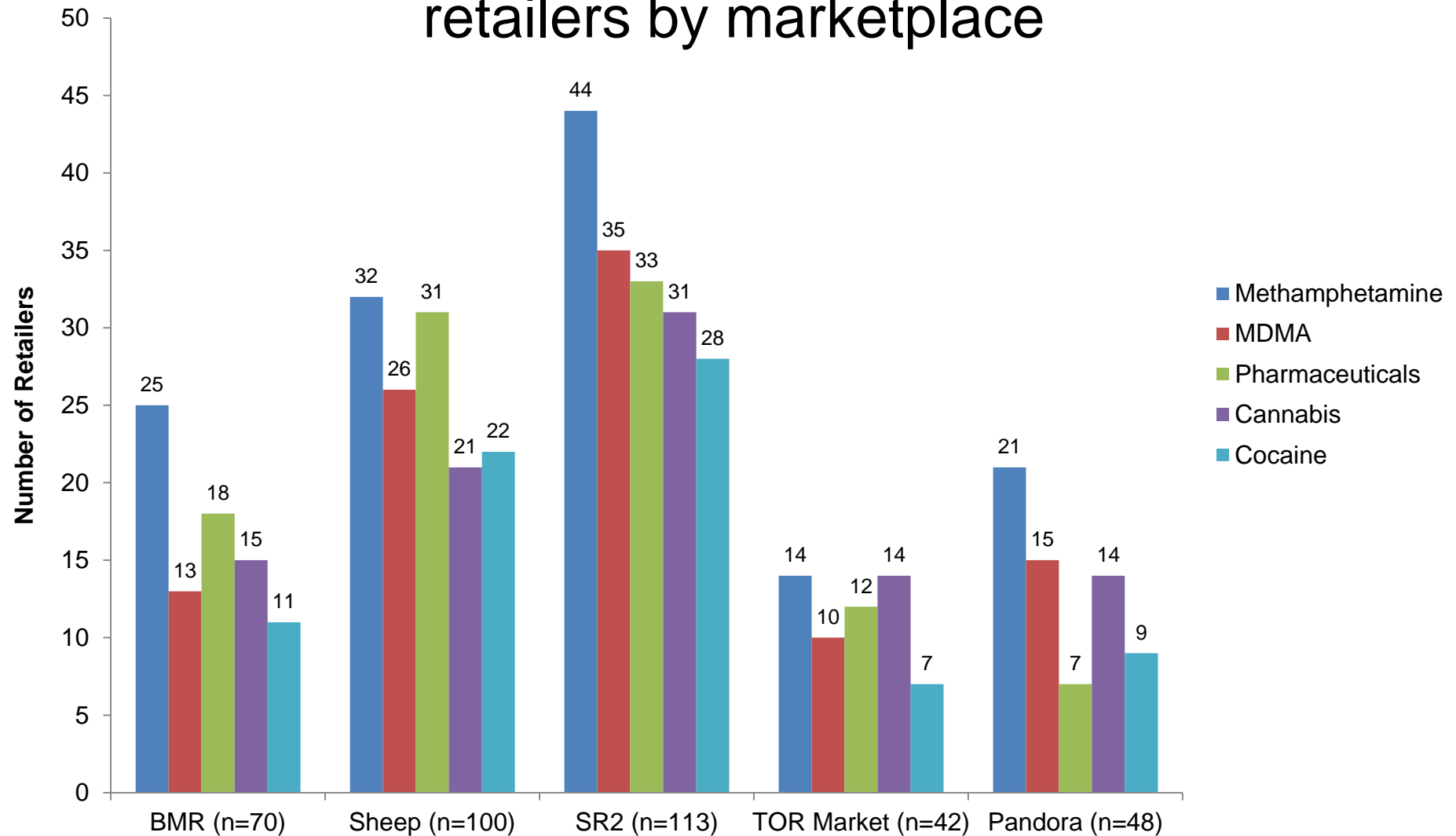
# Top ten available NPS by marketplace

Category	BMR (n=1456)			Sheep (n=869)			SR2 (n=972)			TOR Market (n=421)			Pandora (n=474)			Evolution (n=277)		
	#	%	Rank	#	%	Rank	#	%	Rank	#	%	Rank	#	%	Rank	#	%	Rank
DMT	41	5%	1	22	3%	2	45	5%	2	20	5%	1	22	5%	1	8	3%	2
NBOMe	33	4%	2	21	2%	3	39	4%	3	11	3%	3	18	4%	2	11	4%	1
Methylone	31	3%	3	30	3%	1	37	4%	4	11	3%	3	17	4%	3	2	1%	3
2C-x	15	2%	4	20	2%	4	53	5%	1	14	3%	2	17	4%	3	2	1%	3
MDA	10	1%	6	5	1%	5	18	2%	5	4	1%	5	12	3%	5	2	1%	3
MDPV	8	1%	7	3	0%	8	13	1%	10	1	0%	10	4	1%	10	1	0%	6
Dox	4	0%	10	3	0%	8	14	1%	8	2	0%	6	6	1%	9	0	0%	17
Mephedrone	2	0%	21	4	0%	6	10	1%	13	2	0%	6	7	2%	7	1	0%	6
A-PVP	7	1%	8	2	0%	11	12	1%	11	1	0%	10	8	2%	6	0	0%	17
4-HO Family	4	0%	10	2	0%	11	6	1%	17	0	0%	18	3	1%	13	1	0%	6

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Methylone	31	3%	3	30	3%	1	37	4%	4	11	3%	3	17	4%	3	2	1%	3
2C-x	15	2%	4	20	2%	4	53	5%	1	14	3%	2	17	4%	3	2	1%	3
MDA	10	1%	6	5	1%	5	18	2%	5	4	1%	5	12	3%	5	2	1%	3
MDPV	8	1%	7	3	0%	8	13	1%	10	1	0%	10	4	1%	10	1	0%	6
Dox	4	0%	10	3	0%	8	14	1%	8	2	0%	6	6	1%	9	0	0%	17
Mephedrone	2	0%	21	4	0%	6	10	1%	13	2	0%	6	7	2%	7	1	0%	6
A-PVP	7	1%	8	2	0%	11	12	1%	11	1	0%	10	8	2%	6	0	0%	17
4-HO Family	4	0%	10	2	0%	11	6	1%	17	0	0%	18	3	1%	13	1	0%	6

# Top five substances sold by Australian retailers by marketplace



# Summary

- NPS available on the Silk Road mirrored the most commonly reported NPS used by 2012 EDRS participants
- Alternative marketplaces saw a dramatic increase in the number of active users in the wake of the Silk Road's closure
- Pharmaceuticals appeared to have a slightly increased prevalence over the time period, while NPS appears to have declined
- A higher proportion of Australian retailers offered methamphetamine for sale than what was seen on the Silk Road

# Conclusions – Implications

- Availability rankings of substances on the Silk Road and newer marketplaces mirrored population surveys from Australia and Europe
- Only 4% of the 2013 EDRS sample used the Internet to purchase drugs
- The 2013 Global Drug Survey put the figure at around 9% for Australians, and 11% overall
- Nonetheless, seizures from small weight parcel post appear to be on the increase in Australia, as well as ATS clandestine laboratories

# Conclusions – Looking Forward

- Changes in online availability may thus predict changes in usage patterns
- This data is essential for constructing appropriate, credible and effective harm reduction messages
- Rapid changes in markets and the overall technology (e.g. seizures/closures, Grams, DarkMarket) represent new challenges and call for innovative and proactive approaches to monitoring
- Active monitoring is imperative to see how these marketplaces fit into and corroborate information from other indicators of Australian and international drug markets



# Thank you for listening!

- The researchers would like to thank the Australian Government Department of Health for continued funding of the Drug Trends Project.



Joe Van Buskirk  
National Drug and Alcohol Research Centre (NDARC)  
University of New South Wales  
Email: [j.vanbuskirk@unsw.edu.au](mailto:j.vanbuskirk@unsw.edu.au)  
Web: <http://ndarc.med.unsw.edu.au>