Comprehensive Clustering Methods Comparison Overall Performance Comparison (ARI) Category-wise Performance n=1 Best in Category n=2 BIRCH Average ARI n=3 Spectral Clustering 0.6 MiniBatch K-Means n=3 n=1K-Means 0.5 Agglomerative (Ward) Agglomerative (Complete) n=4 Mean Shift Score 6.0 Agglomerative (Average) DBSCAN (eps=1.0) 8.0 AR DBSCAN (eps=0.7) Gaussian Mixture DBSCAN (eps=0.5) 0.2 **Affinity Propagation** OPTICS 0.1 GSOM GSOM+DSM 0.0 Densitybased 0.1 0.2 0.0 0.3 0.4 0.5 0.6 Adjusted Rand Index (ARI) **Performance by Data Source Multi-Metric Comparison (Top 5)** BIRCH Best from Source Spectral Cluste Average ARI MiniBatch K-Mea 0.6 0.6 K-Means Agglomerative (n=14 0.5 0.5 Score (normalized) 8.0 ARI Score 0.2 0.2 0.1 0.1 0.0 0.0 ARI Silhouette DB (inv) Metrics