

Ecosistemas de Innovación



Madrid
K·node
knowledge-based
innovation ecosystem

UAM

Universidad Autónoma
de Madrid

El papel de las **Universidades** en los Ecosistemas de Innovación

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9a geXi Vf gT 'T 'Ei Xer

B egXZTr

fI E WX' aabi TVEazGeTafXeXaWT' I GXVab_bZÄzH5@tr

9VbfVfgX' T'WX' aabi TVEa 'abWXr

%r Or-ÐhÄr , eXTfr brfXVgpeXfr WXr Jr VXaVT rI r gXVab_bZÄr VbafWXeTfr dhXrgXaXr` , fr eX_Xi TaVT 'Xa 'XfgX` b` Xagb3r

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?bfrfXVgpeXfr` , freX_Xi TagXfrXarXfgbfr` b` Xagbfrfbar_bfrWXr Jr U'b VXaVT ž Jr U'bgXVab_bZÄ ž Jr aTabVXaVT rI r Jr U'b_bZÄrVb` chgTVbaT_r5WX` , frWXr Jr Vb` chgTVÉarVh , agVTrI rcbergT agb r gT` U'Äar 'agXafV T ž Jr YÄ VTr WXr Jr` TgXeTr VbaWXafTWTr I r Jr YÄ VTr Vh , agVTr ZXaXeT ž Jr ` TgX` , gVTrVb` br[XeeT` XagTrcTeTrX_rWXfTeeb_b_rWXrgbWTfrXfgTfrgXVab_bZÄfrI r Jr dhÄ` VTrXr YaZXaXeÄrdhÄ` VTrcbergbWbrX_r` cTVgbrXarX_rWXfTeeb_b_rWXrahXi Tfr` b ÄVh Jr Irl žcbergT agb ž X_r WXfTeeb_b` WX'ahXi bf` TgXeT_Xf"r

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9fgTfr, eXTfrgXaXargT` U'Äarhar` cTVgpreX_Xi TagXrXarX_r,` U'gbrWXr Jr fT_hWzWXr Jr U'b!fT_hWf r WXr Jr fT_hWwZ'gT ž dhXrfhcbaXarhabrWXr_bfrZeTaWXfreXYXeXagXfrXar Jr aabi TVÉarXarahXfgebr VT` chfrl rXarX_rXVbfVfgX` TrdhXrXfgT` bfrVeXTaWb.r Jr VXaVT rU , fVTri 'aVh Jr WTr Jr` XWVaTr 'aV_hl XaWbr!Vb` brfXr[Tr` XaVbaTWb!r Jr` XWVaTrWZ'gT ž TrgbWTr Jr'ai XfgZTVÉarV Ä VTrXar Jr fr WYXeXagXfr, eXTfrWXr Jr` XWVaT ž I rXarZXaXeT_rTrgbWbfr_bfrTfcXVgbrXar_bfrdhXr Jr gXVab_bZÄr geTafYbe` T'X_VbabV` Xagb` ÄWVb"r

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Bgebfrc\TeXfr` hl r` cbegT agXfrfbar_bfr ,` U'gbrWXrgXVab_bZÄfr WXr Jr 'aYbe` TVÉarI r Jr fr Vb` haVTVbaXfrfG 7 ž WXraZXaXeÄrI rVXaVT rWXrWTgof ž Jr aZXaXeÄraYbe` , gVT ž Jr aZXaXeÄr WXrgX_Vb` haVTVÉarI r Jr aZXaXeÄrU'b` ÄWVT` XarWXYa'gi Tr Jr VXaVT rXraZXaXeÄr WXrWTgofr Xa'ZXaXeT_r

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@hl r eX_Xi TagXr Xfr gT` U\Aar X_r\` cTVgbr WXr XfTfr , eXTfr fbUeXr _Jfr V\XaVTfr fbVT_Xfr l r _Jfr [h` Ta\WTWXfXrVT` chfrWXr _JrH5@rXfrharVT` chfrWbaWXr _JrTVgñi \WTW`ai XfgZTWbeTrXar V\XaVTfrfbVT_Xfr l r[h` Ta\WTWXfrXfrWXrXabe` Xr\` cbegTaVT/rcberX]X` c_bžXarX_r,` U\gbrWXr _Jr XVbab` \r l r _JrX` ceXfTžXarX_rWXr _JrcfVb_bZ\žX_rV\XeXV[brl r _JrV\XaVTrcb_\gVTž _JrXWhVTV\Earl r _JrYbe` TV\EarWX_rcebXfbeTWbž _JrVh_gh_eTrXarZ\XaXeT_r_l žXarZ\XaXeT_žgVbfr_bfrTfcXVgbrWXr _Jfr [h` Ta\WTWXfžVbafV\XeTaWbrTWX` , frX_rXYXVgbr dhXr _Jrg_eTafYbe` TV\EarWZ\gT_rg\XaXrfbUeXr X_Jf"r5f\` \f` bž _JfrV\XaVTfrfbVT_Xfr l r[h` Ta\WTWXfrcXe` \gXari`aVh _Jr_eWXr[XV[brX_rcebZeXfbr V\XagV\brl rg\Xab_žZVbrVbarX_r\` cTVgbrVh_gh_eT_rdhXrX_brc_ebWhVXrfbUeXr _Jrc_ebc_VrfbV\XWTW_r cber_brdhXr _Jrha\` Xef\WTWfXrVbai` \XegXrTf\A\XarhaTr\afgghV\Ear dhXrcXe` \gXragXe` XWT_eVh_gh_eT_r l`fbVT_` XagX`Xa`Xfbf`cebVXfbf`WX`\` cTVgbr"r

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?Tr`aabi TV\Ear Xar haTr fbV\XWTW`abr fXr chXWXr`\`c_X` XagT_e_rfb_brVb`br` XebrcebVXfbr X` ceXfTeT_fTharVbafV\XeTaWbrdhXrfXrg_eTgT_rWXrharcebVXfbrdhXrWXUXrZ\XaXeT_e_rcebWhVgbrl r fXeI`VbfrdhXr_XZTarTr_JrfbV\XWTWrcber` XWbrWXrhfhrX` ceXfTf"r9argbWbrVTfbrXfrharcebVXfbr dhXrWXUXrXfgT_e_rUTfTWbrXarX_rVbabV\` \XagbrXargbWTfrfhfri XegXagXf.rV\XagV\WT_žgVab_žZVTž Vh_gh_eT_žfbVT_r_l r[h` TaT`rCbergT_agbž_f`arhaTrfbV\XWTW\WX_rVbabV\` \Xagbž_l`r`arhaTrXVbab` \r WX_r`VbabV\` \Xagbr dhXr _Jr WaT` \VXž`abr [TUE_r`aabi TV\Ear g_eTafYbe` TWbeTr Xar ahXf_g_eTr fbV\XWTW`r

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9ar_bfrcT\XfrWXrahXf_g_ebrXagbeabrT`aZ_bfT]baXfžV\Xagb!rl`ra`be!XhebcXbfrXfrW\A\XaVbageT_e_r XagbeabfrWXr`aabi TV\EarWf_ehc_gi`TrWbaWXrX_rVbabV\` \XagbrdhXrc_ebcbeVbaTr_JrT`VTW\` \r_l r _Jr` \ai XfgZTV\EarV\XagV\WT_rWXrUTfXrabrXfg\A`rc_eXfXagXž` \Xag_eTfrdhXrXarahXf_g_ebrcT\Xf_gbrabrXfg_r gT_e_rV_J_ebrXargbWbfr_bfrfXVgbeXf.rXarZ\XaXeT_rabrXfg_rceXfXagXrXarX_rWVhefbra`VXarX_rWXUT_gXr Z\XaXeT_rfbUeXr`aabi TV\Ear"r?TrH5@rf\Xfg_rTc_bfgT`aWbrYhXegX` XagXrcberVeXTerharXVbfVfgX` Tr UTfTWb`Xa`X_rVbabV\` \Xagb`l`žcbe_gT_agbž`dhX`gXaZT`haT`eX\XeXaVT`T`_J`TVgñi`WTW\X` Ž8Žž`r dhXrTl`hWXrTr_JfrX` ceXfTfrVbafb_WTWf_r_l r_Jfrf_gT_e_gcfrTrcebWhV`erhaTr`aabi TV\EarWXrT`gbr \`cTVgbr"r9agXaW\` bfr _Jr`aabi TV\EarVb` brharcebVXfbrXarX_rdhXrX_rWXfTeeb_b`rX` UebaTe`b`br \a`WT_rcebi` \XaXrWXr_bfrTZXagXfrfh`a\` Xef\WTWXfžV\XagbebrXr`a`f`g`gh`g`b`f`WXr`a`i`XfgZTV\Ear`žXgV`l`rdhXr fX`WXWWT`a`T`_WXfTeeb_b`W\X_rVbabV\` \Xagb`l`T`_J``ai`XfgZTV\Ear`U`_f`WT`l`Tc`_VTW`r

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&fOr9arghrbc\āĒāž—JfrX` ceXfTfrXfcTĒb_JfrgXaXarhar` bWk_brV_JebrWkr\āabi TVĒā3r
—DhĀ'bc\āTf` WK_VbabV\` \Xagb`YebagXeT3r

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9_rVbabV\` \Xagb`YebagXeTrXfrXfXaVt_žT_rVhT_rdhXr_brXfrX_rVbabV\` \Xagb`agXeWfVc_āTe`rFbar
_bfr`_hZTeXfr` \Xabfr`Xkc_b_eTWbfr`I_ž`T_r`TWAgeTeabfr`Xar`X_bf_ž`XaVbageT`bfr`X_X` \Xagb`fr
Vb`c_XgT` \XagXrabi`XWbfbf_ždhXrcXe` \gXarZXaXeTerVbabV\` \Xagb`Wfehcg\i`bžl`TrdhXrXfrWVA\`r
ZXaXeTe\āabi TVĒā`f\fb_b`fX`XfghWT`I`T`UbeWT`_b`I`T`VbabVWb`r

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9_rVbabV\` \Xagb`YebagXeTrabrXfrT_ZbrTr`brdhXrXarZXaXeT`rfXrWkWdhXrahXfgeTr\āWhfgeT`r`T_r
\āWhfgeT`žabe`T`_`XagXž`ThadhXr[`TVXr\āabi TVĒā`ž`_JrfhX_XrUTfTerXarX_X` \Xagb`frVXagVTrbr
gXab`Ē`Z`VT` \XagXrVbafb`_VT`Wbfr`r`rXarXfgXrfXagWb_ž`_Jrc`TegVc`TVĒarWkr`_JrHa\`Xef`VT`W`XarXfXr
ceb`VXfbrf`Xri`h`X`_XrXfc`XVT`_` \XagXrf\āZh`_J_e`r`X_rVbabV\` \Xagb`YebagXeTrWkr`g`b`r`T`dh`X`_brdhXrXfg`r
Xar`_` \U`g`b`fr`W`k`f`v`b`ab`v`w`b`f`r`X`a`g`e`X`r`W`f`V`c`_ā`T`f`r`X`f`r`T`_Z`b`r`d`h`X`r`W`V`A`_` \XagXr`b`r`i`T`r`c`b`W`k`e`r`Z`X`a`X`e`T`e`h`a`r
` \X`V`T`a`f` `b`r` \W`k`r`c`e`b`W`h`W`Ē`a`r` \ā`W`h`f`g`e`T`_r`V`b`a`r` \ā`X`e`V`T`_ž`d`h`X`r`i` \T`J`T`r`T`r`i`X`_b`V`W`T`W`r` \W`k`r`V`e`h`V`X`e`b`r`c`b`e`r
g`X`e`l`g`e`b`f`r` \X`a`r`_b`f`r`d`h`X`r`f`X`r`f` \X`a`g`X`r`V`Ē` `b`W`b`r` \X`a`r` \ā`abi`TVĒā`r` [`T`I`r`d`h`X`r`c`T`e`T`e`f`X`_ž`e`X`c`X`a`f`T`e`ž`
T`W`X`a`g`e`T`e`f`X`_ž`X`k`c`_b`e`T`e`ž`[`T`I`r`d`h`X`r`[`T`V`X`e`r`c`e`h`X`U`T`r`i`r`X`e`e`b`e`r`l`r`X`f`b`r`X`f`r`h`a`r` \g`ā`X`e`T`e`b`r` `h`l`r`g`k` \b`r`W`k`r`_J`r`
_ž`8`_ž` \W`k`r`_J`r` \ā`i`X`f`g`Z`T`V`Ēā`r` 9`f`b`r`e`X`d`h`X`e`X`r`a`b`r`f`b`_b`r`h`a`r`X`f`c`_ā`g`h`r` \ā`abi`T`W`b`e`r`f` \ā`Zh`_J`e`ž`f` \ā`b`r`
!b`U`i` \T` `X`a`g`X`!`g`T` `U` \ā`ā` \W`k` [`X`e`e`T` ` \X`a`g`T`f` \W`k` \ā`T`a`V`T`V`Ēā`c` \N`U`_V`T`f`i` `c`e` \T`W`T`f`"r

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' rOf—DhĀr`XrYT`gTrTr`_JrXfgeTgXZTrWkr\āabi TVĒarWkr`_JfrX` ceXfTfrcTeTrTWXWkrT_r
VbabV\` \Xagb`YebagXeT3—G\āXa`V`_Jeb`_Jf`X` ceXfTf`X`_` bWk`_b`Wk`\āabi TVĒā`TU`XegT3r

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9`f`c`T`Ē`T`_ž`Vb` `c`T`e`T`W`b`r`V`b`a`r`_b`f`r`c`T`Ā`X`f`r`W`k`r`f`h`r`X`a`g`e`a`b`r`X`V`b`a`Ē` `W`b`r`l`r`f`b`V`T`_r`X`f`r`h`a`r`c`T`Ā`r`c`b`V`b`r
\ā`abi`T`W`b`e`ž`d`h`X`r`ā`i` \X`e`g`X`r`c`b`V`b`r`X`a`r`ā`abi`TVĒā`r`l`r`d`h`X`r`X`a`g`X`a`W`k`r`c`b`V`b`r`_J`r`ā`abi`TVĒā`r`[`T`I`r`h`a`T`r` `T`_J`r`
\ā`g`X`e`c`e`X`g`T`V`Ēā`r`W`k`r`_b`r`d`h`X`r`X`f`r`_J`r`ā`abi`TVĒā`r`_ž`c`h`X`f`r`T`r` `X`a`h`W`b`r`f`X`r`V`b`a`f` \W`k`e`T`r`d`h`X`r`X`f`g`r`i` \ā`V`h`_J`W`T`r`
f`b`_b`T`_J`_V`T`c`T`V`W`T`W`V`e`X`T`g`i`T` \W`k`_J`f`c`X`e`f`b`a`T`f`"r

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?b`f`r`c`T`Ā`X`f`r`W`k`r`X`a`g`e`a`b`f`r`T`a`Z`_b`f`T`]b`a`X`f`r`l`r`V`X`a`g`e`b`X`h`e`b`c`X`b`f`_ž`l`r`T`_Z`h`a`b`f`r`c`T`Ā`X`f`r`T`f` \g`V`b`f`_ž`d`h`X`r`
_W`k`e`T`a`r`_b`f`r`c`e`b`V`X`f`b`f`r`W`k`r` \ā`abi`TVĒā`r`_ž`g`X`a`X`a`r`V`_J`e`Ā` \ `b`r`d`h`X`r`[`T`I`r`d`h`X`r` \ā`V`e`c`b`e`T`e`T`_r`c`e`b`V`X`f`b`r`
\ā`abi`T`W`b`e`r`X`_r`X`_X` ` \X`a`g`b`r` \W`k`r`Z`X`a`X`e`T`V`Ēā`r` \W`k`r`_V`b`a`b`V` \X`a`g`b`r`X`f`r` \W`k`V`e`ž`V`b`a`f` \W`k`e`T`e`r`d`h`X`r`_J`r`
c`T`e`g`V`c`T`V`Ēā`r` \W`k`r` \ā`i`X`f`g`Z`T`W`b`e`X`f`r`X`r` \ā`i`X`f`g`Z`T`W`b`e`T`f`r`X`k`c`X`e`g`b`f`r`X`a`r`X`_r` \W`k`f`T`e`e`b`_b`r` \W`k`r` \W`k`T`f`r`

ZXe` \aT_XfrUTfTWbfrXarX_rVbabV\` \XagbrYebagXeTrXfrXfXaVT_rXarX_rcebVXfb"r8XrT[\rdhXzXar
XfgbfrCt\XfzX_rZeTWbrWkrWbVgperabrfb_brXfg_r` hl rVbafWKeTWbzf\abrdhXr\av_hfbrchXWrfXer
har eXdhV\gbr TW` \aVgeTgi brXarX_rWkfTeeb_brWkr\`aabi TVbaXfrfcebWhVgbrlrfXeI \VbfrWkr
VTe,VgXe\`aWhfgeT_r

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BgeTrYe` TrWkrTWXWkrT_rVbabV\` \XagbrYebagXeTrXfrXfgTU_XVXerha \TWkrWkr\`aabi TVE`arXar
Xagbeabfrl rXVbfVgX` TfrYhXegX` XagXrVXagVbfrzVb` brXarX_r7T` chfrWkr9kVX_XaVTrWkr_Tr
H5@rWbaWkr_bfrX` c_XTWbfrWkr_TfrX` ceXfTfrVb_TUbeTarXfgeXV[T` XagXrVbar_bfr\ai XfgZTWbeXfr
l_r_bfrVXagebfrWbaWkrfXrZxaXeTrVbabV\` \XagzWbgT`aWbrTf\`Tfrhfrc ebWhVgbrlrfXeI \VbfrWkrhaTr
YhXegX`haT`VTcTVWTW\`aabi TWbeT`` hl `WfchcgI`T`I`_ZTWT`T`_J`VXaVT`r

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7b` brWtgdz_rHa\` Xef\TWw5hgfab` TrVX_XUeTrTr_br_TeZbrWkrharTEbr` ,frWkr* \$\$rVbageTgbrWkr
geTafYXeXaVTr Wkr_r VbabV\` \Xagzr Wkr` Z8Zz_r` fXVgper cebWhVgi b"r ?bfr` XVtaV` bfr Wkr
geTafYXeXaVTrWkrVbabV\` \Xagbrl rWkrVb_TUbeTVe`ar\`aabi TWbeTrWfchcgI` TrXageXr_bfrVXagebfrWkr
\ai XfgZTVe`arl rX_rgX]Wbr\`aWhfgeT_rl TrfXrc ebWhVXarXar9fcTEtZrcXebrfXrc ebWhVXar!Vb` brWkrVAr
Tagxf!`T`haT`XfVT_r`aYXebe`eXfcXVgb`T`_b`dhX`Xf`ahXfgeb`Xagbeab`B 789"r

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5WVbaT`_ XagXzXaVbageT` bfrcbVTr\ai Xef\E`arl rfhUi XaV`E`arcN_U_VT.rX_rC 6rdhXrWkWWT` bfrTr
Xfgbfr`_ U\gbr Xar 9fcTE`TrXfg_rfZaVWTgi T` XagXrcber WkUT]br Wkr_Tr` XWTrWkr_TrHa`E`ar
9hebcXT`r9fgbrfchbaXrdhXzeXfcXVgbrTr_TfrXVbab` \Tfr`_AVXeXfrWkr_TrH9z9fcTE`TrXfg_r` hl r
eXmT`ZTWz_r_bfrXYXVgbrWkrXfgTrfVghTVe`arfXrTceXVTe`bargT`agbrXar_TrVeV`VfrXVbaE` \WTrWkr
&\$\$- #&\$% rfl rXar_TreXVhcXeTVe`arcbfgXe`berTr_Tr` V` TzVb` brT[beTrXar_TrVeV`VfrVbi W%`rWkr
&\$\$&\$r Xar X_r` b` Xagbr Xar dhXr_TfrXVbab` \Tfr`abrXfg_rarfbcbegT`Wfr`cber_Tr`aabi TVE`ar
WfchcgI`Tzrbar` hl rYe,Z\XfzlrWkcXaWkarYhXegX` XagXrWkrVbaWVbaT` \XagbrXkgXeabfrdhXr
chXWka`eXfh_gTe`\` ceXi`V`U`_Xf`r

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(rOr8Xr_bfrbgēbfrfXVgēXfreX_Xi TagXfrcTeTr_Irha\ Xef\WTWb-Wh, _Xfrfbar_bfrdhXrXfg, ar eXVU\XaWb` , f`agXeAf3r

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7bareXfcXVgbrTr_IrVb` chgTVĒarVh, agVTž_IrH5@rgXaXrWfWkr[TVXrWbfrTĒbfrharTVhXeWbr XfgēTgAZVbrVbar6@dl rX_r7F 7rcTeTrX_rWfTeeb_brWkrXfdhX` TfrWkrVb` chgTVĒarVh, agVTfUeXr _bfrfVfg` TfrWkr6@dl rfXrXfg, rcebZeXfTaWbrfZaVWTg\ T` XagXžf\XaWbrhabfWkr_bfrVT` chfrWkr eXVXeXaVT`Xa`XfgT` TgXeT`T`a\X_aTVbaT_r

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9arX_rXagēabr\WhfgeT_r rX` ceXfTeT_rfXr[TU_IrWkrVb` chgTVĒarVh, agVTžfrU\Xarfhrhg\WTWf eXT_rXarX_rXZbVbrVbafWkebrdhXrabrXfg, r` hl rWfTeeb_IWT_rTNa"r9ar9fcTĒTr_IrTc_VTVĒarWkr_Ir Vb` chgTVĒarVh, agVTTrTra\X_rX` ceXfTeT_rXfg, r\ \gTVTrTrT_ZhaTfrTc_VTVbaXfrXarX_r,` U\gbr YaTaVXež` gXvab_ĒZVbr lr V\agVb\Xar XfgXr N_g\ br Xar fXVgēXfr Vb` br 6\yTe` Tž ATabgXvab_bZĀž8XfTeeb_brWkr` TgXeT_Xfrlr5XeBa, hgVb"r9fgXrXfrharUhXarXjX` c_brWkr_Ir aXVfWTWkVb` U\TeVbabV\ \XagVba`WfTeeb_b`aWhfgeT_r

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) rOR-ĐhĀrb_WghWkrXarX_r,` U\gbrWkr_Ir\ai XfgZTVĒarI_r_Ir\abi TVĒarXfg, ar[TVXaWbr _Jf`X` ceXfTf`T`_J`Ha\ Xef\WTWb-9a`dh`A`g` Tf`Xfg, a` , f`agXeXfTWbf3r

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9_r cTeTWZ` Tr Wkr eX_TVĒar ha\ Xef\WTWX` ceXfTr fXr [Tr \ai XegWbr Xar_bfr N_g\ bfr TĒbf"r 5agXe`be` XagXrfXrTVhWĀTrTr_IrHa\ Xef\WTWfb_V\gTaWbrX_rVTg, bZbrWkrVTcTVWTWfIrl rWkr_AXTfr Wk`ai XfgZTVĒa"r

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9fXrcTeTWZ` TžVb` brWZbžfXr[Tr\ai XegWbrlrT[beTrXfrharcTeTWZ` TrWkr\abi TVĒarTU\XegT"r 8XfWkr_IrH5@rfXri X[\h_IarUT]br_IrWkAb` \aTVĒarWkrcebZeT` TfrWkr EXgpf .r_IraWhfgeTlr_rJfr \afgghVbaXfr_XZTarTr_Irha\ Xef\WTWfVbarhareXgž`VbarhaTrYhXegXraXVfWTWfbrVbarhaTr cebU_X` ,gVTrdhXra\X_bfra\X_r` XeVTWbrXfg, arXarWfcbfVĒarWkreXfb_iXerXarXfXr` b` Xagž` cbedhXrfXrgeTgrWkrVbabV\ \XagbrYebagXeT"r9fbfrTZXagXž`TVhWkarTr_IrHa\ Xef\WTWlrVb` br cTfbr\W\T_rfXrYe` TrVbarX_bfrharA85rcTeTrfT_jTZhTeWter_IrVbaY\WkaVT_WTWfKagXaW\XaWbr dhXr_IrHa\ Xef\WTWfXrhaTr\afgghVĒarC_NU_VTrI žcbergTAgžraXhgeTlrVbaYTU_XrWfWkrX_rcHagbr

Wkri VgTrWkr_IrcebqWWEarWkr'a Ybe` TVE'ar'aWhfgeV`lzi rc bfgXebe` XagXrc_IagXTarfhraXVxfWtWf
YebagXeTrI r_IrH5@rUhfVTrWkagebrWkrfhfr_IUbeTgbebfz`VXagebfrI rXdh'c bfrWkr'ai XfgZTVE'ar
dh'Aa'chXWk'eXfcbaWkeT'XfX'eXgb"r

r

CbfgXebe` XagXrfXrYe` TarVbageTgofrT_rT` cTebvWk_rTegVh_br, ' rWkr_Ir?BHzTegVh_br dhXr
cXe` \gXr_IrVbageTgTVe'arXageXr_Irha\ XefWtWfXr'a fgdhVbaXfrI rX` ceXfTfrWkfTeeb_bfrWkr`Z8Zr
f'a'geTUTf`TW` \a'fgeTgi Tf'a\Wk_IrVbaXf`afgdhVbaT_Xf"r

r

* rOR-8XrdhAr` TaXeTrfXrchXWkarVTaT_mTer[TVTrX_r` XeVTWbr_Ifr'ai XfgZTVbaXfrWkr_bfr
VXagVWbf`Wk_Ir'ha\ XefWtWf\ab`i`XaXa'c_IagXTWf'cbe`_Jf`X` ceXfTf3r

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?TrH5@rWfcbaxrWkriTebfr` XVTaVf` bf"rHabrWkrX_bfrXfr_IrZXaXeTVe'arWkrCtgagXfz`har
`XVTaVf` brV_fVbrdhXrfXrhg\mTrYeXhXagX` XagXr`rBgebrXfr_IrTfVfgaVTrWkr ahXfgebfr
`ai XfgZTWbeXfr Xr`ai XfgZTWbeTfr Tr Xk[\VWbaXfr` \aWhfgeT_Xfz` VbaZeXfbfz` VbaYeXaVTfz`
j beY[bcfz` XgVAgXeTz` bfgeTaWbrfhfrTi TaVXfrVXagVWbfz`brfhrVTcTVWtWfWkrWkfTeeb_brWkr
gXVab_bZAr"rHargXeVXe` XVTaVf` brI rWkre_cWbrVeXV\` \XagbrXfr_IrVeXTVe'arWkrX` ceXfTfrUTfTWf
XarX_rVbabV\` \Xagbrf967fz`WbaWkz`TrcTegerWkrharWkfTeeb_brVXagVWbrceb` XgWberI rVbar
`ai XefbeXfr dhXr TchXfgJar cber XfgofrWkfTeeb_bfz`fXrVbafgdhI Xr haTrfbVXWtWf` XeVTagz`
eXVbabVWTrYe` T_ XagXrTrgbWbfr_bfra\ X_Xfrfgj` U`Aarcber_IrTW` \a'fgeTVe'arcNU_VTfz`dhXr
cXe` \gXrT_bf`ai XfgZTWbeXf`ai b_hVeTefX'Vb` bfbVbf'I`Xa`_J`ZXfgEa`Wk_Ir`X` ceXfT"r

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9arcTeT_X_brXfg, argbWftr_IfrTWbaXfrdhXreXT_mT` bfrXar_IrHa\ XefWtWfrcTeTri VU\mTez`cbaXer
Xari T_berX_rVbabV\` \XagbrdhXrZXaXeT` bf/rTrWkfgTVTerhaTrTVgi`WtWdhXriXa\` bfreXT_mTaWbr
`XafhT_ XagXrWkfWkr[TVXr` , frWkrWbfrTEbfz`_bfr` [aabH5@RGT`f`rXar_bfrdhXr_IrH5@r](#)
ceXfXagTr_Ir`aabiTVe'ar dhXrXfg, reXT_mTaWbrXargX` Tfr` hI rXfcXVAVWbfz`cTeTr_brVhT_rfXr
Vbai bVTrTrahXfgebfr` X]beXfrXkcbaXagXfrWkr'ai XfgZTVe'ažTr_IfrZeTaWkfrX` ceXfTfrI rgt` U`Ar
Trcl` XfrXr'ai XefbeXfz`Tr'a fgdhVbaXfrcNU_VTfz`rdhXrfXrWkWWTarTrXfbfr,` U`gof`/I rXrXfgTU_XVXr
TfA` har Wk_bZbr TrgeTi A`frWkrXageXi VgTrfXageXr_bfrcTegVcTagXfz`_brVhT_r`cXe` \gXrZXaXeTer
` h_gdhWkVbagTVgofz`dhX'chXWka`_Xi TeT`TVhXeWbf`Wk`geTafYeXaVT"r

r

5Wk` , fzeXVXagX` XagXz`[X` bfrchXfgofrXar` Tev[Tr_bfr`7TYAfrWkr_Ir`aabiTVe'a`z`dhXrfXr
eXT_mTarVtWtrWbfrfX` TaTfz`I rXar_bfrdhXrX_rVbVbfrXrcbaXfbUeXrX_rVbabV\` \Xagb.rabrgT`agbrWkr

Tc_VTU\WTWfWk_r` V` bzf\abrWkrY_bfbYArWk_rVbabV\ Xagorl rWkr_Tr\abi TVEa /XfrWkVerWkr
VhXfgbaXfrdhXrchXWkarabrgXaXerharWkfTeeb_br\` XWTgpcXebrdhXrfbarXfXaVT_XfrVb` br
,` Ugbf`Wk`eXYXkEa`l`W_bZb"r

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5ra\ X_rWkrXfghWtagXfzcbax` bfr` hv[brX` cXEbrXareXYbemTerfhrTVgghWfWkr\abi TVEarl r
X` ceXaWk` Xagor dhXr gT` UAr TcbegTr har Xa_IVXr Vbar X_r` haWbr X` ceXfTeT_r l r Wkr_Tr
\abi TVEarVb` br_brWk` hXfgeTrX_rZeTar\` ch_fbrWkr\`a VTg\ TfrdhXrXarXfgofr` b` XagofrgXaXr
H5@R9` ceXaWk"r

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9fr` \` cbegTagXr` XaVbaTer gT` UAr X_r` CebZeT` Tr Wkr : b` Xagor Wkr_Tr` GeTafYXeXaVTffir ?Tr
geTafYXeXaVTzVb` brfXr[TrWw[brl TzXfr_TreXfchXfgTrWfWkrX_rVbabV\ Xagorl rWkfWkr_bfr
VXagobfrWkrVbabV\ XagorVXagVb`z Tr_bfreXgofrdhXr_TrfbVXWTWc_TagXTrTgeTi AfrWkrfhfr
YafgghVbaXfrl rX]Wbr\`a WhfgeT`_zreXfcbawXaWbrTgeTi AfrWkr_bfrVbageTgofrdhXrcbfV\gTrX_rTegR
,` rWkr_Tr?BH"r8XfWkr_TrH5@rYb` XagT` bfrXfgofrcebZeT` TfrVb!YaTaVTaWbrcebl XVgofrfaV_hfbr
T_VTamTaWbr[TfgTr_Tr` \gTWkrfhrceXfhchXfgobzWkrYe` TrdhXrcTeTr_TrX` ceXfTrfXTrgoWTi Ar
,` fr\agXefTagXrXagXaWkerdhXri TrTrcbWkrTWXWkrT_rVbabV\ XagorZXaXeTWbrXar_TrH5@rTr
geTi AfrWkr` XVTaV` brWkrgeTafYXeXaVTzVbarhaTrai XefVEarXVbaE` VTrVb` c_X` XagTWrcberTr
cebcT`H5@"r

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9fgXrXfrharcebZeT` Tr` hl r\abi TWberWfWkrX_rchagorWkr\`fgTrWk_rYb` XagorWkr_bfrcebVXfbfrWkr
geTafYXeXaVTzrXfg_rWTaWbreXfh_gTWbfrXkgeTbeWaTe\bf.r_TrgTTrWkrAk\gbrX_rTEbrc TfTWbrXfghi br
VXeVTaTrT_r`)i rWkr) %fVb_VghWkrWkrcebl XVgoXe` \aT` bfrYe` TaWbr%+rVbageTgofbz_brVhTr
fhcbaXr har WTgor eX_Xi TagXr l r Xar XfgXr fXagWbr VbafWkE` bfr dhXr X_r`cebZeT` Tr Xfr` hl r
abi XWbfb`l`Xk\gfb"r

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GT` UAr XfgT` bfrX` cXmTaWbr TrWfXE`Ter haTrVbai bVTgbeTr\agXeaTrWkrVb!YaTaVTVEarWkr
VbVgpeTaWbfr TrgeTi Afr Wkr har cebZeT` Tr H5@r Wkr VbVgpeTWbfr \aWhfgeT`_Xf.r.cTeTr` hv[Tfr
X` ceXfTfreXfh_gT\` cbegTagXrfl rXarX_rYhgebrceE`k\` brVTWtri Xm_brfXe_r` ,` fkrbWkrVbagTerVbar
X` c_XTWbfrVbarVbabV\ Xagor` hl rXfcXVAVbr l rVbarYe` TVEarWbVgpeT`_zrYe` TWbfrXarX_r
,` Ugbf`Wk`_VbabV\ Xagor`YebagXeT`Xa`_J`ha\`Xef`WTWkr

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9ar9fcTÉTr [Tr [TUWbrcbVTrgeTWVÉarlrfXr [TrWTWbrcbVTr\` cbeJTaVTrTr_JrceXfXaVTrWkr
WbVgpeXfrXar_JrVaWhfgeTžcXebrXar_Jr` XWWTxardhXr_JrVaWhfgeTrfXri Tr [TVXaWbrVaabi TWbeTri Tr
gp` TaWbr` , freX_Xi TaVTrVbagTerVbarcXefbaTfrVbarXfTrYbe` TVÉarl rVTcTVWTVwfVaZh_JerWkr
Vai XfgZTVÉarTc_VTWtžVb` brfbar_bfrWbVgpeXf"r8XrXfgTrYbe` TždhXeX` bfrVb!YaTaVTerX_r
cebZeT` TrWkrWbVgpeTWbrVaWhfgeT_rcTeTrdhXrTr_JrVaWhfgeTr_XreXfh_gXr` XabfrZeTi bfbrcbWkr
cTegVcTeXa`XfgX`gcb`Wk`cebZeT` Tf"r

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+fOr9arX_rVTfbrWk_rccebZeT` TrYb` XagprWkr_JrgeTafYXeXaVTž-dhAarfb_VVgTrXfTrfhUi XaVÉarbr
YaTaVTVÉažX_VXagVb`b`_J`X` ceXfTž

r

?bfr_JUbetgpebfrgXaXarl TrVTcTVWTVwfcTeTr_XZTerTr_JrX` ceXfTžXfgT_U_XVXeW\`_bZbfrVaWT_XfrXr
VaV_hfbrYbe` h_JerceVaVc`bfrWkrTVhXeWbrl rceX!VbageTgpf"r9arXfgXrVTfbrXfrX_rVa`i XfgZTWberdh Xar
fb_VVgT`_J`fhUi XaVÉa`icTeT`X`cebl XVgp`Wk`geTafYXeXaVT`cebchXfgp`cbe`_J`X` ceXfT"r

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7hTaWbr abr fhVXWkr Xfgpž`_br dhXr [TVX` bfr Xfr ceXZhagTer Tr ahXfgebfr`vai XfgZTWbeXfr Xr
Vai XfgZTWbeTfrVh`_rXfrfhrVbabV\` XagprVaabi TWberl rXardhArZeTWbrWkrWkfTeeb`_brl r` TWheXm
fXrXaVhXageTrXfgXrWkrVTeTrTrfhrWfcba`U`_VTW`Xar_JrfbVXWTVfVbagT` bfžXar_Jr` haWTVÉarWkr
_JrH5@žVbarX_r75 G97rf7XagebrWkr5cbl brTr_Jr aabi TVÉarl rGeTafYXeXaVTrWkr_r7babV\` Xagpr
dhXrfXrWkWTrTrTcbl TerX_rWkfTeeb`_brWkr_JrVaabi TVÉarTU`XegTrcTeTr_JrUñfdhXWTrWkrfbVbfr
VafgghVbaT_Xfrl rX` ceXfTeT`_XfžWkrYbe` TrdhXrfXrchXWtar_bZeTerTVhXeWbfrUXaXYWbfbfrcTeTr
T` UTf`cTegXf"r

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r

9ar`_br dhXr eXfcXVgTr Tr`_bfr WbVgpeTWbfr`VaWhfgeT`_Xfž`Wkr` b` Xagpr abfr Tcbl T` bfr Xar_Jfr
Vbai bVTgpeTfrWkr_@`VaVgXebrl rWkr_Jr7b` haWTVWkr@TWéWkrXar_JfrdhXrahXfgebfrZehcbfrWkr
Vai XfgZTVÉar cTegVcTar WkfWkr [TVXr T`_Zhabfr TÈbf"r 8Xr [XV[bž`abr Xfr`VaYeVhXagXr dhXr
WkgXe` VaTWbfr VbageTgofr Wkr`geTafYXeXaVTr Vbar`X_r`fXVgper`VaWhfgeT`_r`cebi XaZTar Wkr`_Jfr
eX`_JVbaXfr XfgT_U`XWTVfr Tr`geTi`Àfr Wkr`_Jr`eXT`_mTVÉar Wkr WbVgpeTWbfr`VaWhfgeT`_Xf"r`@hV[Tfr
X` ceXfTfr`aXVXf`gJar`geTUT]bfr Wkr`Vai XfgZTVÉar`hlr`XfcXVAVbfr`cebc`bfr Wkr`_Jr`XgTcTr
Vai XfgZTVÉarWbVgpeT`_l`rdhXeXardhXr[Tl Tr]Èi XaXfrdhXrfXr\` c`_dhXarXarXfbfrWkfTeeb`_bfrTr
`XWb`l`_J`eZb`c`_J`nb`r

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, rOF-DhArchXWkr[TVXer_Jrha \ Xef\TWcTeTrdhXr_bfrVXagAVbfrfXr` bi \WXarbrl fU\WXar` , f'fh'cebc'b'cebl XVgb'b'WexVgT` XagX'i TI Ta T`_J`X` ceXfT Vbag, efX_b3r

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?Tr ha\ Xef\TWf fXr TfXagTr fbUeXr gexfr c\Jexf.r _Jr WbVXaVTr Xar XWhVTVEar fhcXebef _Jr ZXaXeTVEarWX_rVbabV\ Xagprcebc'brWkr_JrTVgi \TWf'ai XfgZTWbeT/rl_rJgeTafYXeXaVTrWkrXfXr VbabV\ Xagz'cebc'VrWkr_JrTVgi \TWf'aabi TWbeT"r9fgbfrfbargexfrc \JexfreXVbabVWbfrfrcber_Jr_XZV_JVEarl rcber_brgJagprXfg, arXargbWbfr_bfrcebVXfbfrWkrXi T_hTVEarWX_rcXefbaT_rWbVXagXrXr'ai XfgZTWbe'fC8 l'r

r

9_rgXexerc\Jez_JrgeTafYXeXaVTrWX_rVbabV\ Xagz'Xfg, rX` XeZ\XaWbrVbarYhXemTrXar_bfrN_g\ bfr TEbf/fcehXUTrWkrX_brXfrdhXr[TVXrWbfrTEbfz'cberce\ XeTri XnrX_r@'a'f'gXebrc_JagEX_rfXkXa'br Wkr'aabi TVEarlr'geTafYXeXaVTz'cTeTrTdhX_JrTVgi \TWf'Wkr'geTafYXeXaVTrcTegVh_Je` XagXr'agXafTrfTeTr_JrTVgi \TWf'Wkr'ai XfgZTWVEaz'lTrfXri XaXrXi T_hTaWbrWfWkr[TVXrWAVTWfz' [TU\XaWbrXfgbr` bWVWVWbr` hlrfZaVWTgi T` XagXr_JrccebWhWVEarVXagAVTrXarahXfgebrcTf'f' X_rC8 rfXrb` XgXrTrhaTrXi T_hTVEarXkgXeaTrl'z'f'YbUgXaXrhareXfh_gJWbrcb'f'gi bzfXr_XrVbaVXWkrhargT` brWkr'aabi TVEarl'geTafYXeXaVTz'dhXr\ c_VTrgT` U\AarharVb` c_X` XagbreXgeUhg'i br Vbafb_VTWb"r

r

?TrcbfWVEarlri bVTVEar cXefbaT_rWX_rC8 rgT` U\AarXfr\ cbeJtagXrXargbWbrXfgb.rVbXk'f'gXar cXeV_Xfr` , fr VXageTWbfr Xar_Jr WbVXaVTz' bgebfr YbVT_niWbfr Xarfhr_JUbeTgobefr [TVXaWbr'ai XfgZTWVEar U, fVT/rlr YaT_ XagXr [Tl r C8 r dhXr 'aVWkr` , fr Xar_Jr Tc_VTU\TWf Wkr fhr VbabV\ XagprWkrVTeTrTrhar\ cTVgbrfbVT_rlrdhXrcbergJagprUhfVTreX_JVbaXfrVbarX_rgX]Wbr'VaWhfgeT_r9fgXrN_g\ brcXeV_rWkrU'f'dhXWTrTVgi TrWkrfbVbfrXkgXea bfrfXrchXWkrXfgTerWtaWbrXar gpeab'T'ha '&\$i` WX_C8 z_b'dhX'Xa'ahXfgeb'VTfb'f'ZaVWT V\Xagof WX'XkcXegf'Xa'X_VT` chf"r

r

8XfWkrX_rl \XeeXVgpeTWbrWkr'aabi TVEaz'GeTafYXeXaVTrl rGXVab_bZAr'cXafT` bfrdhXr` TeVTe, r` hV[brX_rYhgebrTr` XWbrc_JnbrX_r[XV[brWkrdhXr[TI TrahXi bfr]Ei XaXfr'ai XfgZTWbeXfrXr'ai XfgZTWbeTfrdhXri XaZTarVbarhaTrahXi Tr` XagT_\TWf'dhXrabfrTcbeJXarT'eXrYeXfVbrTr_bfrdhXr lTrfb` bfr` Xabfr]Ei XaXf'Wkr[XV[bzfXarX_rcebZeT` TrWkrYb` XagprWkr_JrgeTafYXeXaVTz'haTrWkr_Jfri TeTU_XfrWkrcebe'niTVEarWkr'ahXfgebfrXfYhXembfrWkrU'f'dhXWTrWkrfbVbfrXfrdhXrX_#_Tr'ai XfgZTWbe#TrceVaVcT_rWX_rcebl XVgbrfXTar]bi Xaz' [TfgTr_bfr() rTEbf/f'f'Xr_#_Tr'ai XfgZTWbe#Tr

ceVaVcT_rXfr]bi XažX_rcebl XVgbrfXrcebeñT /T_rZhT_rdhXrfYrXfr` h]Xežf\XaWbrXfgTri TeTU_Xr` hl r
\` cbeqTagXrcTeTr_bfrcebZeT` TfžWkrYe` TrdhXrJfrahXi TfrZXaXeTVbaXfrl rJfrcXefbaTfrdhXr
fXr\avbecbeXarXarX_rYhghabr_Xi XarXarfhr58A rVTWtri Xm` , frXfgbrfrcbVXfbfrWkr\abi TVEarl r
geTafYXeXaVTždhXrVTWtri XmfXe, ar` , freX_Xi TagXfrXarJfreX_TVbaXfrXageXr_Irha\ Xef\WTVl r_Ir
fbVXWTVr

r
CberÑ_g` bžX_rCebZeT` Tr>«A bWkždhXrfhcbaXr_IrVeXTVEarWkrharXVbfVgX` TrUTfTWbrXarX_r
VbabV\ Xagbž` \ c_VTaWbr VXagebfr Wkr \aiXfgZTVEar ž **fgTghcf** Ir gX]Wbr \aWhfgeT_ž
TW \aVgeTVbaXfrcÑU_VTfrl rZeTaWkr\ayetXfgehVghetfžTVgi WTVWfrl rcebZeT` TfžTfĀVb` br
Xi XagbrXar_bfrdhXr_Ir\WhfgeTl r_IrZeTarX` ceXfTrchXWTrXagXaWkerdhĀr ŽŽ\XfcXVĀVTrl r
Wfehcgì TrfXrXfg_r_Xi TaWbrTrVTUbrXar_IrH5@rl žWkrXfgTrYe` TžchXWTrcbaXeWkr` TaYXfgbrl r
cXe` Vge_I_Vb_IUbeTVEarXageX'gWbf`_bf`TVgpeXf`\` c_VTWbf`Xa`X_cebVXfb`r

